

# **FINANCIAL CONSEQUENCES OF IAS ADOPTION: THE CASE OF JORDAN**

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For my respected parents  
For my beloved wife Hiba and daughter Rama



## Acknowledgement

To those whom helped me to finish this critical work my great respect and gratitude.

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## ABSTRACT

Past studies have recognised that a country's accounting system, including disclosure requirements and practice, does not develop in a vacuum but is shaped by a number of influences. Although several studies have been undertaken to identify factors affecting disclosure in various countries including Jordan, disclosure in compliance with all related and relevant International Accounting Standards (IAS), factors influencing disclosure in compliance with IAS and the financial consequences of increased disclosure in compliance with IAS have not been explored.

This research therefore has looked at the development of disclosure in compliance with all related and relevant IAS, the factors influencing disclosure in compliance with IAS and the financial consequences of increased disclosure in compliance with IAS in Jordan. The investigation concentrated on the empirical analysis of:

- 1) The impact of IAS adoption on the Jordanian Industrial Companies (JIC) listed on Amman Stock Exchange (ASE) extent of disclosure over the period 1995-2000, and:
- 2) The impact of five company-specific factors (*company size, audit firm, industry type, profitability, and capital structure*) on the extent of disclosure in compliance with IAS of JIC over the period 1995-2000, and:
- 3) The financial consequences of adopting IAS, more specifically the impact of adopting IAS on systematic risk, unsystematic risk, risk premium, cost of equity capital, and share price volatility of JIC listed on ASE over the period 1996-2000.

The development of accounting reporting and regulations in Jordan in connection with the country economy development was reviewed by highlighting the reasons forced toward adopting the IAS through the Companies Act and Amman Stock Exchange requirements. Such a review provides relevant background to the issue to be investigated in this study.



A survey of accounts of 50 JIC over the period 1995-2000 was undertaken to investigate the influence of the IAS on the extent of disclosure in Jordan. In this investigation, the selected companies' extent of disclosure in compliance with the IAS over the years was examined by conducting both parametric and non-parametric tests.

The impact of company-specific factors, on the other hand, was assessed by looking at the association between selected factors and the extent of disclosure in compliance with IAS in the annual reports of all JIC that met the criteria required over six different years (1995, 1996, 1997, 1998, 1999, and 2000). Both univariate (parametric and non-parametric statistics) and multivariate (multiple regression) analyses were carried out in testing the significance of the association.

As far as the financial consequences are concerned, the study investigated the impact of adopting the IAS on the JIC systematic risk, unsystematic risk, risk premium, cost of equity capital, and share price volatility over five different years (1996, 1997, 1998, 1999, and 2000). For such an investigation, the Capital Asset Pricing Model (CAPM) and the Market Model were employed. In this investigation, the selected companies' systematic risk, cost of equity capital, and share price volatility over the years was examined by conducting both parametric and non-parametric tests. The selected companies' unsystematic risk, however, was investigated by conducting the F-test. In addition, clearly it could be argued that the change in the cost of equity capital as a financial consequence of adopting the IAS might be influenced by other factors, namely: business risk and financial risk. Multivariate (multiple regression) analyses were carried out, therefore, in testing the significance of the association between the cost of equity capital and the extent of disclosure in compliance with IAS after controlling for the variables business risk and financial risk.

The study results revealed that although the adoption for the IAS started in the year 1998, the significant change in the extent of disclosure started before that year. As a consequence, it can be seen that there was a drift up in the extent of disclosure regarding the mandatory action in 1998 for implementing the IAS and not a jump up as was expected to be seen.

The study has found that JIC were not fully adopting the IAS. Chosen company specific factors, therefore, were tested for possible explanation of the variation in the extent of disclosure in compliance with IAS. The results revealed that there were considerable variations in the extent of disclosure by JIC for each of the six years covered in this study. Company size and, to a lesser extent, audit firm and industry type appear to be the best explanatory variables in explaining differences in the extent of disclosure in compliance with IAS among JIC included in this study over the period 1995-2000 suggesting that JIC have been influenced by company-specific factors.

Regarding the financial consequences of adopting the IAS, however, the systematic risk and cost of equity capital, to some extent, was found to be significantly influenced by the extent of disclosure in compliance with IAS of JIC. Such an influence is described as a '*cumulative*' influence. Whereas, it has not been found that unsystematic risk, and share price volatility was significantly influenced by the adoption of IAS.



## Table of Contents

Dedication.....	I
Acknowledgement .....	II
Abstract.....	III
Table of Contents.....	VI
List of Tables .....	IX
List of Figures.....	XII
Abbreviations.....	XIII

### Part I – Introduction, Theoretical Investigation and Literature Review

#### CHAPTER ONE: Introduction

1.1	Accounting Disclosure in Developing Countries.....	1
1.2	Scope of the Jordanian Study.....	5
1.3	The Disclosure Index and Estimating the Cost of Equity Capital.....	6
1.4	Significance of the Study.....	10
1.5	Thesis Organisation.....	12

#### CHAPTER TWO: Jordanian Economy Development

2.1	Introduction.....	16
2.2	Historical Background.....	16
2.2.1	Location and Area.....	16
2.2.2	History.....	17
2.2.3	Population.....	18
2.2.4	Language and religion.....	20
2.2.5	Political and legal system.....	21
2.3	Major events in Jordan History.....	21
2.4	Economic overview.....	24
2.4.1	The 1950 - 1967 Period.....	26
2.4.2	The 1968-1985 Period.....	29
2.4.3	The 1986-2000 Period.....	41
2.5	Economic Strategy, Policies and Globalisation.....	52
2.6	Amman Stock Exchange.....	60
2.7	Summary.....	74

#### CHAPTER THREE: Financial Reporting Regulations Development and IAS

3.1	Introduction.....	76
3.2	The Companies Act.....	76
3.2.1	Companies Act No.12 of 1964.....	77
3.2.2	Companies Act No.1 of 1989.....	79
3.2.3	Companies Act No.22 of 1997.....	82
3.3	The Income Tax Law.....	86
3.4	Amman Stock Exchange (ASE).....	91
3.5	Accounting Profession.....	99
3.5.1	Accounting Auditing Profession Law No.32 of 1985.....	100
3.5.1.1	Jordanian Association of Certified Public Accounting (JACPA).....	104
3.6	IAS: theoretical arguments and prior expectations.....	108
3.6.1	Standardisation: objectives and means.....	109
3.6.2	Relevance of IAS for Developing Countries: the case of Jordan.....	111
3.7	Summary.....	115



## **CHAPTER FOUR: Literature Review**

4.1	Introduction.....	118
4.2	Review of empirical studies concerning disclosure in compliance with IAS.....	118
4.2.1	The impact of IAS on developing countries.....	128
4.2.2	Abstract and evaluation.....	131
4.3	Review of empirical studies concerning the impact of company-specific factors on the extent of disclosure.....	133
4.3.1	Abstract and evaluation.....	158
4.4	Theoretical and empirical literature concerning the financial consequences of increased disclosure.....	179
4.4.1	Theoretical and empirical literature concerning the impact of disclosure on cost of capital.....	180
4.4.2	Theoretical and empirical research concerning the impact of disclosure on share price volatility.....	190
4.5	Summary.....	194

## **Part II – The Research Methodology, Results and Conclusions**

### **CHAPTER FIVE: Research Methodology and Hypotheses**

5.1	Introduction.....	197
5.2	Methodology for Assessing the Impact of the IAS on Disclosure Practices.....	197
5.2.1	Measurement of the Extent of Disclosure.....	211
5.2.1.1	The Disclosure Scoring Sheet.....	213
5.2.1.2	Selecting of Period to be covered.....	215
5.2.1.3	JIC Listed on ASE.....	217
5.2.1.4	Scoring the Disclosure Items.....	220
5.2.1.5	Constructing the Disclosure Index.....	224
5.2.2	Data Analysis and Testing the Hypothesis.....	225
5.3	Methodology for Assessing the Impact of Company-Specific Factors on the Disclosure Practices of Jordanian Companies.....	227
5.3.1	Company-Specific Factors and Development of Hypotheses.....	227
5.3.1.1	Company Size.....	229
5.3.1.2	Audit Firm.....	232
5.3.1.3	Industry Type.....	235
5.3.1.4	Profitability.....	236
5.3.1.5	Capital Structure.....	240
5.3.1.6	Data Analysis and testing the Hypotheses .....	242
5.4	Methodology for Assessing the Financial Consequences of Adopting IAS.....	248
5.4.1	Capital Asset Pricing Model and Market Model.....	254
5.4.1.1	Data Analysis and Testing the Hypothesis.....	263
5.4.1.2	Financial Risk and Business Risk.....	266
5.4.1.3	Data Analysis and Testing the Hypothesis.....	271
5.4.2	Share Price Volatility.....	273
5.4.2.1	Data Analysis and Testing the Hypothesis.....	276
5.5	Summary.....	277

### **CHAPTER SIX: Extent of Disclosure in Compliance with IAS and the Impact of Company-Specific Factors**

6.1	Introduction.....	278
6.2	The Change in the Extent of Disclosure in Compliance with the IAS.....	278
6.3	Company-Specific Factors and the Change in the Extent of Disclosure in Compliance with the IAS in Jordan.....	288
6.3.1	Univariate Analysis.....	289
6.3.1.1	Association between company size -total assets- and the extent of disclosure.....	289
6.3.1.2	Association between audit firm and the extent of disclosure.....	301

6.3.1.3	Association between industry type and the extent of disclosure.....	306
6.3.1.4	Association between profitability -return on investment- and the extent of disclosure.....	314
6.3.1.5	Association between capital structure -leverage- and the extent of disclosure.....	319
6.3.2	Multivariate Analysis.....	325
6.3.3	Conclusion and Evaluation.....	335
6.4	Summary.....	340

## **CHAPTER SEVEN: Financial Consequences of IAS Adoption**

7.1	Introduction.....	343
7.2	The Change in Systematic Risk, Unsystematic Risk, Risk Premium, Cost of Equity Capital, and Share Price Volatility.....	343
7.2.1	The Change in Systematic Risk in Relation with the Extent of Disclosure in Compliance with IAS.....	345
7.2.2	The Change in Unsystematic Risk in Relation with the Extent of Disclosure in Compliance with IAS.....	351
7.2.3	The Change in Risk Premium in Relation with the Extent of Disclosure in Compliance with IAS.....	356
7.2.4	The Change in Cost of Equity Capital as a Result of Disclosure in Compliance with IAS.....	357
7.2.4.1	The Extent of Disclosure in Compliance with the IAS, Financial Risk, and Business Risk and the Change in the Cost of Equity Capital.....	362
7.2.4.2	Multivariate Analysis.....	363
7.2.5	The Change in Share Price Volatility in Following the Change in Disclosure in Compliance with IAS.....	371
7.3	Summary.....	377

## **CHAPTER EIGHT: Conclusions, Boundaries and Future Research**

8.1	Conclusions.....	381
8.2	Boundaries.....	383
8.3	Recommendations.....	385
8.4	Future Research.....	387

## **Appendices**

Appendix 1: IAS disclosure indices items related and relevant to the selected JIC.....	390
Appendix 2: History of international accounting standards concerned.....	425
Appendix 3: Extent of disclosure in compliance with IAS.....	432
Appendix 4: Correlations among selected company-specific factors and stepwise regression results.....	436
Appendix 5: JIC logarithm weekly returns charts.....	447
Appendix 6: JIC actively traded, less actively traded, and the lowest actively traded.....	460
Appendix 7: Included and excluded JIC systematic risk estimated by beta.....	461
Appendix 8: Included and excluded JIC unsystematic risk estimated by residuals variance.....	467
Appendix 9: Treasury bills and risk free rate & Amman stock exchange general index and market return.....	475
Appendix 10: Included and excluded jic cost of equity capital estimated by expected return.....	480
Appendix 11: Correlation coefficients between variables (extent of disclosure, business risk, and financial risk) and stepwise regression results.....	487
Appendix 12: Included and excluded JIC share price volatility estimated by standard deviation....	489
Bibliography.....	496



## List of Tables

Table 2.1: Population and its Growth Rate 1967 – 2000.....	19
Table 2.2: Major Indicators of Growth and Economic Development in Jordan 1954 – 1967.....	28
Table 2.3: Main Macroeconomic Indicators – JD 1968-1985.....	31
Table 2.4: Sectors Participation of GDP - percentages 1968 – 1985.....	35
Table 2.5: Industrial Production of Principal Industries (In Thousand Tons) 1968 – 2000.....	37
Table 2.6: Structure of Trade 1968 – 1985.....	39
Table 2.7: Foreign Loans and Grants 1925 – 1983.....	40
Table 2.8: Main Macroeconomic Indicators (JD Million) 1986 – 1995.....	42
Table 2.9: Main Macroeconomic Indicators (JD Million) 1996 – 2000.....	46
Table 2.10: Sectoral Participation of GDP - percentages 1986 – 1995.....	49
Table 2.11: The Agreements signed over the years 1997-2000.....	57
Table 2.12: Privatisation: Enterprises Privatised.....	58
Table 2.13: Development of Amman Stock Exchange 1978 – 2000.....	67
Table 2.14: Development of London Stocks Exchange (Million JD) 1995 – 2000.....	70
Table 2.15: Non-Jordanian Investment in Amman Stock Exchange 1996 – 2000.....	73
Table 4.1: Abstract of Findings Concerning the Impact of Company-Specific Factors on Extent of Disclosure.....	158
Table 4.2: Studies on Disclosure and Company Characteristics.....	162
Table 5.1: IAS operative during the period 1995-2000 and the IAS relevant to JIC.....	198
Table 5.2: IAS Apply to JIC 1995-2000.....	199
Table 5.3: IAS: Relevant and irrelevant Standards to JIC.....	201
Table 5.4: JIC Listed on ASE and those Considered in the study 1995-2000.....	218
Table 5.5: Big five international audit firms working in Jordan and the number of JIC included in this study audited by each of them over the period 1995-2000.....	234
Table 5.6: Jordanian National Holidays.....	259
Table 6.1: Descriptive statistics of the extent of disclosure over the six years.....	279
Table 6.2: Descriptive statistics of the extent of disclosure for sectors for the total period 1995 – 2000.....	281
Table 6.3: Summary of the results of the paired-samples t-test and the Wilcoxon Matched-Pairs Signed-Ranks Test on the extent of disclosure scores.....	284
Table 6.4: Summary for the mean difference in the extent of disclosure between each pair of Years.....	286
Table 6.5: Summary for the mean difference in the extent of disclosure between each pair of sectors.....	287
Table 6.6: Descriptive statistics of the extent of disclosure for large JIC over the six years.....	290
Table 6.7: Descriptive statistics of the extent of disclosure for small JIC over the six years.....	291
Table 6.8: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Company size and the extent of disclosure.....	293
Table 6.9: JIC Size (Total Assets in JD) over the period 1995-2000.....	296



Table 6.10: Descriptive statistics of the extent of disclosure for JIC their annual reports audited by one of the top five international audit firms over the six years.....	301
Table 6.11: Descriptive statistics of the extent of disclosure for JIC their annual reports not audited by one of the big five international audit firms.....	302
Table 6.12: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Audit firm and the extent of disclosure.....	304
Table 6.13: One-way ANOVA test, descriptive statistics, Levene test and Kruskal Wallis test results: industry type and the extent of disclosure.....	308
Table 6.14: Summary for the mean difference in the extent of disclosure between each pair of sectors.....	313
Table 6.15: Descriptive statistics of the extent of disclosure for high ROI JIC over the six years.....	314
Table 6.16: Descriptive statistics of the extent of disclosure for low ROI JIC over the six years.....	315
Table 6.17: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Profitability firm and the extent of disclosure.....	317
Table 6.18: Descriptive statistics of the extent of disclosure for high geared JIC over the six years.....	320
Table 6.19: Descriptive statistics of the extent of disclosure for low geared over the six years.....	321
Table 6.20: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Structure and the extent of disclosure.....	323
Table 6.21: Results of multiple regression routines.....	329
Table 6.22: Summary of results.....	336
Table 6.23: Stepwise Regression Results 1995-2000.....	340
Table 7.1: Descriptive statistics of the systematic risk estimated by beta 1996-2000.....	346
Table 7.2: Summary of the results of the Paired-Samples t-test and the Wilcoxon Matched-Pairs Signed-Ranks Test on beta values 1996-2000.....	349
Table 7.3: Summary for the mean difference in the systematic risk between each pair of years.....	350
Table 7.4: Descriptive statistics of the unsystematic risk estimated by residuals variance 1996-2000.....	351
Table 7.5: Summary of the results of Residuals Variance Ratio 1996-2000.....	353
Table 7.6: Risk Free Rate, Market Return, and Risk Premium 1996-2000.....	356
Table 7.7: Descriptive statistics of the cost of equity capital estimated by expected return 1996-2000.....	357
Table 7.8: Summary of the results of the Paired-Samples t-test and the Wilcoxon Matched-Pairs Signed-Ranks Test on expected return values 1996-2000.....	360
Table 7.9: Summary for the mean difference in the cost of equity capital 1996-2000.....	361
Table 7.10: Results of multiple regression routines.....	366

Table 7.11: Descriptive statistics of the share prices return volatility estimated by standard deviation 1996-2000.....372

Table 7.12: Summary of the results of the paired-samples t-test and the Wilcoxon Matched-Pairs Signed-Ranks Test on the share price volatility.....374

**List of Figures**

Figure 1.1 Thesis Structure.....12

Figure 6.1: The extent and changes in the extent of disclosure in compliance with IAS  
(Average across all JIC).....280

Figure 7.1 Amman Stock Exchange General Index Weekly Return 1996-2000.....370

## **Abbreviations**

AFM	Amman Financial Market
ASE	Amman Stock Exchange
AB	Audit Bureau
ASE	Amman Stock Exchange
APT	Arbitrage Pricing Theory
CAPM	Capital Asset Pricing Model
CBJ	Central Bank of Jordan
CSD	Central Securities Depository
CAP	Council of the Auditing Profession
DOS	Department of Statistics
EDT	Environment Determinism Theory
EPS	Earning Per Share
EBITDA	Earning Before Interest, Tax, Depreciation and Amortisation
FTA	Free Trade Agreement
GDP	Gross Domestic Products
GAAP	Generally Accepted Accounting Principles
GLM	General Linear Model
HCI	Higher Council for Investment
IASB	International Accounting Standards Board
IASC	International Accounting Standards Committee
IAS	International Accounting Standards
IFC	International Finance Corporation
IFRS	International Financial Reporting Standards
JSC	Jordan Securities Commission
IOSCO	International Organisation of Securities Commission
IMF	International Monetary Fund
JD	Jordanian Diner
JIB	Jordan Investment Board
JACPA	Jordanian Association of Certified Public Accounting
JAS	Jordanian Auditors Society
JIC	Jordanian Industrial Companies
LSE	London Stock Exchange



MM	Market Model
MAS	Management Advisory Services
NPC	National Planning Council
NHS	National Health Service
NEPCO	National Electric Power Company
OECD	Organisation for Economic Cooperation and Development
OLS	Ordinary Least Squares
PPE	Property, Plant and Equipment
QIZ	Qualified industrial Zones
ROI	Return on Investment
SRI	Stanford Research International
SEC	Securities and Exchange Commission
SDC	Securities Depository Commission
SML	Security Market Line
WHO	World Trading Organisation

# CHAPTER ONE

## INTRODUCTION

### 1.1 Accounting Disclosure in Developing Countries

Past studies have recognised that accounting disclosure requirements and practices do not develop in a vacuum but are shaped by a number of influences (Adhikari and Tondkar 1992; Choi and Mueller 1992). Looking at disclosure from the macro perspective, Environment Determinism Theory (EDT) suggests that both national and international environment factors are important factors affecting accounting disclosure in a country. Despite the view that the accounting system in a country should reflect environmental factors inherent in the country (Briston 1978; Bursal 1984), there is evidence in the literature, which suggests that accounting, including disclosure, in developing countries is likely to be influenced more by external factors (Cooke and Wallace 1990). Addressing the external environmental or international influence, Wallace (1987, P.641) stated that:

*“The influences of international agencies on developing countries is so strong that it is almost unbelievable that the literature works on the assumption that these countries are free to choose and determine their accounting systems”.*

International harmonisation/ standardisation efforts are amongst the suggested important external environmental factors. One of the primary generators of such efforts is the International Accounting Standards Committee (IASC), which has issued a number of accounting standards (IAS).<sup>1</sup> Despite some arguments that have questioned the suitability of the IAS for developing countries (Samuels and Oliga 1982; Saudagaran and Meek 1996), it has been claimed that the work of the IASC has had an impact on IASC member developing countries<sup>2</sup> (Iddamalagoda

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<sup>1</sup> Effective 1 April 2001, the International Accounting Standards Board (IASB) assumed accounting standard setting responsibilities from its predecessor body, the International Accounting Standards Committee (IASC). This was the culmination of a restructuring based on the recommendations of the report Recommendations on Shaping IASC for the Future. According to the new structure, the IASC is an independent organisation having two main bodies, the Trustees and the IASB, as well as a Standards Advisory Council and the International Financial Reporting Interpretations Committee. The IASC Foundation Trustees appoint the IASB members, exercise oversight and raise the funds needed, whereas IASB has sole responsibility for setting accounting standards called International Financial Reporting Standards (IFRS) ([www.iasc.org](http://www.iasc.org)).

<sup>2</sup> Jordan is one of the IASC member bodies through Jordanian Association of Certified Public Accountants (JACPA). In addition, Jordan was one of the IASC board members over the period 1988-1995 (Cairns, 2002, PP. 18-20).



1986; Nobes and Parker 1995). There are some indicators supporting such claim (IASC 1997; Purvis et al. 1991). The suggested reasons for such influences include the high cost of setting up national standards and developing countries' inability to set their own standards, to facilitate the growth of international trade and attract foreign investment and join the international harmonisation/standardisation drive. The majority of the developing countries have adopted/adapted or have been using IAS are (or have been) members of the British Commonwealth (IASC 1997; Purvis et al. 1991).

On the basis of the above arguments, it may be possible to hypothesize that the standardisation effort by IASC is amongst the important external environment factors that are likely to have an influence on the extent of disclosure in a country like Jordan. Jordan does not have an equivalent of the Accounting Standards Board and, prior the imposition of IAS, the country did not have agreed national accounting standards. The country has a close economic and trade relationship with European Union (EU) member countries and the USA. In addition, Jordan is not a member of the British Commonwealth, but an IASC member developing country with aspiration to attract major foreign investments.

As developing countries are not a homogenous group, the claim that the work of the IASC has had an influence on developing countries cannot be generalised until we understand the impact of the IAS in many of these countries. For example, little is known about the impact of the IAS on the extent of disclosure, their impact on systematic risk, unsystematic risk, risk premium, cost of equity capital, and on share price volatility, or the effect on international trade. In particular, there is no empirical evidence, that investigates the impact of the all related and relevant IAS on the extent of disclosure, systematic risk, unsystematic risk, risk premium, cost of equity capital, and share prices volatility for companies listed in the stock market in a country like Jordan.

From a micro (company) perspective, it has been suggested that there are company-specific factors that may affect the extent of disclosure in compliance with IAS. Although the association has long been recognised, the results of the previous studies carried out in different countries have been mixed, to a certain

extent inconsistent and sometimes contradictory. Such inconsistency or contradiction, however, could be for different reasons: 1) the number of firms included in the sample, 2) the type and number of company characteristics examined, 3) the number of information items that formed the basis of the set of disclosure indexes as a dependent variable, and 4) the different statistical methodologies used to analyse the data.

Hence, a further investigation into the impact of company-specific factors of the extent of disclosure in compliance with IAS in a country, which was not subject to such a previous study, may contribute to efforts that have been made to identify the factors affecting the extent of disclosure of companies. Jordanian companies have not been covered in the previous disclosure studies in compliance with all related IAS, (as far as this researcher is aware), and therefore the impact of company-specific factors on the extent of disclosure in compliance with all related and relevant IAS is not known.

For the accounting years ending December 1998, IAS was made mandatory through the Companies Act No.22 of 1997 and Securities Law No.23 of 1997 for all Jordanian public companies. Unfortunately there was no institutional change to check on compliance. However, it does create an opportunity to test if there were any factors, which systematically affected or were associated with the degree of compliance.

On the basis of the review of relevant literature and theoretical arguments summarised above, the research problem has been identified as the following questions:

1. Has the extent of disclosure of Jordanian companies been influenced by the IAS?
2. Has the extent of disclosure in compliance with IAS of Jordanian companies been influenced by company-specific factors, namely: company size, audit firm, industry type, profitability and structure?



One of the claimed benefits of adopting an improved system of disclosure is that it leads to a reduction in the cost of capital to companies (Amihud and Mendelson 1986; Baiman and Verrecchia 1996; Barth et al. 1999; Botosan 1997; Botosan and Plumlee 2000; Brealey and Myers 2000; Choi 1973; Copeland and Galai 1983; Demsetz 1968; Diamond and Verrecchia 1991; Gary and Gray 1989; Gary et al. 1995; Glosten and Milgrom 1985; Holthausen and Leftwich 1983; Huddart et al. 1999; Levitt 1998; Richardson and Welker 2001; Sengupta 1998; Verrecchia 1996). The argument is that improved information reduces uncertainty about a company and therefore, potentially the risk premium required by investors. There are many models for explaining how the risk premium arises. The capital asset pricing model (CAPM), arbitrage pricing theory (APT), and the Fama & French (1995) model are all possible explanations of the risk premium facing companies – and the equity risk premium in particular. For the purpose of this work, the CAPM will be used as the maintained model of asset pricing.

Within this framework to test whether the cost of equity capital has been reduced requires a preliminary question of whether the uncertainty is systematic or unsystematic. Fundamentally, a further preliminary question has to be discussed and that is whether stock market volatility has been reduced. This leads to asking the following questions:

3. Have the systematic risk, unsystematic risk, risk premium, and cost of equity capital of Jordanian companies been influenced by the IAS adoption?
4. Has the share price volatility of Jordanian companies been influenced by the IAS adoption?

It is conceivable, however, that the cost of equity capital has been influenced by other changes taking place over the period other than the change in the extent of disclosure in compliance with IAS. In particular, the firms may have been changing their business risk or their financial risk and this need to be controlled for in assessing the impact of the change in disclosure on the cost of equity capital. It is also conceivable that the firms have responded to the change in extent

of disclosure in compliance with IAS by changing their business and financial risk. These effects lead to ask the following question:

5. Has the cost of equity capital of Jordanian companies influenced by the business risk and financial risk?

## **1.2 Scope of the Jordanian Study**

This study is essentially a single-country study which reviews the development of the Jordanian economy and the disclosure regulations requirements in order to assess the impact of IAS through empirical investigation on the extent of disclosure, systematic risk, unsystematic risk, risk premium, cost of equity capital, and on share price volatility.

Jordan is chosen as the focus of this study for several reasons. Firstly, it is an open economy in the Middle East especially to EU members and USA. Secondly, the Amman Stock Exchange is growing rapidly and this creates a possibility of testing cost of capital propositions. Thirdly, so far, however, little is known about the impact of the extent of disclosure in compliance with IAS on systematic risk, unsystematic risk, risk premium, cost of equity capital, and on share price volatility not only in developing countries but also in developed countries as well. Fourthly, the sudden imposition of IAS by the Jordanian Companies Act and the Securities Law creates an opportunity for stronger tests of the propositions about disclosure and the cost of capital.

To test the propositions, a sample of only Jordanian industrial companies was selected. These companies had existed for the six years period 1995-2000 under consideration. They had to have a full set of company accounts and they had to have been continuously trading over the whole period.

Having chosen the sample of companies, it was vital to assess which of the IAS were relevant to the company and companies. For example, IAS related to consolidated financial statements would be rarely relevant because groups of



companies are unusual in Jordan. However, there is always some ambiguity as to whether a standard or item is relevant or not, so some choices had to be taken. This clearly affects the interpretation that is given to make about the degree of compliance. It also means that this variable, of the degree of compliance, is inevitably measured with errors.

The study investigation was limited to the disclosure of information in Jordanian industrial companies' annual reports. Whilst there are other sources through which companies may disclose information, the choice of companies' annual reports as the source of information was taken because actual disclosure may be assessed most accurately through annual reports as pointed by Tai et al. (1990). The years covered in this study are 1995, 1996, 1997, 1998, 1999 and 2000. The reason for covering more than one year is it provides robust evidence as regards the impact of the factors covered in this study, to investigate the period pre and post the announcement of the adoption of IAS in Jordan in the first of September 1998 through the Securities Law No.23 of 1997. Giner (1997, P.63) argued that the analysis of several years, instead of focusing one year per company as most studies do, could provide stronger and more relevant results.

### **1.3 The Disclosure Index and Estimating the Cost of Equity Capital**

Seeking an answer to the question concerning the extent that Jordanian industrial companies comply with the mandatory requirement to disclose IAS, an updated disclosure index has to be developed, which contained all operative, related and relevant IAS. Each of the IAS related to the period under investigation is analysed in order to develop the list of disclosures required by IAS. It has to be noted that many of these standards have been revised, reformatted and combined into other standards over the years, which has been taken into account. The number of IAS considered in this study for developing the updated disclosure index, therefore, was 18 over the period 1995-1998 and 21 over the period 1999-2000. The disclosure index covering the period 1995-1997 contained 137 applicable items to the selected JIC-s', while the disclosure indices covering the years 1998, 1999 and 2000 contained 186, 221 and 219 items, respectively. The selected items are those

which have been influenced by: 1) The items had to be potentially relevant to a set of JIC-s' that could be characterised in general as domestic manufacturing firms. 2) Each item had to be applicable to the generality of firms. 3) The items have been chosen so that it is easy to verify whether the company discloses it or not.

The procedure followed to measure this disclosure is as follows: 1) Construction of a disclosure-scoring sheet, 2) Selection of the period to be covered, 3) Identification of Jordanian Industrial Companies listed in the Amman Financial Market over the period considered, 4) Scoring the disclosure items, and 5) Constructing the disclosure index.

The index used in this study is a modified unweighted index called "*Partial Compliance (PC)*". The degree of compliance for each company, according to this approach, is measured by adding the degree of compliance for each standard. This implicitly gives equal weighing to each applicable standard and avoids the problem of unintentionally giving more weight to a standard with a larger number of items in the index. It gives equal weighing for each standard instead of equal weighing for each item as it is in the unweighted approach used by earlier studies.

The choice of area of accounting practice to be covered in this study was based upon the fact that Jordanian companies are small national companies comparing with those multinational ones. Furthermore, IAS requirements concerning advanced accounting practices such as deferred tax, accounting for leases, inflation accounting, etc are not applicable.

Despite the above processes for developing as accurate indices as possible, it has to be noted that developing those indices are limited to items where compliance is visible and therefore the research inevitably end up testing disclosure more than measurement and accounting policy statements more than accounting practice. The index is therefore a proxy for compliance and in some ways a slightly biased proxy. In particular, in measuring the extent of disclosure in compliance with IAS, the study is reliant on the fact that companies making clear statements of accounting policy and making them honestly.



One of the key hypotheses to be tested in this work is whether the introduction of IAS had any influence on the cost of equity capital of Jordanian companies. To test this hypothesis requires a model of asset pricing. There are many models of asset pricing including the Capital Asset Pricing Model (CAPM), Arbitrage Pricing Theory or multi-factor models and the Fama & French Model (1995). The CAPM is used in this study because it is the dominate model in the academic and professional literature. Moreover it has been adopted by industry regulators throughout the world.

In the CAPM model the risk of the security that matters is the systematic (or non-diversifiable risk). Other forms of risk that can be diversified away do not require compensation by investors. In the equilibrium of this model this systematic or beta risk is priced by the market risk premium where this is the difference between the expected return on the market portfolio and the risk free rate. The product of the market risk premium and the beta constitutes the risk premium in the model. The total expected return on a security, or its cost of capital, is the sum of this risk premium and the risk free rate.

The CAPM shows that it is only a security's systematic risk, which is of interest to a well-diversified shareholder. The value of  $\beta$  is, therefore, of key importance to the investor. The higher the systematic risk of a security, the higher the return required by the investor. The major conclusion of the CAPM is that the price of security  $j$  will adjust so that its expected return  $E(r_j)$  is given by:

$$E(r_j) = r_f + (E(r_m) - r_f) \beta_j$$

Where  $r_f$  is the risk-free rate of interest. The expected return depends linearly on the systematic risk ( $\beta_j$ ). The relationship between  $E(r_j)$  and  $\beta_j$  is known as the Security Market Line (SML). The  $\beta$  of a security is the standardised covariance of a security's return with the market return on the market portfolio. Therefore:

$$\text{Beta of security } i = \text{Cov}(r_i, r_m) / \text{Var}(r_m)$$

To assess the impact of IAS on the cost of capital we have to look to its impact on the three components of the CAPM – the risk free rate, the market risk premium and beta. It is unlikely that IAS will influence the risk free rate since this is likely to be determined by macroeconomic factors in Jordan and the world economy. For this reason the impact of IAS on the cost of capital only focuses upon the risk premium and its two components.

It proves to be difficult to estimate the impact of the IAS on the market risk premium for Jordan. To estimate it would require an estimate of the expected rate of return on the market portfolio in Jordan and the risk free rate. Unfortunately Jordan has issued very few treasury bills over this period making a reliable estimate difficult to obtain. However the market risk premium is shown to be remarkably stable throughout the international community and it is this that is used as a proxy.

This leaves beta as the only factor to be estimated. For this purpose the Market Model is used. However because the CAPM always forces the beta of the market portfolio to be one, a security's beta is estimated on an international portfolio and not a Jordanian market portfolio. This methodology then enables a test of the hypothesis to be made in the context of the international community. Did the introduction of IAS lead to a reduction in the cost of equity capital of Jordanian companies compared to other international companies?

The Market Model is a statistical model, which relates the return of any given security to the return of the market portfolio. The model's linear specification follows from the assumed joint normality of asset returns. For any security  $i$  we have:

$$R_{ij} = \alpha_{ij} + \beta_j r_{mt} + \varepsilon_{ij}$$

We assumed the  $\varepsilon_{ij}$  were uncorrelated random error terms with mean zero and constant variance  $\sigma^2$  (homoskedasticity and not hetroskedasticity)<sup>3</sup>. That is,

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<sup>3</sup> For more details see (Hill et al. 2001, PP. 235-237).



$$E(\epsilon_{ij}) = 0, \text{ Var}(\epsilon_{ij}) = \sigma^2, \text{ Cov}(\epsilon_i, \epsilon_j) = 0$$

Where  $r_{ij}$  and  $r_{mt}$  are the period- $t$  returns on security  $i$  and the market portfolio, respectively, and  $\epsilon_{ij}$  is the zero mean disturbance term, constant variance and not correlated with itself or with the market return.  $\alpha_{ij}$  and  $\beta_j$ , and  $\epsilon_{ij}$  are the parameters of the market model.

#### 1.4 Significance of the Study

An understanding of the issue of International Accounting Standards and its impact upon the extent of disclosure in a country like Jordan suffered for long time from having specified and determined disclosure requirements by the law is important. It could be added that such importance increased when the country's economy depends heavily on neighboring countries and foreign investment; an issue is not part of the study investigation. So far, there is no published information about the impact of IAS on extent of disclosure and what company-specific factors influencing such extent, systematic risk, unsystematic risk, risk premium, cost of equity capital and share price volatility. This is the first study addressing these issues, which will contribute to a better understanding in Jordan and so will represent an addition to knowledge. Given the fact that Jordan is a developing country, this study may also add to the existing knowledge about the factors influencing extent of disclosure, systematic risk, unsystematic risk, risk premium, cost of equity capital, and share price volatility in developing countries.

Adhikari and Tondkar (1992, P.77) argued that studies examining environmental influences on accounting are important because they can help in providing empirical evidence on the asserted relationships between environmental variables and accounting disclosure. This study which has attempted to assess the impact of IAS as an external environmental factor on accounting disclosure and its financial consequences in Jordan would provide evidence on the proportion that this factor have had an impact on developing countries.

The significance of such assessments in terms of contribution to knowledge is as follows: it is sometimes argued that developing countries are influenced by

standards issued by the IASC although these are primarily members of the British Commonwealth (Purvis et al. 1991), as the content of IAS was closely consistent with the practices in a number of developed British Commonwealth countries including the UK (Nobes and Parker 1995). Moreover, the accounting systems of developing countries that are member of the British Commonwealth were similar to the accounting system of the UK. Adoption or adaptation of the IAS by these countries, however, does not itself provide sufficient evidence to make a meaningful generalisation that the IAS have had an impact on developing countries. Therefore, this research, which assesses the factors affecting extent of disclosure, systematic risk, unsystematic risk, cost of equity capital and share price volatility in Jordan, a developing country that was under close British supervision during the period 1918-1946, may extend our knowledge on the impact of the IAS on developing countries.

Studies examining the impact of the IAS on extent of disclosure and as a result the financial consequences of that impact in various countries, developed and developing, are quite important issue. That is because they can help to identify whether or not such standards, which attempt to reduce differences in financial reporting and disclosure practice among countries, are succeeding. Success could be measured by increasing extent of disclosure, lower systematic risk, lower, unsystematic risk, lower risk premium, lower cost of equity capital, and less share price volatility.

The majority of past studies that examine the association between company-specific factors and the extent of disclosure have focused on one year and therefore provided a point-in-time picture using mostly univariate or multivariate analysis. Only a few studies have examined such a relationship by covering more than one year per company (Al-Modahki 1996; Amernic and Maiocco 1981; Soh 1996). In addition, interestingly, previous studies have reported inconsistent results (e.g. different factors found to be significant in different years or factors found to be significant in certain years, but found to be insignificant in other years). This study, which looks at the association between company-specific factors and extent of disclosure over six different years using both univariate and multivariate analysis, will provide further evidence of association between



company-specific factors and extent of disclosure in compliance with IAS over time.

Furthermore, an analysis of the relationship between the level of disclosure and characteristics of reporting firms will not only extend our knowledge of significant factors influencing the extent of disclosure, but may also be of use to regulatory authorities. This could be done by selecting an appropriate course of action for setting up new or modifying existing regulations.

To summarise, this is the first study on extent of disclosure in compliance with IAS and factors influencing this extent. It is the first study investigates the financial consequences of adoption the IAS in Jordan, a developing country. This study, therefore, will contribute to a better understanding of accounting disclosure and the factors influencing accounting disclosure in a developing country. It will also contribute to efforts that have been made to identify the company-specific factors affecting extent of disclosure in compliance with IAS adopted by companies.

## **1.5 Thesis Organisation**

This thesis is structured into 8 chapters divided into two main parts. Figure 1.1 shows the overall structure of the thesis.

**Part I** provides an introduction to the empirical research, examines Jordanian economy development, disclosure requirements regulations changes since the establishment of the country and reviews the literature relevant to the study objectives. This part consists of four chapters:

### Chapter One

It is the summary of the thesis. It introduces the research problems and purpose of the study, explains the scope of the research and also stresses the significant of the study in terms of contribution to knowledge. Finally, the general organisation of the study is laid down.

## **Figure 1.1**

### **Thesis Structure**

#### **Part I – Introduction, Theoretical Investigation and Literature Review**

##### **Chapter One**

The Introduction

##### **Chapter Two**

Jordanian Economy Development

##### **Chapter Three**

Financial Reporting Regulations Development and IAS

##### **Chapter Four**

Literature Review<sup>4</sup>

A- Review of Empirical Literature Concerning Disclosure in Compliance With IAS

B- Review of Empirical Literature Concerning Influence of Company-Specific Factors on Extent  
of Disclosure

C- Theoretical and Empirical Research Concerning Financial Consequences of Increased  
Disclosure

#### **Part II – The Research Methodology, Results and Conclusions**

##### **Chapter Five**

Research Methodology and Hypotheses

##### **Chapter Six**

Extent of Disclosure in Compliance with IAS and the Impact of Company-Specific Factors

##### **Chapter Seven**

Financial Consequences of IAS Adoption

##### **Chapter Eight**

Conclusions, Boundaries, and Future Research

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<sup>4</sup> This section included a review of literature on macroeconomic factors influencing extent of disclosure.

## Chapter two

After introducing the summary of the thesis by Chapter One, Chapter Two looks at the historical background; major events in Jordan history, economic overview; economic strategy, policies and globalisation; and Amman Stock Exchange (ASE) development.

## Chapter Three

The chapter focuses upon the financial reporting regulations specified by the Jordanian laws and its developments over the years since the establishment of the country. As factors affecting financial reporting in Jordan, Companies Acts is the first piece of Jordanian legislation to look at followed by Income Tax Law, Amman Stock Exchange Law (ASE) and finally Accounting Profession involvement. By doing so, the question of the necessity of adopting IAS in Jordan has been explored, as a result, by discussing issues such as IAS: theoretical arguments and prior expectations, standardisation: objectives and means, and finally IAS relevant for Jordan.

## Chapter Four

This chapter reviews previous empirical evidence in the literature concerning the study objectives. It is reviewing; the literature on disclosure, company-specific factors influencing extent of disclosure, cost of equity capital and share price volatility.

## Chapter Five

This chapter explains the research methodology used and the hypotheses developed in this study for achieving its objectives. This chapter is divided into three main sections. The first section explains the research methodology adopted to investigate the impact of IAS on extent of disclosure of Jordanian Industrial Companies listed in ASE over the period 1995-2000. The second section explains the research methodology adopted to analyse the impact of company-specific factors on extent of disclosure in compliance with IAS by Jordanian Industrial Companies listed in ASE over the period 1995-2000. The third section explains the research methodology adopted to investigate the financial consequences of adopting the IAS. The investigation starts by exploring the impact of IAS on

systematic risk, unsystematic risk, risk premium, cost of equity capital, and on Jordanian Industrial Companies share price volatility over the period 1996-2000. The research hypotheses to be tested are also developed in this chapter.

### Chapter Six

Reports and discusses the results of the research that is conducted to explore the impact of IAS on JIC extent of disclosure. In addition, the chapter reports and discusses the results of the univariate and multivariate tests conducted to assess the impact of company-specific factors on extent of disclosure in compliance with IAS of Jordanian Industrial Companies listed in ASE and their share traded over the period 1995-2000.

### Chapter Seven

Reports and discusses the results of the research that is conducted to explore the impact of the extent of disclosure in compliance with IAS on systematic risk, unsystematic risk, risk premium, cost of equity capital, and share price volatility of Jordanian Industrial Companies listed in ASE and their share traded over the period 1996-2000.

### Chapter Eight

Summaries, discusses and evaluates the research findings; identifies the boundaries of the study; and offers suggestions for future research.



## **CHAPTER TWO**

### **JORDANIAN ECONOMY DEVELOPMENT**

#### **2.1 Introduction**

It could be argued that in a world, where the globalisation and free trading and investments agreements is a big issue nowadays and playing a vital role in any country accounting system and, hence, its corporate reporting and disclosure practices. Thus, it might be necessary to explore the environmental characteristics of Jordan in order to determine whether its accounting system has been developed in an appropriate way that fits its environment.

This chapter accordingly, attempts to examine the issue mentioned above in the following sections by looking at the Historical background; Major events in Jordan history; Economic overview; Economic strategy, policies and globalisation; and Amman Stock Exchange (ASE). The final section provide a summary of the chapter. By exploring the above aspects, moreover, the chapter could provide some evidence whether the impact of adopting the IAS in Jordan in 1998, the major issue of this study, has significantly influenced the macroeconomic indicators in the Jordanian economy.

#### **2.2 Historical Background**

##### **2.2.1 Location and Area**

Jordan is a developing Arab state boarded by Syria on the north, Iraq on the north-east, Saudi Arabia on the south-east and West Bank on the west. It is a small county of 89,544 sq. km. (34,573 sq. mi.) situated near the southeastern coast of the Mediterranean which has given it strategic and economic importance and a vital trading and communication link between countries, people, and continents. The kingdom has a diverse range of landscapes. The Badia lie to the east with hills and mountains. The fertile rift valley cleaves the length of the country forming a natural boundary to

the lowest into which the Jordan River flows and converges at the Dead Sea, the lowest point on earth. At the southern tip of Jordan is the Gulf of Aqaba, which gives the country access to the Red Sea.

### **2.2.2 History**

Jordan has been home to some of the world's earliest human settlements. The land of Jordan has changed hands many times up to the 20<sup>th</sup> century parts of the modern Jordan were included in the dominions of ancient Sumerian, Akkadian, Babylonian, Assyrian, and Mesopotamian Empires. From the west, Pharaonic Egypt extended its power, while nomadic Nabateans built their empire in Jordan (including the city of Petra) after migrating from the south. Finally, Jordan was incorporated into the classical civilisations of Greece, Rome, and Persia.

Since the mid-seventh century AD, the land of Jordan has remained almost continuously in the hands of various Arab and Islamic dynasties. These include the Umayyads (661 - 750), the Abbasids (750 - 969), the Fatamids (969 – 1171), the Ayyubids (1174 – 1263), and the Mamluks (1250 – 1516).

From 1516 to the end of the First World War (1918), the territory occupied by Jordan formed part of the Ottoman Empire. The modern history of Jordan began with dethronement of the Ottoman rule after the First World War in 1918. The Emirate of TransJordan, which was under close British supervision, was created in April, 1921 as part of the post-war settlement and as an appendage to the British mandate in Palestine. In May 1946, the Hashemite Kingdom of Jordan was declared as an independent estate. As a result of the creation of Israel in May 1948 and the subsequent Arab-Israeli war, Jordan controlled the West Bank, which remained in Arab hands, and unity between the two Banks (East and West) was realised in April, 1950, following a general election for a new council of representatives in which Palestinians were to have the same number of seats as Transjordan.

The West Bank was occupied by Israel in 1967 and consequently, in practice, the unity between the two regions broke down. The legal relationship survived until July 1988 when King Hussein of Jordan (1953-1999) declared the disengagement of the legal and administrative relationship between the two parts. In July 1994, King Hussein signed an agreement with Israel ending 46 years of war and tension relations between the two countries. Jordan, nowadays, is led by King Abdullah, eldest son of the late King Hussein.

### **2.2.3 Population**

Jordan's population was estimated 5.04 million in 2000 with an annual growth rate of 2.8 percent (DOS 2000, P.1) and average annual per capita 1089.2 JD in 1998<sup>1</sup>. The population's gender breakdown is almost equal with 52% males and 48% females. The majority (over 38%) is concentrated in the greater Amman region, with a further 18% in Irbid in the west, 15% in Zarqa, and 2% in Aqaba. There is still a very small number of Bedouin who live a semi-nomadic existence (Amman Chamber of Industry, 2000). It has to be mentioned, however, that there was a slow fall in the population growth rate during the last decade. Table 2.1 shows the fact that people who are living in Jordan has increased rapidly over the years.

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<sup>1</sup> It has to be noted that the exchange rate for JD in 24/10/2002 is £1.0179 for buying and £1.1547 for selling.



**Table 2.1: Population and its Growth Rate 1967 – 2000**

<b>Year</b>	<b>Population (In Million)</b>	<b>Growth Rate %</b>
1967	1.19	**
1968	1.23	3.4
1969	1.35	8.0
1970	1.51	11.8
1971	1.53	1.3
1972	1.55	1.3
1973	1.57	8.3
1974	1.70	6.5
1975	1.81	4.4
1976	1.89	2.6
1977	1.94	3.1
1978	2.00	6.5
1979	2.13	4.2
1980	2.22	4.0
1981	2.31	3.5
1982	2.39	4.2
1983	2.49	4.0
1984	2.60	4.2
1985	2.72	4.4
1986	2.81	3.2
1987	2.90	3.1
1988	3.03	4.3
1989	3.14	3.5
1990	3.47	10.2
1991	3.70	6.7
1992	3.84	3.8
1993	3.99	3.9
1994	4.14	3.7
1995	4.29	3.6
1996	4.44	3.4



**Table 2.1: Population and its Growth Rate 1967 – 2000**

<b>Year</b>	<b>Population (In Million)</b>	<b>Growth Rate %</b>
1997	4.60	3.6
1998	4.76	3.5
1999	4.90	2.9
2000	5.04	2.8

Source: Department of Statistics, Different Issues, Amman, Jordan.

As it can be seen, Table 2.1 shows that the population growth was consistence around 3.3 percent during the period 1995-2000. In addition, it shows that the average growth rate was higher than 6 percent for some years like 1969, 1970, 1973, 1990, and 1991. This dramatic increase could be explained as a result of people emigrated from their countries to Jordan as a consequence of conflicts happening in their countries like Palestine, Lebanon and Iraq. Such a situation, therefore, makes it hard to any Jordanian government over the years to grow the General Domestic Products (GDP) to match the population growth in order to improve the standards of living.

Finally, it can be said that Jordan has a relatively young population where more than 67 percent of the population less than 25 years old (Jordan and World Bank 1998, P.12). The mortality rate decreased to 5 percent 1000 population, while expectancy is 68 years for male and 73 years for female in 2000 (DOS 2000, P.1).

#### **2.2.4 Language and religion**

The official language is Arabic, but English is widely understood and is often used as a second language in commerce. Islam is the predominant religion, with over 92% of the population being Sunni. Some 6% is Christian, mainly Greek Orthodox and Catholic. The remainder, Sunni Cireassians, who settled in Jordan around 1878, few Baha'is, Druze, and a small number of Shia Muslims. Muslim New year and other Islamic holydays are Public holidays.

### **2.2.5 Political and legal system**

Jordan is a constitutional monarchy with legislative power vested in the king and the National Assembly. The country has parliamentary representation. The National Assembly is divided into two houses: the senate with 40 representatives appointed by the king; and the House of Representatives with 80 deputies through popular suffrage.

Legislation is drafted by the Government and presented to Parliament for debate and approval. Joint House sessions may be held to resolve any impasses in the lower house. Upon approval, the King must ratify laws. Judges are independent of both the legislature and executive branches, and are appointed by Royal Decree. There are three categories of court: civil, religions and special.

### **2.3 Major events in Jordan History**

It might be necessary before exploring the Jordanian economy development over the years since the declaration of being independent state in May 1946, to introduce in brief the main events, which had a significant effect on the economy. The Jordanian economy had a remarkable shock when the population trebled in 1948 as a result of the first Arab-Israel War (Abdullah 1994, P.57). Consequently, Jordanian government began during that period to be dependent on foreign aid for expanding the country infrastructure and services (Day 1986, P.97). The economy, therefore, shifted from being agricultural orientated to service economy (Piro 1998, P.30).

The years started from 1967 until 1973 were the most difficult period for the Jordanian economy because of two wars in almost four years. The 1967 Six Days war with Israel imposed a heavy burden on the Jordan economy, which not only changed the population structure by being increased about quarter in one year as a result of the Palestinian being pushed outside the West Bank ‘see Table 2.1’ but also the loss of the land considered as the most productive for the country at that time (Mazur 1979, P.81). Moreover, the

civil war during 1970-1971 disturbed the development efforts and added more burden on Jordan's economy mainly because of the cut off aid by Arab states like Kuwait and Libya to the Jordanian government as a result of Jordan's actions against the Fedayeen Group (Piro 1998, P.62).

Although Jordan is not producing oil, its economy depends heavily on the oil prices. The oil price revolution during the period 1970s reflected positively on Jordan's economy by enjoying sustained boom (Jordan and World Bank 1998, P.4). Moreover, the prosperity in Jordan's economy was a result of influxes of aid and soft loans from the Gulf States, the most prolific oil producers in the world, which were significant monetary transfers to the country. In addition, the large number of Jordanian citizens who were working in the Gulf States provides their families as well as their country an important source of income.

Both, the external aid and workers remittance constituted 58 percent of Jordan's GDP (Michael et al. 2001, P.31) which will be explored in the following section. The effect on Jordan's economy during the period 1970s as a result of that sudden wealth, however, brought full employment where almost 300 thousands Jordanians worked in the Gulf counters, especially in Saudi Arabia and Kuwait (Day 1986, P.98).

The collapse of the international oil market in the 1980s caused a significant effect upon Jordan's economy, particularly on the level of foreign aid from the oil Arab states which fell from \$ 1.1 Billion in 1981 to less than \$ 600 million in 1989 (Michael et al. 2001, P.32). Moreover, the supply of jobs for foreign workers has shrunk in the oil exporting Arab countries and accordingly there was not only drop on the level of remittances sent home by Jordanian workers abroad, but also on the level of products exported from Jordan to these countries. In addition, the war between Iraq and Iran for 8 years (1980-1988) affected badly the Jordanian economy since many Jordanian companies relied heavily on the Iraqi market, the biggest trade partner for Jordan.



Finally, Jordanian export revenues declined at that time because of declining in exporting the phosphates and potash as a result of depreciation in its prices (Nismba 1990, P.2). As a result of all these difficulties mentioned above Jordanian government had to borrow heavily to meet its budgetary requirements as well as to compensate the excessive reliance on foreign assistance and workers remittances. Therefore, it can be seen, from the outstanding foreign debt to the Jordanian government, as will be presented shortly, that Jordan started to rely on foreign debt from commercial and international banks heavily since that time (1980s) which has become intolerable and poses an extreme difficult for the Jordanian economy.

By 1988 Jordan was on the verge of an economic crisis and its symptoms were as following (Michael et al. 2001; Piro 1998):

1. Stunting GDP growth, this declined that year by 1.6 percent and lower per capita income.
2. Debt burden increased from \$2.3 billion to \$6.5 billion by the end of 1988 (Al-Nabils 1994, P.175).
3. Almost \$20 to \$30 billion of Jordanians' capital was held abroad which might be because of high level of risk in the Jordanian economy regarding the economic instability.
4. By mid 1988 Central Bank of Jordan official reserves was only \$19 million.

Due to the above developments, the crises led to devaluation for the Jordanian currency (the Dinar) by 50 percent (Piro 1998, P.73).

Jordan's deep economic crises forced the Jordanian government to begin rescheduling the debt with the International Monetary Fund (IMF), who agreed to implement a five year recovery plan from 1989 to 1993. The 1990/1991 Gulf War between Iraq and the United Nations led by the USA as a result of occupying Kuwait by the Iraqis aggravated, however, Jordan's already serious economic problems. Consequently, Jordanian population increased more than 10 per cent (300 thousand Jordanians from Saudi Arabia and Kuwait) rising the unemployment rate to record high of 25

percent (Feiler 1993) and, thus, an important source of income was lost. The United Nation considered Jordan to be the most damaged country from that crisis (ESCWA 1991, P.5).

What will be presented in the following sections from economic factors, however, should be views in the context of that major events happened over the years since the independence in 1946.

## **2.4 Economic overview**

Jordan is a small country with limited natural resources. Just over 10% of its land is arable, and even that is subject to the vagaries of a limited water supply. Rainfall is low and highly variable, and much of Jordan's available ground water is not renewable.

Jordan's economic resource base centers on phosphates, Potash, and their fertilizer derivatives; tourism; overseas remittances; and foreign aid. These are its principal sources of hard currency earnings. Lacking forests, coal reserves, hydroelectric power or commercially viable oil deposits, Jordan relies on natural gas for 10% of its domestic energy needs. Jordan depends on Iraq for most of its oil.

Jordan's distance from other markets makes its exports less competitive outside the region, and political disputes among its traditional trading partners- Iraq, Saudi Arabia, and the other Gulf States - frequently restrict regional trade and development. Therefore, King Abdullah has encouraged his government to liberalise the economy, improve economic ties in the region, and seek opportunities in the global information economy.

Since 1987, Jordan has struggled with a substantial debt burden, lower per capita income, and rising unemployment. In 1989, efforts to increase revenues by raising prices of certain commodities and utilities triggered a riot in the south. The mood of political discontent swept the country in the



wake of the riots helped set the stage for Jordan's moves toward democratisation.

Jordan's main economic problem is the lack of capital. Therefore, the government's 1986 decision to loosen restrictions on capital movement was a step in the right direction, for many restrictions on the movement of capital along with the overvalued Dinar hampered foreign investment. The removal of capital restrictions in 1986 and the Dinar devaluation in 1988/1989 have helped to open the door to foreign investors who can take advantage of the skilled Jordanian labor force and the existing infrastructure. In return, foreign investors can improve the Jordanian economic base by creating new industries and by reducing unemployment, which unfortunately was hurt by the Gulf crisis in 1990/1991.

Jordan suffered adverse economic consequences from the 1990/1991 Gulf crisis. While tourist trade plummeted, the Gulf States' decision to limit economic ties with Jordan deprived it of worker remittances, traditional export markets, a secure supply of oil, and substantial foreign aid revenues. UN sanctions against Iraq-Jordan's largest pre-war trading partner - caused further hardships, including higher shipping costs due to inspections of cargo shipments entering the Gulf of Aqaba. Finally, absorbing up to 300,000 returnees from the Gulf countries accelerated unemployment and strained the government's ability to provide essential services.

Since 1995, economic growth has been low. Real GDP has grown at only 1.5% annually; while the official unemployment has hovered at 14% (unofficial estimates are double this number). The budget deficit and public debt have remained high, yet during this period inflation has remained low, and exports of manufactured goods have risen at an annual rate of 9%. Monetary stability has been reinforced, even when tensions were renewed in the region during 1998 and during the illness and ultimate death of King Hussein in 1999 (U.S. Department of Estate 2002).



Expectations of increased trade and tourism because of Jordan's peace treaty with Israel have been disappointing. Security-related restrictions to trade with the West Bank and Gaza have led to a substantial decline in Jordan's exports there. Following his ascension, King Abdullah improved relations with Arab Gulf states and Syria, but this brought few economic benefits. Most recently, the Jordanians have focused on World Trading Organisation (WTO) membership and Free Trading Agreement with the U.S. as means to encourage export-led growth.

In the following sub sections, however, macroeconomic indicators and other development measures will be explored in more detail taking into account the movements for each over the years after classifying the period under consideration.

Most of the Jordanian economists divided the economic development of Jordan into five phases: 1948-1961; 1962-1966; 1967-1972; 1973-1985<sup>2</sup> and finally 1986 until the present time (2000). For our purposes, a more suitable classification is to examine the 1950-1967 period to serve as background for our much more detailed examination of the period 1968-1985 and the period 1986 until recent year (2000). Within the period 1986-2000, the possible impact of IAS adopted in 1998 will be investigated by looking at the changes in macroeconomic indicators and Investment factors after the adoption date of IAS.

#### **2.4.1 The 1950 - 1967 Period**

Political and historical events joined hands with the paucity of resources to make Jordan dependent on more and more foreign resources ever since this state came into existence, which have formed the bulk of foreign resource inflow.

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<sup>2</sup> This period often further is split into three sub periods; the 1973 - 1975 (the three years development plan), 1976-1980 (the five years development plan) and the 1981-1985 (the second five years plan for economic and social development).

Due to the involved political hazards, the alarm over the dependence of the government on foreign transfers has been being expressed since the early days of the state. Dispensing with these transfers has been consistently pronounced and ranked highly among the objectives of economic policy.

In their book, Chenery and Syrquin (1975) studied the experience of a hundred and one countries over the 1950-1970 period. According to the Chenery-Syrquin Classification, Jordan was among the small-industry oriented countries.

Exploring the available data for Jordan economy, one can notice the facts that during the period 1950-1967 Jordan experienced low gross saving and investment and also low government revenue 'see Table 2.2'.

It is argued that during that period the private and government consumption as a percent of GDP were high reinforces the idea that there was no severe monetary policy to restrict consumption, and taxes were imposed for government revenue and not as a policy to restrict consumption or increase saving (Chenery and Syrquin 1975, P.45).

It has been reported that during the period 1954-1967 GDP at current prices grew by 6.9 annually. At the same time, inflation averaged around 2 percent annually and Real Per capita income increased by 4.4 percent during the same period. Agricultural income grew by 3.6% annually and industrial income grew by 14.2%. At the same time, income from services grew by 9.1% annually (Mustafa 1977; NPC 1975).

**Table 2.2: Major Indicators of Growth and Economic Development in Jordan 1954 – 1967**

	1954 – 1961 period	1962 – 1967 period	1954 - 1967 period*
Production and income annual growth rate (%):			
- GDP (current factor cost)	11	8	6.9
- Real Per capita GDP	7	3	4.4
- Agricultural income	2	6	3.6
- Industrial income	13	15	14.2
- Services income	12	5	9.1
Relative share of main sectors in GDP (%):			
- Agriculture	22	21	21.5
- Industry	13	16	14.5
- Services	65	63	64
Balance of payments variables as a % of GDP:			
- Import	45	41	43
- Export	6	6	6
- Trade deficit	39	35	37
Foreign trade:			
- Import growth rate (%)	11	10	10.5
- Export growth rate (%)	8	14	11
- Distribution of imports by economic function (%)			
1. Consumer goods	71	63	67
2. Intermediate goods and raw materials	18	29	23.5
3. Capital goods	11	8	9.5
Public finance:			
- Domestic revenues / Total revenues (%)	43	53	48
- External revenues / Total revenues (%)	57	47	52
- Direct taxes / total revenues (%)	5	6	5.5

\* Calculating the average from the other two columns has developed this column.

Researcher calculations

Source: Adopted from National Planning Council (NPC), Five Year Plan for economic and social development (1976 – 1980), PP. 13-25.



The above table shows the following facts regarding Jordan economy:

1. Jordan's economy was at its first stages of development, i.e., Jordan's industries were in the stages of establishment, even though, the manufactured production increased at an average rate of 16% per year over the period 1962-1967 (NPC 1975, P.10). Moreover, major conclusion that emerges from our discussion of Jordan's economic development so far is the dominance of the services sector.
2. Total exports, as a percent of GDP was lower than the imports showing a deficit in trading balance over the period 1954-1967 highlighting the facts that since the establishment of the country there was always a need for help from the outside world (regional or international) to support the country economy budget beside the support from Jordanian workers' remittances abroad especially in the Gulf states.
3. Jordan suffered from scarce of materials, heavy reliance on raw materials, and falling down of capital goods over the period 1954-1967 beside the fact that Jordan is a consuming and not a producing country emphasise the disparate need for foreign investment.

National Planning Council (NPC) reported that fixed capital formation growth increased by 11.1% and constituted 14.7% of GDP at current prices. Government investment constituted the bulk of investment and the government invested in several infrastructure projects. Indeed, the construction sector was the main engine of growth during the 1954-1967 period. Those projects financed by foreign borrowing and aid. Consumption during the same period grew by 14.7% annually from JD 53.1 million to JD 188.8 million and constituted 111.5% of the GDP (NPC 1975).

In conclusion, it can be said that over the period 1954-1967 there were an impressive valid economic growth attained prior to June 1967 Arab Israeli war when that growth dropped substantially as will be explored in the following section.

#### **2.4.2 The 1968-1985 Period**

Growth rates during the period 1968-1972 dropped substantially as a result of the Arab - Israel War in 1967 and the civil war in 1970. Although GDP at market prices and GDP per capita steadily increased over this period except for the year 1970 as it is shown in Table 2.3, however, the increase in real terms was almost nil. Consequently, real per capita income declined by the rate of natural increase in population 5.2% 'see Table 2.3'. These consequences were results of losing Jordan the contributions of the West Bank in GDP, estimated to have been 35 to 40 percent, as a result of the Arab-Israeli war in 1967 beside the instability inside the country because of the civil war. As it is presented in Table 2.3, after the year 1972, available data shows that GDP at market price, for the East Bank rose from JD 281 million in 1972 to JD 435.9 million in 1975 making the growth rate averaged 13% per annum. GDP were steadily increasing over the period 1976-1985 when it reached JD 2020.2 million at the end of the period.

Table 2.3: Main Macroeconomic Indicators – JD 1968-1985

Year	GDP at market prices (Million)	Export (Million)	Import (Million)	Trade Balance (Million)	GDP Per Capita	Saving* (Million)	Investment (Million)**	Inflation Rate%	Exchange Rate% (JD/\$)	Jordanian Workers’ Remittances	Remittances as a % of GNP
1968	200.4	14.2	57.5	-43.3	163	N.A	N.A	-	2.82	4.1	2.5
1969	249.6	14.8	67.7	-52.9	185	N.A	N.A	6.9	2.82	6.9	3.5
1970	228.4	12.2	65.9	-53.7	151	N.A	N.A	6.9	2.82	5.5	2.94
1971	242.2	11.4	76.6	-65.2	158	N.A	N.A	4.7	2.82	5.0	2.51
1972	281.6	17.0	95.3	-78.3	182	N.A	N.A	5.7	2.80	7.4	3.3
1973	310.1	19.0	108.3	-89.3	197	N.A	N.A	11.2	3.06	14.7	6.1
1974	385.7	49.8	156.6	-106.8	227	N.A	N.A	19.4	3.11	24.1	8.63
1975	435.9	48.9	234.0	-185.1	241	N.A	N.A	12.1	3.137	53.3	13.84
1976	547.4	69.4	339.9	-270.1	290	92.9	59.5	11.5	3.02	129.6	22.7
1977	676.4	82.1	454.5	-372.4	343	166.9	61.2	14.5	3.05	154.8	23.1
1978	779.3	90.9	458.9	-368	379	108.6	62.0	7.0	3.28	159.4	20.1
1979	981.0	120.9	585.7	-464.8	460	191.4	65.3	14.1	3.34	180.4	19.3
1980	1180.3	171.6	716.0	-544.4	529	300.4	80.7	11.1	3.34	236.7	19.9



Table 2.3: Main Macroeconomic Indicators – JD 1968-1985

Year	GDP at market prices (Million)	Export (Million)	Import (Million)	Trade Balance (Million)	GDP Per Capita	Saving* (Million)	Investment (Million)**	Inflation Rate%	Exchange Rate% (JD/\$)	Jordanian Workers' Remittances	Remittances as a % of GNP
1981	1469.3	242.6	1047.5	-804.9	634	421.4	91.7	7.7	3.04	341.0	23.0
1982	1701.1	264.5	1142.5	-878	706	284.0	181.3	7.4	2.84	381.9	22.8
1983	1828.7	210.6	1103.3	-892.7	731	229.8	232.6	5.0	2.76	402.9	22.8
1984	1981.4	290.7	1071.3	-780.6	762	187.1	244.1	3.9	2.61	475.0	25.8
1985	2020.2	310.9	1074.5	-763.6	748	47.5	236.6	3.0	2.54	402.9	21.71

\* Saving: The difference between current receipts and the current disbursements; the balancing item on the income and outlay accounts.

\*\* Investment: consumption of fixed capital + change in stocks.

Source: Central bank of Jordan, Yearly and Monthly Statistical Series (1964-2000), Department of Research and Studies, Amman, Jordan.  
Department of Statistics, Different Issues, Amman, Jordan

That steady increment was mainly ascribed to a host of factors, especially the high levels of remittances from Jordanian workers, which increased from JD 7.4 million in 1972 to JD 402.9 million in 1985 and also the export level which increased from JD 17 million in 1972 to JD 310.9 million in 1985 after the fluctuation during the period 1968-1971 as a consequence of the civil war<sup>3</sup>. The inflation rate, moreover, increased from 6.9% in 1969 to 19.4% in 1974 reaching its peak, while it decreased continuously after 1974, except for the years 1977, 1979 and 1980, to reach its lowest level 3% in 1985 'see Table 2.3'. Number of exogenous and endogenous factors like the stability in import prices, the drop in the rate of expansion of domestic liquidity in 1982, 1983, 1984 and 1985, and the lower growth of demand in 1984 and 1985 were regarded as the main factors behind the decline in the inflation rate (Central Bank of Jordan, Annual Report, Different Issues). The main factors behind the high level of inflation experienced during the period 1973-1977, 1979 and 1980, on the other hand, were traced to the low elasticity of domestic supply, the increase in purchasing power (the exchange rate % JD/\$ were high during this period – 'see Table 2.3'), thanks to the significant increase in Jordanian worker's remittances which started from 3.3 as a % of GNP in 1972, 23.1 in 1977, 25.8 in 1984 to 21.71 in 1985 (the end of the period concerned), and the high levels of import prices (CBJ, Annual Report, Different Issues).

Abdulhak (1979, PP.192-193) reported that gross domestic savings were negative during the period 1968-1985 growing negatively from JD-27.5 million in 1968 to JD-205.2 in 1985. The main reasons that contributed to increasing government and private consumption and decreasing gross domestic savings (or making it negative) were the political unsuitability in the region generally, and in the Kingdom specifically and the liberal imports policy, which encouraged consumption and discouraged savings.

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<sup>3</sup> During the civil war 1970-1971 the development efforts disturbed and added more burden on Jordan's economy mainly because of not only the cut off aid by Arab states like Kuwait and Libya to the Jordanian government but also the cut off the trading with Jordan which reflected on decreasing levels of export 'see Table 2.4' as a result of Jordan's actions against the Fedayeen.

By investigating the structure of production presented in Table 2.4, it can be seen that agricultural output as a percent of GDP (at market prices) fluctuated between 10.6% and 7.9% during the period 1968-1980. such an output, however, where continuously decreasing over the period 1981-1985 and reache its lowest in 1985 by being only 5.5%. The industrial output (Construction, Manufacturing and Mining and Quarrying), however, as percent of GDP increased in continues manner from 22.8% in 1968 to 28.1% in 1984.



Table 2.4: Sectors Participation of GDP - percentages\* 1968 – 1985

Year	GDP at market prices (Million JD)	Agriculture	Mining and Quarrying	Manufa-cturing	Electricity and Water	Construc-tion	Trade, Restaurants and Hotels	Transport, Storage and communica-tions	Finance, Insurance, Real estate and Business Services	Producers of Government Services	Other Services
1968	200.4	10.6	1.3	14	0.8	7.5	13.2	9.4	20.9	20.4	1.9
1969	249.6	13.6	1.1	13.1	0.7	5.5	12.9	8.6	24.4	18.7	1.4
1970	228.4	11.6	1.8	11.3	0.9	5	12.2	8.1	28.1	19	2
1971	242.2	13.3	1.1	11.3	1	4.3	12.6	8.6	27.6	17.9	2.3
1972	281.6	13.3	1.3	11	1	6.6	12.8	8.9	26.1	16.7	2.3
1973	310.1	8.8	1.4	12.6	1	9.2	13	9	25.4	17.3	2.3
1974	385.7	16.5	3.2	7.7	0.9	6.2	12.3	9.6	22.6	18.8	2.2
1975	435.9	7.9	4.4	8.9	0.8	9.5	12.5	11.2	22.2	20.3	2.3
1976	547.4	8.8	3.7	9.9	0.8	9.2	13.5	12.2	17.2	23.5	1.2
1977	676.4	9.1	3.4	10.8	0.7	9.5	14.6	12.9	16.8	20.1	2.1
1978	779.3	11.3	2.9	10.2	1.1	9.8	13.3	13	17	19.5	1.9

Table 2.4: Sectors Participation of GDP - percentages\* 1968 – 1985

Year	GDP at market prices (Million JD)	Agriculture	Mining and Quarrying	Manufa-cturing	Electricity and Water	Construc-tion	Trade, Restaurants and Hotels	Transport, Storage and communica-tions	Finance, Insurance, Real estate and Business Services	Producers of Government Services	Other Services
1979	981.0	7	3.1	13.5	1.2	9.9	13.1	12	18.7	19.5	2
1980	1180.3	7.9	3.8	12.7	1.6	9.9	14.2	12.1	17.8	17.7	2.3
1981	1469.3	6.1	3.3	14.5	1.8	10.2	16.4	13	15.4	17.2	2.1
1982	1701.1	6.1	3	13.9	1.9	11.4	16.6	13.4	15.3	16.7	1.7
1983	1828.7	6.8	2.7	12.7	1.4	11.6	16	14.2	16.1	17.1	1.4
1984	1981.4	5.5	3.6	14	1.8	10.5	16.3	13.1	16.9	17	1.3
1985	2020.2	5.5	3.7	11.5	2.2	8.3	16.2	14.9	17.6	17.4	2.7

\* According to the Department of Statistics and Central Bank of Jordan classifications.

Source: Central bank of Jordan, Yearly and Monthly Statistical Series (1964-2000), Department of Research and Studies, Amman, Jordan.

The industrial sector increased as a percent of GDP was mainly attributable to the expansion of phosphate production from 1.6 million tons in 1968 to 5.9 million tons in 1985. Another contributing factor to that increase was the growth in other activities like potash cement as a direct result of Jordan's industry-oriented policies (CBJ, Annual Report, and Different Issues). Table 2.5 shows the increase in the principal industries for Jordan.

**Table 2.5: Industrial Production of Principal Industries (In Thousand Tons) 1968 – 2000**

Year	Phosphate	Cement	Potash	Fertilizer	Chemical Acids
1968	1590.9	357.6	0.0	0.0	0.0
1969	1078.3	480.4	0.0	0.0	0.0
1970	938.9	377.6	0.0	0.0	0.0
1971	640.0	418.9	0.0	0.0	0.0
1972	709.0	661.3	0.0	0.0	0.0
1973	1080.9	616.8	0.0	0.0	0.0
1974	1674.8	614.7	0.0	0.0	0.0
1975	1352.5	598.2	0.0	0.0	0.0
1976	1701.8	582.4	0.0	0.0	0.0
1977	1771.1	587.6	0.0	0.0	0.0
1978	2302.7	553.0	0.0	0.0	0.0
1979	2845.5	623.2	0.0	0.0	0.0
1980	3906.8	912.7	0.0	0.0	0.0
1981	4243.7	964.7	0.0	0.0	0.0
1982	4390.7	788.4	15.1	116.4	0.0
1983	4748.5	1269.0	282.8	301.6	632.5
1984	6262.0	2026.3	486.9	541.0	1194.6
1985	5918.8	2022.9	908.6	510.5	1007.6
1986	6249.2	551.1	1103.7	551.1	1024.8
1987	6801.0	604.0	1203.4	604.0	1103.2
1988	5668.2	615.8	1309.6	615.8	1157.0



**Table 2.5: Industrial Production of Principal Industries (In Thousand Tons) 1968 – 2000**

Year	Phosphate	Cement	Potash	Fertilizer	Chemical Acids
1989	6928.7	602.7	1320.4	602.7	1169.5
1990	6082.2	595.8	1402.7	595.8	1135.5
1991	4934.4	602.1	1364.1	602.1	1299.7
1992	5270.8	553.6	1346.0	553.6	1110.3
1993	4282.6	469.9	1370.1	469.9	848.8
1994	4216.5	749.7	1550.3	749.7	1381.5
1995	4983.9	729.3	1780.0	729.3	1337.5
1996	5355.1	3512.2	1765.5	670.7	1262.3
1997	5895.6	3250.5	1415.6	711.2	1369.1
1998	5924.6	2650.3	1526.9	849.6	1712.2
1999	6013.6	2687.0	1800.2	813.5	1688.6
2000	5506.1	2639.9	1936.3	619.5	1684.0

Source: Central Bank of Jordan. Yearly Statistical Series (1968 – 2000),  
Department of Research and Studies, Amman, Jordan.

The increase in the share of industry sector in GDP, however, was accompanied by a slight fall in the share of service sector (Trade, Restaurants and Hotels; Transport, Storage and Communications; Finance, Insurance, Real Estate and Business Services; Producers of Government Services; and Other Services), which decreased from 66.6% in 1968 to 66.5% in 1985 keeping the structure of the economy is dominated by service-related activities ‘see Table 2.4’. It has to be remembered, however, that these limited principal industries are finite resources which emphasise the fact that attracting foreign investments to invest in different sectors is an important issue for developing the economy as improving these industries to increase its participation as a percent of GDP, which basically highlight the need for adopting the IAS in a country like Jordan.

To confirm the fact that Jordanian economy is not fully independent and it is relying heavily on foreign national and international aid as a consequence of the

huge trade deficit, Table 2.6 shows structure of trade over the period 1968-1985. As it is presented in the table, the total imports as a percent of GDP increased significantly from 28.7 in 1968 to 53.2% in 1985 which can be explained by a host of factors like the demonstration effect on consumption goods imports and the lack of a restrictive trade policy (Kandah 1987, P.25). The total export as a percent of GDP increased slightly from 7.09 in 1968 to 15.39 in 1985 where the total import as a percent of GDP increased dramatically from 28.7 in 1968 to 53.2 in 1985, however, made the balance between both sides of the trade structure unacceptable.

**Table 2.6: Structure of Trade 1968 – 1985**

<b>Year</b>	<b>GDP at Market Prices (In Million JD)</b>	<b>Export as a % of GDP</b>	<b>Import as a % of GDP</b>
1968	200.4	7.09	28.7
1969	249.6	5.93	27.1
1970	228.4	5.35	28.9
1971	242.2	4.71	31.6
1972	281.6	6.04	33.8
1973	310.1	6.13	34.9
1974	385.7	12.91	40.9
1975	435.9	11.22	53.7
1976	547.4	12.68	62.1
1977	676.4	12.14	67.2
1978	779.3	11.66	58.9
1979	981.0	12.32	59.7
1980	1180.3	14.54	60.7
1981	1469.3	16.51	71.3
1982	1701.1	15.55	67.2
1983	1828.7	11.52	60.3
1984	1981.4	18.67	54.1
1985	2020.2	15.39	53.2

Source: Central Bank of Jordan. Yearly and Monthly Statistical Series



**Table 2.6: Structure of Trade 1968 – 1985**

<b>Year</b>	<b>GDP at Market Prices (In Million JD)</b>	<b>Export as a % of GDP</b>	<b>Import as a % of GDP</b>
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(1968 – 1985), Department of Research and Studies, Amman, Jordan.

Department of Statistics (DOS), Different Issues, Amman, Jordan.

As it is shown in Table 2.6, it could be argued that Jordan can be considered as a poor and small developing country which means heavy reliance on imports and as a consequence a high degree of reliance on foreign aid in the forms of grant and loans. Table 2.7 shows the foreign aid over the years 1968-1983.

**Table 2.7: Foreign Loans and Grants 1925 – 1983**

<b>Year</b>	<b>Foreign Loans and Grants (Million JD)</b>
1925	-
1934	0.6204
1944	15.4536
1956	85.8126
1959	155.6358
1963	140.0694
1966	189.504
1968	385.212
1971	358.422
1974	713.434
1977	1675.365
1980	3152.292
1983	2078.28

Source: Konikoff, A., Transjordan: an economic survey, Jerusalem, 1946, P.95.

Ministry of Planning, Amman, Jordan.

As it can be seen from Table 2.7 foreign support has been a basic characteristic of the Jordanian economy since the early days of the establishment of the country. It



is worth to mention, moreover, that Jordan has been receiving such a foreign aid mainly because of political and social developments in the Middle East. Such aids could be considered as a significant resource for funding the trade imbalance presented earlier in Table 2.3. The establishment of Israel in 1948 and the June 1967 war, however, both resulted in two influxes of Palestinian refugees, which amounted to 350,000 and 224,000 respectively. Through the willingness of some donors to help Jordan provide the basic needs of refugees on one hand and on the other had to defend itself in an area that witnessed four major wars in less than three decades, Jordan has been receiving relatively large amounts of foreign aid.

### **2.4.3 The 1986-2000 Period**

In the second half of 1980s, as the region entered into a recession due to the fall in oil prices, decline in worker's remittances and foreign aid, Jordan faced a severe drop in GDP growth rate below the rate of population growth as it is presented in Table 2.8 below. This led to a drop in the standard of living and worsened the unemployment problem. The economic problems critically deepen to the first half of the 1990s as a result of the Gulf war in 1990/1991 because of the occupation of Kuwait by Iraq which caused remarkable economic difficulties for the country since Jordanian economy as discussed earlier relying heavily on Iraq and those Gulf Estates. Hundreds of thousands of Jordanian and Palestinian workers who left Kuwait and other Gulf Estates as a result of the occupation for political reasons which put significant pressure on the public services in the country and rising up the trade imbalance, unemployment rate and population growth to reach its peaks 'see Table 2.8'.

Table 2.8: Main Macroeconomic Indicators (JD Million) 1986 – 1995

Year	GDP at Constant Prices- 1985	GDP Growth Rate % at Constant Prices	Export	Export Growth Rate %	Import	Import Growth Rate %	Trade Balance	Outstanding Foreign Debt	Outstanding Foreign Debt to GDP (%)	Inflation Rate %
1986	2163.6	2.6	256	0.4	850.2	-20.9	-594.2	1167	53.9	0.0
1987	2208.6	2.0	315.7	23	9155	7.7	-599.8	1216	55.1	-0.2
1988	2264	2.4	381.3	21	1021.7	11.6	-640.4	3836.1	169.4	6.6
1989	2372	2.5	637.6	67	1223	19.7	-585	5409.4	228.1	25.6
1990	2668	4.12	706.1	11.6	1714.8	39.4	-1008.7	5064.2	189.9	16.2
1991	2855.1	1.8	770.7	9.1	1764.8	2.9	-994.1	4958.6	173.7	8.2
1992	3493	16.1	829.3	7.6	2291	29.8	-1467.1	4577.6	131.1	4.0
1993	3811.4	5.9	864.7	4.2	2449.9	6.7	-1580.2	4229.6	108.1	3.3
1994	4190.6	5.0	995.2	15.1	2357.6	-3.6	-1362.4	3914.8	91.8	3.5
1995	4620.8	6.4	1241.1	24.7	2588.2	9.8	-1347.1	4465.9	97.9	2.4

Table 2.8: Main Macroeconomic Indicators (JD Million) 1986 – 1995

Year	Jordanian Workers’ Remittances	Government Public Expenditure	GDP Per Capita	Gross Domestic Saving	Investment	Unemployment Rate %	Population Growth Rate %	Exchange Rate \$/JD Average of Period (Fills)
1986	414.5	981.3	771.3	182.8	232.2	N.A	3.2	0.632
1987	3177	965.8	757.9	115.2	270.4	15.0	3.1	0.654
1988	336	1054.0	748.1	198.4	239.7	N.A	4.3	0.640
1989	358	1112.9	754.5	292.9	247.3	N.A	3.5	0.658
1990	331.8	1120.1	769.4	84.8	309.6	16.8	10.2	0.664
1991	306.3	1234.3	775.0	122.2	363.2	17.4	6.7	0.681
1992	373.1	1348.7	920.2	286.2	483.4	18.0	3.8	0.679
1993	720.7	1644.8	966.4	603.7	471.6	19.6	3.9	0.693
1994	763.7	1580.3	1026.1	752.6	450.4	15.8	3.7	0.699
1995	871.7	1697.5	1062.9	940.8	593.1	15.3	3.6	0.701

Source: Central Bank of Jordan, Yearly and Monthly Statistical Series (1986 – 1995), Department of Research and Studies, Amman Jordan.

Department of Statistics (DOS), Different Issues, Amman, Jordan.



Although the foreign exchange earnings declined substantially, government kept on the level of public expenditures. This was financed by foreign borrowing on both commercial and professional basis, which led to accumulation of external debt burden higher than the ability of the economy to service that debt over the period 1988-1993 which was behind the 1988 crisis when Jordan suspended its debt service. Consequently the authorities initiated corrective macroeconomic policies including a large devaluation of Jordanian Dinar, as a result of that, inflation started to accelerate reaching its peak (25.6%) in 1989, 16.2 in 1990 and 8.2% in 1991 which could be considered as the highest inflation rates in Jordan economic history. To tackle the internal and external imbalance, the government adopted in 1989 an economic adjustment program supported by the International Monetary Fund (IMF) and the World Bank which resulted, in some initial progress, in major economic indicators 'see Table 2.8'.

During that period, therefore, per capita income decreased and unemployment augmented. These developments negatively affected the Jordanian economy performance, which let the government to adopt economic adjustment program (1992-1995) for achieving a significant reduction in macroeconomics imbalance, satisfactory growth performance in terms of GDP with an increased role for the private sector in the economy. It has to be noted, however, that the remarkable increase in GDP growth rate in 1992 was a reflection of the investment for the more than 300,000 of Jordanians working abroad in the Gulf countries who invest mostly in the construction sector causing that deceivable significant jump in the GDP growth rate. Looking at the remarkable decrease in the GDP growth rate for the years afterward, this fact can be recognized 'see Table 2.8'.

The performance of Jordan's economy under that program during the period 1992-1995 showed a significant improvement. With regard to GDP, it showed an average yearly growth rate 8.35 percent at market prices, inflation has declined to an average of 3.3 percent during the same period, deficit declined substantially, and the exchange rate of Jordan's Dinar maintained at its level 'see Table 2.8'.

For the period 1996 until 2000, which is an important period for this study to explore since the adoption of IAS was in September 1998, however, Table 2.9 shows the movement for the macroeconomic indicators over the years 1996-2000.

Table 2.9: Main Macroeconomic Indicators (JD Million) 1996 – 2000

Year	GDP at Constant Prices- 1990	GDP Growth Rate % Constant Market Prices	Export	Export Growth Rate %	Import	Import Growth Rate %	Trade Balance	Interest Rate % (Per Annum)	Outstanding Foreign Debt	Outstanding Foreign Debt to GDP (%)	Inflation Rate %
1996	4982.2	1.0	1288.2	3.7	3041.6	17.6	-1753.4	8.5	4722.8	94.8	6.5
1997	5192.4	3.1	1301.4	1.0	2906.9	-4.4	-1605.5	7.75	4580.6	88.2	3.0
1998	5642.9	2.2	1277.9	-1.8	2712.4	-6.7	-1434.5	9.0	5009.8	88.7	3.1
1999	5723.9	3.1	1298.8	1.6	2622.5	-3.3	-1323.7	8.0	5186.2	90.6	0.6
2000	5912.9	3.9	1345.3	3.6	3203.9	22.2	-1858.6	6.5	4794.7	81.1	0.7



Table 2.9: Main Macroeconomic Indicators (JD Million) 1996 – 2000

Year	Jordanian Workers' Remittances	GDP Per Capita	Government Public Expenditure	Gross Domestic Saving	Investment	Unemployment Rate %	Population Growth Rate %	Average Exchange Rate (JD/US\$)
1996	1094.8	1060.1	1799	823.1	569	12.1	3.4	0.709
1997	1173.5	1075.2	1775	780.9	558.4	14.4	3.6	0.709
1998	1093.8	1089.2	2055.1	638.2	N.A	10.3	3.5	0.709
1999	1179.8	1097.9	2007.1	N.A	N.A	15.6	2.9	0.709
2000	1308.2	N.A	2004.7	N.A	N.A	14.4	2.8	0.709

Researcher Calculations

Source: Central Bank of Jordan, Yearly and Monthly Statistical Series (1996 – 2000), Department of Research and Studies, Amman Jordan.  
Department of Statistics (DOS), Different Issues, Amman, Jordan.  
Ministry of Finance, A Monetary Government Bulletin, Different Issues.

The ongoing adjustment program had to be replaced by a new one covering the period 1992-1997. Generally speaking, the results were again positive 'see Table 2.9'. GDP growth decreased significantly from 6.4% in 1995 to only 1.8% in 1996, however, was mainly as a result of the recessionary policy followed by the Jordanian government by bringing down the government expenditure on the recommendation of the World Bank and the International Monetary Fund (IMF). GDP growth, however, was ranging between 1.8% and 3.9% over the period 1996-2000 at constant prices. Above these growth rates had been targeted in agreement with the IMF, but expectations had not been met since 1996 due to the setbacks in the peace process with Israel. There was feeling that time assumption the peace agreement will establish cooperative countries in the Middle East region for investments toward positively developing their economies and increasing the standards of living for their people, which indeed has not been achieved.

According to the above table, inflation has been volatile, ranging between 0.7% and 6.5% a year during the period 1996-2000. The current account balance as a percentage of GDP, however, has been steadily improving. In 1996 imports were mainly high intermediary and capital goods. The high growth in imports in 2000 is a reflection of the continuing high rate at which the industrial sector in particular is expanding.

Regarding the sector participation developments, investigating the structure of production presented in Table 2.10, it can be seen that agricultural output as a percent of GDP (at market prices) decreased from 6.3% in 1986 to only 3.2% in 1998 (the lowest in Jordan history).

Table 2.10: Sectoral Participation of GDP - percentages 1986 – 1995\*

Year	GDP at Constant Market Prices- 1986	Agriculture	Mining and Quarrying	Manufa- cturing	Electricity and Water	Construc- tion	Trade, Restaurants and Hotels	Transport, Storage and Communica- tions	Finance, Insurance, Real estate and Business Services	Producers of Government Services	Other Services
1986	2163.6	6.3	3.8	10.6	2.4	7.6	15	15.1	17.5	20.3	1.4
1987	2208.6	7.3	3.6	11.4	2.6	6.4	14.3	14.2	17.5	20.7	2
1988	2246	6.9	4.2	10.1	2.6	5.8	13.1	15.1	19.4	21.5	1.3
1989	2372	6.6	7.3	12.1	2.5	4.8	8.6	17	19.6	20.4	1.1
1990	2668	8.1	6.4	14.9	2.3	4.5	9.3	15.6	17.5	19.3	2.1
1991	2855.1	8.5	5	13.7	2.5	5	10.2	15.3	18.8	18.9	2.1
1992	3493	8.3	4.4	13	2.2	7.3	9.4	15.2	17.6	18.7	3.9
1993	3811.4	6	3.3	13.3	2.5	8.9	9.9	15.2	19.4	19.3	2.2
1994	4190.6	5.4	2.9	15.8	2.4	8.4	10.6	14.6	18.6	18.8	2.5
1995	4620.8	4.4	4.1	14.9	2.5	7.7	10.7	14.8	18.6	19.6	2.7
1996	4982.2	4	4.1	13.1	2.6	6.3	11.7	15.7	18.8	20.6	3.1



Table 2.10: Sectoral Participation of GDP - percentages 1986 – 1995\*

Year	GDP at Constant Market Prices- 1986	Agriculture	Mining and Quarrying	Manufa- cturing	Electricity and Water	Construc- tion	Trade, Restaurants and Hotels	Transport, Storage and Communica- tions	Finance, Insurance, Real estate and Business Services	Producers of Government Services	Other Services
1997	5192.4	3.5	4	14	2.8	5.3	12.2	15.6	18.4	21.1	3.1
1998	5642.9	3.2	3.9	13.8	2.7	4.4	12.5	16	18.8	21.4	3.3

\* According to the Department of Statistics and Central Bank of Jordan classifications.

Source: Central bank of Jordan, Yearly and Monthly Statistical Series (1964-2000), Department of Research and Studies, Amman, Jordan.  
Department of Statistics, Different Issues, Amman, Jordan.

The industrial output (Construction, Manufacturing and Mining and Quarrying), however, as percent of GDP fluctuated ranging between 19.1% to 29.5% as a consequence of the fluctuation in the main resources produced by the country presented in Table 2.5 over the same period leaving the service sector leading in terms of percent of GDP as it is shown in the above table.

In summary, it can be argued that adopting IAS in Jordan starting from September 1998 has not shown any significant changes in terms of macroeconomic indicators. It was expected to see considerable decrease in trade imbalance, unemployment rate and outstanding foreign debt to GDP as a percent. On the other hand, it was expected to see jump up in other macroeconomic indicators such as GDP and GDP per capita. These result, however, is not surprising to some extent for two reasons: first, the adoption of IAS started only two years ago (September 1998) which could be considered as not that long time to influence significantly macroeconomic indicators in Jordan as a consequence of creating more stable and less risky environment attracting foreign investment. Secondly, the Middle East region is one of the instable environments in the world suffering from continuous conflict between Palestinian and Israelis, almost half of the population in Jordan are originally from Palestine and also the block aid on Iraq since the Gulf war in 1990/1991 has created extremely difficult economic situation to overcome for a country like Jordan has not that much natural resources and relying economically heavily on its neighbors such as Iraq who is one of the biggest trade partner for the country<sup>4</sup>. But, not being able to see that macroeconomic indicators have been change significantly as a result of adopting the IAS might not be the case when it comes to test other factors determined as the objectives of this study such as extent of disclosure, systematic risk, unsystematic

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<sup>4</sup> It has been argued by the well-known economic writer Fahid Al-Fanik in Al-Ra'i Daily Jordanian Newspaper on 29.10.2002 that any another possible war against Iraq, as it has been encouraged badly nowadays by the USA, will create a 25% estimated loss of Jordanian GDP. This estimation showing how much the Jordanian economy is still heavily linked and influenced by the economical and political situation in Iraq.



risk, risk premium, cost of equity capital and share price volatility which will be explored in Chapter six and Seven.

## **2.5 Economic Strategy, Policies and Globalisation**

At the turn of the decade, following the near collapse of its economy, Jordan was forced to re-examine its policies and to redirect its development strategies. The country was struggling with economic and financial crisis and traditional remedies were proving to be ineffective. Jordan, therefore, stood at a critical crossroad. In response, the country chose to accelerate the liberalisation of its economy, and actively worked at enhancing its competitiveness within the regional and global context. In pursuit of this goal, Jordan removed, largely, the structural imbalances of the economy. Remarkable progress was achieved toward opening the economy through regional and global free trade, harmonising legislation to facilitate the free flow of capital, stabilising the monetary indicators to reassure investors, and creating attractive conditions for investment and business opportunities.

In the belief that an efficient regulatory framework stimulates the role of the private sector, Jordan has recognised the need to establish business-friendly structures with strong emphasis on supporting entrepreneurial initiative for creating sustainable economic growth. With the establishment of the Investment Promotion Law No.16 of 1995, and with other subsequent actions designed to enhance the investment environment, Jordan has opened its economy to the wealth and prosperity business and investment should bring. The Investment Promotion Law grants generous and attractive incentives to domestic as well as international investors in terms of: freedom from customs duties, tax holidays, income tax exemptions and unrestricted transfer of capital and profits. The implementation of this law is vested in the Jordan Investment Board (JIB), which is the only national entity responsible for promoting and facilitating investment in Jordan. The law irrevocably affirms that both Jordanian and non-Jordanian investors are treated equally. The JIB is responsible for marketing Jordan internationally, creating linkages between national and foreign companies through joint ventures, assisting investors at all stages of the investment cycle, and acting as a contact or liaison between investors and other government bodies whose services are needed by the



investor. The most salient features of the Investment Promotion Law No.16 of 1995 and its amendments for the year 2000, however, are:

1. The law affords incentives to the sectors Industry, Agriculture, Hotels, Hospitals, and Maritime Transport and Railways.
2. The Kingdom, by virtue of Regulations for Investment Sectors and Zones No.2 of 1996, is divided into three zones: A, B and C, depending on the degree of economic development. Locating a project in each such zone grants special incentives.
3. Projects enjoy a ten-year exemption from income and social services taxes at the following rates depending on the area in which the project is located:
  - a. Projects in zone A 25%
  - b. Projects in zone B 50%
  - c. Projects in zone C 75%
4. Where a project is expanded, improved or modernised so as to increase the production capacity it shall receive an additional year for every increase of production which is not less than 25% for a maximum of four years.
5. All projects encompassed by the law enjoy the following exemptions from taxes and fees:
  - a. Fixed assets required for the project are exempted from taxes and fees.
  - b. Fixed assets needed for expanding, modernising, or developing projects are exempted from taxes and fees if this results in an increase of a minimum of 25% of the production capacity.
  - c. Spare parts imported for the project are exempted from taxes and fees provided that their value does not exceed 15% of the total value of the fixed assets utilising these spares.
6. The Investment Law irrevocably affirms that non-Jordanian investors shall be afforded equal treatment as Jordanian Investors. Non-Jordanian investors may acquire all or any part of any "economic activity" in the Kingdom. However, they may not own more than 50% of any project in the following sectors: Construction and contracting, Land and air transport, Trading and trade services, Banking and insurance, Telecommunications, Metallurgy and Agricultural products.

7. Minimum amount of non-Jordanian investment in any project is set at JD 100,000, which has to be transferred into the Kingdom in a convertible currency prior to the completion of the ownership registration (Conversion rate JD 1 = US\$ 0.7).
8. Investment in the Amman Financial Market was regulated in the Investment Law separately. Non-Jordanian investors may purchase securities listed on the Amman Financial Market in Jordanian currency provided that it has been converted from a convertible foreign currency. The non-Jordanian ownership in a public shareholding company may not exceed 50%, unless the percentage of the non-Jordanian ownership ratio was more than 50% at the time of closing of subscription to the shares of the public shareholding company, in which case the maximum limit for non-Jordanian ownership shall be fixed at that percentage. The minimum amount that may be invested by a non-Jordanian in the Amman Financial Market is set at JD 1,000 (Conversion rate JD 1 = US\$ 0.7).

The Investment Promotion Law no.16 of 1995 as it is amended in 2000 established a council named “The Higher Council for Investment Promotion”. The council chaired by the Prime Minister, and with the membership of: Minister of Industry & Trade (Deputy Chairman), Minister of Finance, Minister of Planning, Minister of Tourism, Minister of Transport, Governor of the Central Bank, Director General (Reporter), Chairman of the Union of Jordanian Chambers of Commerce, Chairman of Amman Chamber of Industry, Three competent and experienced persons from the private sector appointed by the Chairman for two renewable years. The main objectives of the Council as it is stated by the Law are that to create a suitable environment for investment in order to achieve the comprehensive development goals, and for that the Council has the authority to assume the following responsibilities:

1. Approving National Strategy for Investment including the development of production sectors, developing and following-up its implementation.
2. Approving the investment policies.
3. Approving the Investment Promotion Policy, and following-up its implementation.
4. Reviewing the investment regulations.



Finally, According to the provisions of this law, a corporation named “The Jordan Investment Board (JIB)” has been established which enjoys a legal personality with financial and administrative independence. The aim of JIB is promoting investment in the Kingdom, by carrying out the following:

1. Enhancing confidence in the investment environment, identifying investment opportunities, promoting these opportunities and motivating investment therein.
2. Simplifying the registration and licensing procedures of investment projects, following up existing Projects, and giving them priority in finalisation of applications at official authorities.
3. Establishing an investment window at the JIB, which shall undertake licensing investment projects and obtaining approvals on such projects from other authorities pursuant to the legislation in force.
4. Giving advice, providing available information and data for investors and issuing related guides.
5. Setting and implementing investment promotion programs to attract investors to the Kingdom.

As a result of this effort, it can be concluded that much progress has been made since 1995, and Jordan finds itself today among the more attractive investment sites in the Middle East. A recent study by the Stanford Research International (SRI) which was previously named as Stanford Research Institute, for example, stated that,

*“Jordan’s overall score in the commercial policy matrix is 77%, the highest in the Region, which represents an attractive and ‘Business Friendly’ policy environment.”*

Jordan continues to surpass its neighbors in rankings by other international authorities as well. A recent study carried out by the Heritage Foundation, published in the Wall Street Journal, places Jordan ahead of its keen competitors, Egypt and Israel, in its ‘Index of Economic Freedom.’ The World Economic Forum Global Competitiveness Report 1999 ranks Jordan first in the region ahead of Israel and Egypt in economic growth projections 2000-2008 and second in the region in terms of competitiveness. It was reported; moreover, by Suha Ma'ayeh



on 7<sup>th</sup> January 2001 in Jordan Times Newspaper that Investment Promotion Law attracted investments was amounting. Total investments in projects that enjoyed a special package of exemptions and incentives last year from the Investment Promotion Law amounted to JD800 million, up from JD584 million in 1999, according to a speech for Jordan Investment Board (JIB) director general Reem Badran. Speaking at a luncheon organised by the Jordanian-Scandinavia Business Club, Badran said that the JIB strategy for this year would give priority to investment projects in the field of pharmaceuticals, information technology and tourism for European countries. The director said that enforcing intellectual property rights legislation as Jordan joined the World Trade Organisation and signing the Free Trade Agreement with the US last year are an attraction for potential investors. Moreover, promoting investments in textiles will target the US and the Far East. She added, through the country's five designated Qualified industrial Zones (QIZs), goods enjoy duty and quota free access to the US market, after meeting certain criteria.

As a consequence of structural and legislative adjustments, the economy grew in real terms by an average of 4.7 percent since 1990. Inflation was checked to around 3 percent and the exchange rate of the Jordanian Dinar remained stable. However, the Jordanian economy took a sharp downward turn toward the end of the 1990s. Recession conditions beside population growth high rate especially in 1990 and 1991 'see Table 2.1' caused low level of per capita income. Unemployment grew to unprecedented levels, poverty became deeper and more widespread, and the inequality of wealth broadened substantially 'see Tables 2.7 and 2.8'.

It can be seen nowadays that regional tensions continued to slow down the rate of economic growth. The tension comes from various reasons; the sanctions on Iraq, the setback in the peace process, and the fluctuating of oil prices. This situation has significantly influenced Jordan toward devising new appropriate economic strategy and policies that are able to overcome regional circumstances, or work within them, and look for inner circumstances that will lead to sustainable economic growth. It is worth mentioning; therefore, that the economic policies implemented during the past few years have attempted to break the regional

restrains on the economic growth rates. Jordan economic policies have concentrated on developing the Information Technology and Communications Sectors, encourage foreign investment in any way, and penetrating the global markets. Additionally, Jordan has undertaken serious measures in this regard and declared Aqaba a special economic zone as of 15/2/2001. Moreover, Jordan has signed several agreements that serve to integrate itself in the global economy, and guarantee the opening of markets for Jordanian goods in exchange for the opening of local markets for foreign goods. Table 2.11 shows the agreements signed during the last four years (1997/ 2000) for achieving Jordanian new strategy toward the integration with the outside world.

**Table 2.11: The Agreements signed over the years 1997-2000**

Agreements	Date Signed	Implementation	Comments
The Arab free trade agreement	19/2/1997	1/1/1998	Free trade with the Arab Countries throughout the 10-year duration of the agreement
The Jordan-USA bilateral investment treaty	1/7/1997	1/7/1997	Encouragement and reciprocal protection of investments and economic co-operation.
The Euro-Mediterranean agreement	1/11/1997	1/1/2000	Free trade zone by 2010 and strengthen joint co-operation between EU members and the Mediterranean countries.
The agreement of establishing the Qualified Industrial Zones (QIZs) in Jordan	16/11/1997	16/11/1997	Free trade with the USA within the QIZ (one- way trade).
The Jordanian European joint partnership	24/11/1997	1/1/1999	Free trade with the European Union throughout the 12-year duration of the agreement.
The World Trade Organisation (WTO)	17/12/1999	11/4/2000	This agreement permits retaining a maximum of 20%-



**Table 2.11: The Agreements signed over the years 1997-2000**

Agreements	Date Signed	Implementation	Comments
			30% Customs Fees throughout the 10-year duration of the agreement.
The Free Trade Agreement (FTA) with the USA	-	30/9/2001	Free trade with the USA throughout the 10-year duration of the agreement.

Source: Jordan investment board, Different issues, 2000.

Exploring the role for the Jordanian public and private sectors, it can be said that the later one still has a very secondary role. Despite the importance of the measures taken in the scope of encouraging foreign investments by signing several agreements that serve to integrate the Jordanian economy in the Global economy, or the establishment of a special economic zone in Aqaba, the challenges facing the Jordanian economy compel it to motivate the private sector and allow it to contribute to the efforts aimed at achieving economic growth. This falls within the Government focus on redistributing roles that serve to give the private sector a leading role in the economic activity, leaving the Government to tend to all its main duties like planning policies, supervision and organisation, development of social services, and protecting the environment, among others. Table 2.12 shows the new Jordanian strategy toward the private sector in developing the country economy through the privatisation effort.

**Table 2.12: Privatisation: Enterprises Privatised**

Enterprise	Privatisation Date	Privatisation Procedure	Buyer/ Tenant/ Operator
Jordan Telecommunications Co. (JTC)	2000	40% of its shares were sold	Consortium (France Telecom/ Arab Bank)
Aqaba Railway Corporation (ARC)	2000	Leased	Consortium (Raytheon/ Wisconsin Central)
Jordan Cement Factories (JCF)	1998	33% of its shares were sold	Lafarge (French Company)
Jordan Tourism and Spa	1998	Leased	Consortium



**Table 2.12: Privatisation: Enterprises Privatised**

<b>Enterprise</b>	<b>Privatisation Date</b>	<b>Privatisation Procedure</b>	<b>Buyer/ Tenant/ Operator</b>
Co.			(Accor/ Ghandoor)

Source: Ministry of Planning, Jordan: economic overview, Amman, Jordan, 2000.

As it can be recognised from Table 2.12 in order to liberate the national economy and increase the flow of foreign capital, the government of Jordan has initiated a privatisation program designed to activate the role and efficiency of private sectors in the long term development plans of the kingdom. In 1996, the Telecommunication corporation and the Jordanian electricity authority were both transformed into public shareholding companies fully owned by the government as a first step towards full privatisation. By the end of 1997, the government has sold off all its other holdings in companies where the original stake was 5% or less. The government also divested itself of its more strategic industries, beginning with a 40% stake in the Jordan Telecommunication Company, and a 33% share in the Jordan Cement Company. 40% of state-owned Aqaba Railways has been soled to a consortium of American, Japanese and Jordanian companies. Plans are now underway to sell off significant stakes in Royal Jordanian Airlines, Public Transport Corporation, The National Electric Power Company (NEPCO), Post Sector, Free Zones Corporation, Ports Corporation Aqaba, and Water Authority of Jordan.

Finally, it has to be mentioned that due to the fact that most Jordanian companies are small or mid-size and are currently incapable of competing in the foreign market and benefiting from the agreements mentioned in Table 2.11 because of shipping fees or because of the quality of their products and services which are below the global acceptable level, Jordanian companies should seriously consider merging, especially similar industries in order to be able to become more progressive and more technologically advanced and therefore for being more competitive. In addition, developing these companies can be achieved by attracting foreign investors to invest heavily bringing with them the entire feature required for being successful on the global economic scale. In order to achieve this strategy, not only the Jordanian Government but also the economic

institutions such as Amman Stock Exchange have started developing their regulations for making the new economic strategy and policies applicable in a region missing badly the political and social stability, which will be explored in more details in the following chapter.

To sum up, it has to be said that adopting the IAS in Jordan starting from 1998 could be considered as part of a package of reforms to stimulate the economy through privatisation and investment which has not shown, to some extent, any significant changes according to the macroeconomic indicators investigated. This is not a surprising result, which will be investigated on the microeconomic level in Chapter Six and Seven, since political and social stability is missed badly in the entire Middle East region as it is explored previously.

## **2.6 Amman Stock Exchange**

The stock markets make only one part of the capital market in any economy. Increasingly the role of stock markets has become greater in mobilising savings into the capital information and growth of economics. Thus, attention is being increasingly given by analysts to these financial intermediaries in an attempt to understand the conditions that best render these markets as effective and efficient as possible.

Capital markets embrace all financial institutions that deal with capital, both in the short and long term (Patric and Wai 1973); while stock markets, are those markets where companies sell stocks in order to generate long term capital that can be channeled into their profitable operations. When stocks are issued (sold), no redemption date is specified: buyers either hold on to their stocks for future dividend pay-outs, or exercise their right of selling their holdings at a very small transaction cost holding for capital gains due to price appreciation. Thus, stock markets are, in essence, long term capital markets. However, the importance of security markets stems not only from them being markets of long-term capital but also from their allocated efficiency of funds (Dryden 1970; Fama 1970).



Drake (1977) addresses the issue of the importance of stock markets by indicating that a stock market is worthwhile if it increases real saving, "increases net capital inflow from abroad", increases the return on investment and decreases the cost of equity in that economy. Patric and Wai (1973) argued, however, that what is more important than the rate of savings is the allocating efficiently of capital markets. They added that stock markets might induce people to invest in these markets while channeling such investments to genuinely unprofitable projects. In short, they argued that it is quite possible for a stock market to increase the savings rate in a country while at the same time giving inaccurate signals for resource allocations. It could be argued, however, that both aspects; rate of savings and efficient allocation of capital are quite important and goes together since investors won't invest in a stock market they do not have confidence in by being efficient and therefore transparency is vital in such situation. Moreover, increase savings rate in a country while at the same time giving inaccurate signals for resources allocation won't be permanent on the long run.

Nevertheless, in their basic form, stock markets are financial intermediaries that definitely assist lenders and borrowers of funds to meet conveniently and cheaply. This function on its own identifies stock markets as an extremely important financial venue in any economy. Following from this, it's also argued that stock markets are markets for liquidity (Firth 1980).

Whatever the reason might be behind the establishment of a particular stock market, stock markets have many advantages and vital contributions to any nation's capital market. Opening up family businesses, broadening the range of financial instruments that is available to investors and reducing the cost of financing are just some of these advantages (Drake 1977).

Nonetheless, for stock markets to be more effective in fulfilling their roles of efficient allocation of funds and the expansion of the national growth rate, various conditions of operational efficiency are expected to be satisfied. One of these conditions is the suitability of the political and the legal environment within which capital markets operate (Mullin 1996).



The legal environment, on the other hand, is of crucial importance of the well being of a stock market, since in the absence of legal regulations the market will most certainly be a power struggle and small investors, who have low power in the absence of legal regulations, will be the victims of the resulting conflict. Such a situation will force those who have less power to leave the stock market. Consequently, the stock market won't be efficient and effective in achieving its objectives. Information disclosure requirements imposed on companies listed on a specific stock market is one example of such legal requirements, without which the very existence of stock markets will be jeopardized (Mahon 1965; Scott 1968; Staking and Schulz 1999).

An immediate outcome of conflicting influences on stock market is the prevalence of higher levels of risk associated with trading in such a market. This higher level of risk leads investors to demand higher rates of returns from their investments, since the conventional financial axiom is that the higher the risk the higher is the expected return (the cost of equity capital).

In Jordan, however, Public shareholding companies were set up and their shares were traded in, long before the setting up of the Jordanian Securities Market. In the early thirties, the Jordanian public already subscribed to and traded in shares; the Arab Bank was the first public shareholding company to be established in Jordan in 1930, followed by Jordan Tobacco and Cigarettes in 1931, Jordan Electric Power in 1938, and Jordan Cement Factories in 1951. The first corporate bonds were issued in the early sixties. As a result, an unorganised securities market has emerged in the form of non specialised offices. This prompted the government to contemplate the idea of setting up a market to regulate issuance of and dealing in securities, in a manner that would ensure safe, speedy and easy trading, and protect small savers, through a mechanism that would define a fair price based on supply and demand. Successive economic plans called for the establishment of such a market, and various parties started to prepare, with the government's support, for setting up an organised securities market. In 1975 and 1976, the Central Bank conducted intensive studies, in cooperation with the World Bank's International Finance Corporation (IFC), and it became clear therefore that the size of the national economy and the share of the private sector in it through

public shareholding companies and its broad investor base justified such a step. Such a market was perceived as a creator of and caterer for much needed opportunities for economic growth, which would stimulate and spurt economic activity. These joint efforts bore their fruit, and Temporary Law No. 31 of the year 1976 was promulgating, and what was known as Amman Financial Market was consequently established. A Cabinet resolution of March 16, 1977 set up an AFM Administration Committee, which immediately went into action; and operation on AFM started on the 1st of January, 1978.

The Law laid out the objectives of AFM as follows: to mobilise savings by encouraging investment in securities; thereby channeling savings to serve the interests of the national economy; to regulate issuance of and dealing in securities in a manner that would ensure the soundness, ease and speed of transactions; to safeguard national financial interests and to protect small savers; and to provide the necessary data and statistics to achieve AFM objectives. As of its inception, AFM therefore, was entrusted with a dual task, namely the role of a Securities and Exchange Commission (SEC) and the role of a traditional Stock Exchange.

The market operates a price limit policy, which necessarily means that stock prices should not go above or below a pre-specified limit within one day. This limit is expressed as a percentage of the opening price of the stock, which is currently (in 2000) 5%. The reason behind having such a price limit is, as viewed by the Director General of the market, to prevent large price fluctuations in addition to eliminating unnecessary speculation and protecting the interests of the small savers (Toulcan 1996).

Amman Financial Market classified the listed companies into four sectors, Banking, Insurance, Services and Industrial. As pointed out in the market law, the market is open to international investors and there are no barriers to entry or exit from the market, however, foreign investors are not allowed to own more than 49% of any company's stock. However, capital gains and dividends belonging to foreigners can be remitted outside the country without any restrictions provided that this capital has originated from abroad.



It is argued that economic development means a continuing rise in the tempo of economic activity, which inevitably brings in its wake an increased demand for, and supply of capital, waiting to be channeled through a stock exchange. In Jordan, the stock exchange organisation and all the development processes in action have an unfavorable public image and they have failed to win the complete confidence. It is well to recognise that in Jordan stock exchange had evolved in the past more like private clubs catering to the needs of its members only, and not as a public institutions functioning in the wider public interests. As a result, the stock exchange still remains an institution in which only a microscopic section of the country is interested. Inadequate disclosure practices by Jordanian companies listed in the stock market and, consequently, more speculative activities in the securities market might explain the lack of public interest to some extent.

As a consequence, Jordanian government adopted a comprehensive capital market reforming policy, which aimed at building on the previous experience, boosting the private sector, expanding and diversifying the national economy, and improving regulation of the securities market to reach international standards. Among the most important features of the new orientation were institutional changes in the capital market, use of international electronic trading, settlement and clearance systems, elimination of obstacles to investment, and strengthening capital market supervision to reach optimum transparency and safe trading in securities, in line with globalisation and openness to the external world. In 1997, therefore, a new securities law was enacted to reflect the development of systems and the sophistication of new products and participants. The enactment of the Temporary Securities Law, No. 23 of the year 1997, was a landmark; indeed, it was a qualitative leap and a turning point for the Jordanian capital market. Its aim was to restructure and regulate the Jordanian capital market, and to complete its infrastructure in consistency with international standards, in order to secure transparency and safe trading in securities (The financial market observes international standards of fair practice in the orderly transaction conduct of the market). The Law provided for setting up three new institutions to replace AFM, namely:

1. *Jordan Securities Commission (JSC)*: It has financial and administrative autonomy, and is directly attached to the Prime Minister, which would



enhance its future role, and would enable it to effectively assume its supervisory role over the capital market. It has a Board of Commissioners, composed of five full-time members, which is entrusted with the following functions: drawing up draft laws and regulations on securities; approving the by-laws and regulations of the SDC and ASE; granting licenses issued under the Law; setting limits for commissions of financial services companies and members of the SDC; and adopting accounting and auditing standards for the organs falling under its supervision as well as standards for their qualified auditors.

2. *Amman Stock Exchange (ASE)*: It is a non profit legal entity, with financial and administrative autonomy, and it is the only party authorised to act as an organised market for trading in securities in the Kingdom. Its membership is made up of financial brokers, and it is managed by the private sector.
3. *Securities Depositary Commission (SDC)*: was established on May 10, 1999 with the aim of ensuring safe custody of ownership of securities; registering and transferring ownership of securities traded on ASE; and settling the prices of securities among brokers. It is a non profit legal entity, with financial and administrative autonomy, and is managed by the private sector.

The Amman Stock Exchange has three separate tiers of stocks that are traded. The three-tier system was established, so that an investor can readily know the status of the company he wants to invest in and the requirements it has fulfilled. It also promotes the transparency of the ASE and the companies traded on the stock exchange. There are certain strict requirements that must

be met before a company can be listed in the first tier of the ASE.<sup>5</sup> There is an intermediary tier, which lists companies on the ASE, however they have yet to fill the requirements needed to move up to the first tier. The third tier allows investors to invest in unlisted companies on the ASE. These are companies that are waiting to fulfill the requirements to become a listed company. Table 2.13 provides a summary of the development of the ASE since its establishment.

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<sup>5</sup> Companies that apply for a listing of their shares on the Second Market must fulfil the following conditions: A) The Net Shareholders' Equity must not be less than 50% of the paid-in capital, B) A full year must have elapsed since the Company was granted the right to start its business (Article 3). Companies the shares of which are transferred from the Second Market to the First Market must fulfill the following conditions: A) The Net Shareholders' Equity must not be less than 100% of the paid-in capital, B) The paid-in capital or the market capitalization must not be less than 2 (two) million Jordan Dinars, C) The Company must have made net pre-tax profits for at least two fiscal years out of the last three years preceding the transfer of listing, D) The Company must have distributed profits or bonus shares at least once over the last three years, E) The Company's shares must have been listed on the Second Market for a full year at least, F) At least 10% of the total subscribed shares of the Company must have been traded in over the last twelve months preceding the listing transfer, and the minimum days of trading in said shares must not be less than 15% of overall trading days of same period (Article 5). The shares of a Company listed on the First Market shall be transferred to the Second Market in any of the following cases: A) A reduction of the Company's capital which leads to a fall in capital and market value to less than 2 (two) million Jordan Dinars, B) A decline of the Net Shareholders' Equity to less than 75% of the paid-in capital, C) If the final accounts of the Company in the last fiscal year show a loss of more than 30% of the Net Shareholders' Equity as it stands at the beginning of that fiscal year, D) If the accounts of the Company show losses in the last three years, which exceed in total 50% of the paid-in capital (ASE, Securities Law No. 23 of 1997, Article 3, 5, and 16).



Table 2.13: Development of Amman Stock Exchange 1978 - 2000

Year	Number of Listed Companies	Number of Listed Companies Growth Rate %	Market Capitalisation (Million JD)	Market Capitalisation Growth Rate %	Market Capitalisation to GDP at Current Prices %	Trading Value at First and Second Markets by Sector (JD)				
						Banking	Insurance	Services	Industry	Total
1978	67	-	286	-	44.4	1909388	211581	605792	2889130	5615891
1979	71	59.7	452	58.1	58.9	6837164	932825	1315201	6757969	15843159
1980	71	0.0	495	9.6	50.3	17339167	931044	5944764	17216101	41431076
1981	72	1.4	834	68.4	71.7	28903515	6619151	7828845	32065516	75417027
1982	86	19.4	1034	12.4	78.3	54198621	13553451	18552277	41984614	128288963
1983	96	11.6	1053	1.8	74.1	95726894	6534397	16634169	22531651	141427111
1984	103	7.3	911	-13.4	61.2	34387848	2642570	6243573	16044632	59318623
1985	104	0.97	926	1.7	61.7	47429847	2574124	3766969	12959932	66730872
1986	104	0.0	891	-3.8	41.2	39719883	4212281	4610433	20980391	69522993



Table 2.13: Development of Amman Stock Exchange 1978 - 2000

Year	Number of Listed Companies	Number of Listed Companies Growth Rate %	Market Capitalisa- -tion (Million JD)	Market Capitalisa- tion Growth Rate %	Market Capitalisa- tion to GDP at Current Prices %	Trading Value at First and Second Markets by Sector (JD)				
						Banking	Insurance	Services	Industry	Total
1987	116	11.5	929	4.2	42.1	40735013	7404634	6297346	93741300	148178293
1988	116	0.0	1104	18.9	48.8	42273622	3098922	9459852	77792826	132625222
1989	116	0.0	1400	26.8	59.0	86698562	7841808	32713056	240336414	369589840
1990	112	-3.4	1293	-7.6	48.5	71177094	6422945	30840497	160445437	268885973
1991	112	0.0	1707	32.0	59.8	75523292	4794580	35435609	167083248	302836729
1992	119	6.2	2295	34.5	65.7	202807731	25309246	128018415	530815591	886950983
1993	148	24.4	3463	50.9	90.9	282551879	32946207	127939623	525176093	968613802
1994	139	-6.1	3409	-1.6	81.3	186791403	7845031	91257939	209181679	495076052
1995	126	8.6	3495	2.5	75.6	149619498	7364131	110160986	151813929	418958544
1996	132	4.8	3461	-0.98	69.5	83095667	3105991	51029859	111351827	248583344

Table 2.13: Development of Amman Stock Exchange 1978 - 2000

Year	Number of Listed Companies	Number of Listed Companies Growth Rate %	Market Capitalisation (Million JD)	Market Capitalisation Growth Rate %	Market Capitalisation to GDP at Current Prices %	Trading Value at First and Second Markets by Sector (JD)				
						Banking	Insurance	Services	Industry	Total
1997	139	5.3	3861	11.6	74.4	185445904	4528160	55220936	130049623	355244623
1998	150	7.9	4156	7.6	73.6	192664521	5931034	46979741	218798972	464374268
1999	152	1.3	4137	-0.45	72.3	128121996	7616634	50800991	202934713	389476334
2000	163	7.2	3510	-15.2	58.4	128555301	4143961	54073563	101023712	287796537

Researcher Calculations

Source: Amman Stock Exchange, Yearly Statistical series, Different Issues, Amman, Jordan.

From the above table, it is clear that although ASE has grown rapidly by 23% since 1995 in terms of number of companies, the growth was very little in terms of market capitalisation suggesting that per capita value has fallen. Indeed, it is obvious that the market is very small not only in terms of market capitalisation but also in terms of number of companies listed and volume of trade when it is compared to other well-known stock markets such as London Stock Exchange (LSE). Table 2.14 provides a summary of number of companies listed in LSE, market capitalization, number of foreign listed companies, and capitalization of foreign companies over the period 1995-2000.

**Table 2.14: Development of London Stocks Exchange (Million JD) 1995 – 2000**

<b>Year</b>	<b>Number of Listed Companies</b>	<b>Market Capitalisation</b>	<b>Number of Foreign Listed Companies</b>	<b>Market Capitalisation of Foreign Companies</b>
1995	2078	916445	525	2399193
1996	2171	1029787	533	2431101
1997	2157	1273825	526	2472550
1998	2087	1447942	522	2854786
1999	1945	1852656	499	3641521
2000	1904	1828795	501	3588811

Source: London Stock Exchange Web Site.

Making a comparison between ASE and LSE development over the period 1995-2000, it can be seen there is a gap in terms of indicators such as number of companies listed and market capitalisation beside the fact that LSE ranked as the top financial market having foreign investment as it is shown in Table 2.14.

Although the number of listed companies increased in ASE during the period 1978-1985, then declined slightly during the years 1988-1990, this decline was mainly attributed to merger activity in the market, particularly in the insurance



sector (Abu-Nassar and Rutherford 1995). In 2000, the ratio of market capitalisation to GDP was 58.4% compared with 72.3% and 73.6% and 74.4 for 1999 1998 and 1997, respectively. The decline of trading volumes and market capitalisation in 1994 and 2000 compared to other years starting from 1993 was attributed to various factors including an increase in the new stocks issued during those years (ASE Annual Report, 1994, 1998, 1999, 2000). Additional factors include a stalled Middle East peace process and the prolonged UN trade embargo on Iraq-Jordan's main trading partner prior to the Gulf War. A final and significant factor was the state of uncertainty, which dominated investors in the market in a region considered as one of the political hot-spots in the world. That is because of the continuous conflict between Israelis and Palestinian, remembering that nearly half of the Jordanian residents nowadays originally are Palestinian. But, in conclusion, it can be said that overall market capitalisation at the ASE has witnessed accelerated growth in recent years, rising 120.87% from 1991 to 2000. The banking sector leads the market with around 63% of total market capitalisation. The industrial sector ranks second with 24% of capitalisation, and the service and insurance sectors represent 11% and 12% respectively. Exploring the market capitalisation development pre and post the adoption of IAS, however, it can be seen from Table 2.13 that market capitalisation growth was significantly decreasing over the period 1998-2000 (the period post the adoption of IAS) when it reached its lowest growth rate in the most recent year (2000) to be -15.2%. This fact can be recognised by looking at the market capitalisation to GDP at current prices as a percent which was also decreasing until it reached its lowest in the most recent year (2000) to be only 58.4% comparing with 75.6% for the year 1995 (pre the adoption date) which has been justified referring these surprising results to macroeconomic factors influences as mentioned earlier.

Today, the ASE is considered one of the most sophisticated financial markets in the Arab World. With market capitalisation of around JD 4.14 billion in 1999 the ASE is one of the largest stock markets in the region open to foreign investors. The role of the capital market in Jordan's national economy is highlighted by the ASE's 72.3% ratio of market capitalisation to GDP in 1999. This is one of the highest ratios among emerging markets, indicating a very well established stock market and a relatively high level of securities trading. Furthermore, the

government followed a proposal prepared by the Jordanian Higher Council for Investment (HCI) to attract foreign investment. The proposal recommending removing the 50% limit of foreign ownership on all listed companies except mining, construction, and retail, which are subject to 50% ceiling of the paid-up capital and annual dividends are subjected to 10% tax. In addition, capital gains and interest earned are exempt from tax for both Jordanians and foreigners investing in Jordan through the Securities Law as a part of the package of reforms making the market one of the most liberal and open in the region. Table 2.15 shows the Non-Jordanian investment development in ASE.

Table 2.15: Non-Jordanian Investment in Amman Stock Exchange 1996 - 2000

Percentage of the Non-Jordanian Ownership in the Shareholding Companies by Sector (%)*							Trading and Net Investments of Non-Jordanians			
Year	Banks	Insurance	Services	Industry	General	Total Buying	Total Selling	Net Investment		
1994	46.680	15.999	2.876	23.566	31.148	N.A	N.A	N.A		
1995	46.348	15.666	3.277	19.888	31.048	N.A	N.A	N.A		
1996	47.722	16.478	7.286	21.750	32.795	26445212	17923594	8521618		
1997	53.796	15.969	9.299	26.001	39.059	100499724	43735612	56764112		
1998	56.385	15.123	11.592	28.073	43.931	204989118	82382672	122606446		
1999	56.647	15.620	13.977	30.483	43.099	94277777	78806529	15471248		
2000	55.181	17.917	21.257	30.213	41.672	53015845	64848920	-11833075		

\* As a percentage of market capitalisation.

Source: Amman Stock Exchange (ASE), Yearly Statistical Series (1996 – 2000), Amman, Jordan.



In 2000, non-Jordanian own about 42% of market value, while the government, through Investment Corporation, owned approximately 11%. Jordanian institutional and individual investors own the remaining 47%. Historically, however, Jordanian and Arab investments in the ASE have been the most stable, whereas non-Arab foreign investment has been variable and unpredictable. Therefore, greater levels of corporate transparency will be needed if the market is to stabilise foreign portfolio investments in the future (ASE 2000). This transparency definitely will be increased as a result of increasing the extent of disclosure through adopting the IAS as enforced by the new Securities Law No.23 of 1997. In addition, it can be seen from Table 2.13 that not only the decline was in volumes of trade and market capitalisation but also was in net foreign investment which become negative for the first time over the period 1996-2000 for the most recent year (2000) confirming the argument regarding the uncertainty and increasing risk in a region considered as one of the political hot-spots in the world.

The slowdown in the ASE performance over the last few years and be partially attributed to the tight monetary policy of the Central Bank of Jordan, resulting in substantially higher interest rates. Additional factors include a stalled Middle East peace process and the prolonged UN trade embargo on Iraq-Jordan's main trading partner prior to the Gulf War. However, the recently reformed investment laws, and the acceleration of the privatisation program are expected to have a positive impact on the stock market. The stock markets' price index rose by 3.4 points and turnover almost doubled in the week following the JD72 million deals of selling 33% of the government's equity in Jordan Cement Factories Company (JCFC) to Lafarge of France. Such deals are expected to continue the process of restoring foreign investors' confidence in the ASE, and positively reflect on the prices of shares on the floor.

## **2.7 Summary**

The chapter explored the Jordanian economy development since the independence and its history. That has been achieved by looking at the following issues:

Historical background; Major events in Jordan history, Economic overview; Economic strategy, policies and globalisation; and finally Amman Stock Exchange (ASE).

In summary, it can be said that Jordan is a small and open economy with a free capital market and a parliamentary system of government. The early 1990s witnessed political and economic developments affecting Jordan. The most prominent reasons behind these developments were the outcomes of the Gulf crisis, the subsequent war and the economic sanctions on Iraq. In order to avoid the negative implications, the government has pushed an economic adjustment program and a package of reforms in order to strengthen the economy, improve efficiency and broaden the role of the private sector. Adopting the IAS was part of this package of reforms; legal regulations, privatisation and businesses opportunities through free trade agreements for being able to attract efficiently and effectively foreign investments in developing the country economy.

The situation of peace in the region in 1995 when the peace process started among countries in the Middle East region made it possible at that time to attract capital for investment from public and private international bodies. Therefore, starting from that year, the Jordanian government articulated its vision of the path to an open, competitive business environment. The government goal was to deepen and extend macroeconomic stabilisation, trade liberalisation, financial sector reform, legislative reform, and change the role of the state in order to promote a better climate for private sector development and competitive investments. In order to attract foreign investments and joint ventures in Jordan, the government introduced a new Law for Investment Promotion in 1995 mentioned previously and also Companies' Law in 1997 and Securities Law in 1997, which will be explored in the following chapter.

In conclusion, such significant reforming effort, however, has been disturbed by various political and social problems over the period 1995-2000 which has slow down the acceleration of getting any benefit from such strategic economic changes. This fact has been explored clearly by investigating the macroeconomic indicators concerned.



## **CHAPTER THREE**

### **FINANCIAL REPORTING REGULATIONS DEVELOPMENT AND IAS**

#### **3.1 Introduction**

The amount of information disclosed by companies in an economy depends on the level of development, the legislation in force, the development of the accounting profession and the existence of a sophisticated financial market. Following the discussion of different issues regarding the Jordanian economy and its level of development, the purpose of this chapter therefore is to explore the role of legislation, the profession and the Jordanian financial market in shaping and influencing the current financial reporting practices of public shareholding companies in Jordan in order to examine the need of adopting IAS.

The chapter focuses upon the financial reporting regulations specified by the Jordanian laws and its developments over the years since the establishment of the country. As factors affecting financial reporting in Jordan, Companies Acts will be the first piece of Jordanian legislation to look at followed by Income Tax Law, Amman Stock Exchange Law (ASE) which used to be called the Amman Financial Market (AFM) until 1997, and finally Accounting Profession involvement. By doing so, the question of the necessity of adopting IAS in Jordan will be explored, as a result, by discussing issues such as IAS: theoretical arguments and prior expectations; standardisation: objectives and means; and the relevance of IAS for Jordan.

#### **3.2 The Companies Act**

In the early thirties, the Jordanian public already subscribed to and traded in shares; the Arab Bank was the first public shareholding company to be established in Jordan in 1930, followed by Jordan Tobacco and Cigarettes in 1931, Jordan Electric Power in 1938, and Jordan Cement Factories in 1951. The first corporate bonds were issued in the early sixties.



However, the first piece of Jordanian legislation regarding companies was the enactment of the Companies Act No. 12 of 1964. Before that, the legal matters concerning the establishment and registration of companies were addressed by the Ottoman civil law and commercial law which was replaced and amended by the registration of Jordanian Companies Act of 1927 amended in 1929 and in 1930.<sup>1</sup>

After Jordan's independence in 1946, however, the Palestinian Companies Act was introduced and applied which was influenced by the British Companies Act until 1962 when the Temporary Company Act No. 33 of 1962 was issued cancelling all previous legislation concerning companies. The Temporary Companies Act No.33 of 1962 amended in 1964 and therefore, the Companies Act No.12 of 1964 had been published.

### **3.2.1 Companies Act No.12 of 1964**

The Companies Act No.12 of 1964 contains general disclosure requirements. Books of accounts are to be kept and audited, and a true and fair balance sheet is to be prepared, sent to shareholders and filed with the Controller of Companies. A true and fair profit and loss account for the accounting year is also required.

According to the Act, there were two types of companies identified: partnership and limited shareholding companies. Furthermore, the Act distinguished private from public limited shareholding companies; shares of a private company are not offered for public subscription. The introduction of the Companies Act No.12 of 1964 was the first legislative attempt to place emphasis on the provision of information by public and private shareholding companies. The following disclosure requirements for public shareholding companies were introduced by the Act:

1. The Board of Directors of every limited shareholding company was required to prepare, within the first three months of every year, a balance

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<sup>1</sup> From 1516 to the end of the First World War (1918), the territory occupied by Jordan formed part of the Ottoman Empire. The modern history of Jordan began with dethronement of the Ottoman rule after the First World War in 1918. The Emirate of TransJordan, which was under close British supervision, was created in April, 1921 as part of the post-war settlement and as an appendage to the British mandate in Palestine.

sheet and profit and loss account audited by a certified public auditor, with “a sufficient exposition” of the major items for revenues and expenses for the previous financial year.

2. The Board of Directors of every public shareholding company was also required to publish the balance sheet, the profit and loss account and a summary of the directors’ report in a daily newspaper within two months of the general meeting, which must be held within the first four months of the end of the financial year.
3. The Board of Directors must file copies of the above documents with the Controller of Companies pointed by the government in the Ministry of Industry and Trade, the Amman Financial Market and the Auditor of the company.
4. In the event that the auditor’s report was not presented or read in the general meeting, the approval of the accounts and distribution of profit by the general meeting are invalid.
5. The auditor of the company must ensure that the balance sheet and the profit and loss account are prepared in a way, which shows correctly the true financial situation of the company, and that the company’s records and accounts are organised and prepared in accordance with generally accepted accounting principles (GAAP).

Therefore, although there was no mention of any specific disclosure requirements with regard to the contents of financial statements, the Companies Act No.12 of 1964 represents the first legal attempt to address corporate disclosure by requiring companies to prepare financial statements in accordance with GAAP, which was not clearly specified. However, the Act was subject to further amendments in 1966, 1967, 1972, 1973, 1976 and 1978.

The tremendous economic growth ‘see Chapter Two– section 2.4.3’, in particular the increase in the number of corporations, the establishment of the new stock exchange in 1978 and the emergence of the first accounting professional body in the country, meant that the Companies Act No.12 of 1964 needed revising. The Temporary Companies Act No. 1 of 1989 was then placed on the statute book.



### **3.2.2 Companies Act No.1 of 1989**

Companies Act No.1 of 1989 could be described as more clear and provided detailed and specified procedures that must be followed by an auditor. It included clauses requiring auditors to undertake certain procedures: to examine company administrative and financial regulations relating to the company, namely, to examine the internal financial monitoring system, to check company assets and properties, to check company commitments and to ensure compliance with the law.

Compared with the 1964 Act, the 1989 Act provided for a wider range of types of companies that could be established. Those types are partnership, limited partnership, private limited company, partnership limited by shares and public shareholding company. Consequently, a shareholding company registered under the provisions of the Act must offer its shares to the public. Compared to the other types of companies, public shareholding companies are of greater economic significance and as a consequence subject to more stringent disclosure requirements. The following disclosure requirements for public shareholding companies were introduced by the Act 1989:

1. The Board of Directors of every public shareholding company must prepare, within the first three months of the end of the financial year the following documents which together constitute the company's annual report (Article 168):
  - The balance sheet and the profit and loss account for the current year, with comparative figures for the previous year.
  - The directors' report (brief summary about the company position).
  - The auditor's report.
2. The above documents must be presented to the shareholders' annual general meeting and at least 14 days before the meeting, a copy of the annual report must be sent to each shareholder accompanied by invitation to the annual general meeting. In addition, the board is required to file copies of the above documents with the Controller of Companies and AFM at least 21 days of the annual general meeting to publish the balance sheet, the profit and loss account



and the auditor's report. Copies are also to be sent to the Income Tax department and to the Auditors (Article 169).

3. The Board of Directors of the company have to file with the Controller of Companies and AFM a half yearly report showing the financial position of the company and the results of operations for the interim period signed by the board's chairman (Article 170).
4. The auditor's report must be presented and discussed at the shareholder's annual general meeting (Article 199).
5. Every public shareholding company is obliged to appoint an auditor (Article 220).
6. The main responsibility of the auditor is to report to shareholders on the company's accounts (Article 221).
7. The auditor must address the following in his report (Article 223):
  - Whether he or she has obtained all the information and the explanation necessary to perform the audit in accordance with generally accepted auditing standards.
  - Whether the company's account and financial records are adequate and necessary for performing his or her duty in satisfactory manner.
  - Whether the balance sheet, profit and loss account and the statement of resources and application of funds presents fairly the company's financial position and complies with generally accepted accounting principles.
  - Whether the financial matter cited by the directors in their report are in agreement with the company's record.
  - Whether there have been any violations by the company and its directors of the provisions of the Act, or the company's articles of association, and the extent of which the violation had an impact on the company's financial position and its results of operations.
  - Any other information or marks which the auditor considers important for the company's shareholders to know which are covered by the above.
8. The auditor must be independent from the company and its directors. Therefore, an auditor who is partner or an employee of any director should not be appointed (Article 225).

9. To emphasise the prohibition of insider trading, the Board of Directors may not deal with any securities of the company on the basis of important information which may have been acquired in his or her official capacity in the company, and he or she may not have an interest in any company, association, society or other group which indulges in activities designed to affect the stock market prices relating to any kind of securities issued by the company, nor to carry such activities personally or through others (Article 194).

Although insider trading was outlawed in Article (194), the important step of publishing the stockholding position of dependents (or trusts in which a director has a beneficial interest) was not required. Moreover, there were no provisions regarding consolidated financial statements and such statements were not legally required. In practice, companies, which maintain branches, prepare and present a combined balance sheet and a combined profit and loss account. All inter-branch transactions are eliminated in the accounts. According to the Companies Act No1 of 1989, books of accounts are to be kept and audited and "true and fair" balance sheet is to be prepared. The Act also requires a true and fair profit and loss account for the accounting year.

The balance sheet should clearly be prepared in order to give a correct picture of the company's financial position at that date. There are no legal requirements, however, as to the form or content of financial statements for both public and private shareholding companies. Financial statements must be in Arabic script. Presentations familiar to those in the U.K. and the USA are followed. Both forms of shareholding companies are widely used by Jordanian enterprises. Foreigners doing business in Jordan do not commonly form Jordanian shareholding companies, but usually operate as foreign shareholding companies, or occasionally as branches. Joint ventures between foreign and Jordanian firms are not mentioned in the Act.

To sum up, the Act provides that the financial statements must be prepared in accordance with generally accepted accounting principles (GAAP), which were not defined to any extent by law. There were no specific legal requirements existing as to the form and contents of such statements beyond the requirement that they must



prepare according to GAAP (e.g. Companies Act No.1 of 1989 does not provide any regulations for depreciation and inventory valuation). In other words, the Act was very limited in scope and was expressed in loose and general terms. Moreover, there was no legal requirement that a statement of changes in financial position and cash flow statement must be published as a part of the annual report (Article 168). As a consequence, the Companies Act No.1 of 1989 has been described as general and of limited content and coverage (Suwaidan 1997). It has not kept abreast of the rapid development in the Jordanian economy 'see Chapter Two— section 2.4.3'. Jordan has now issued Companies Act No.22 of 1997 to fit the new economic strategy for the country, especially its aim to attract foreign investors.

### 3.2.3 Companies Act No.22 of 1997

Following the dramatic change in Jordan, mainly because of the Gulf War in 1991, the blockade of Iraq which is the biggest trade partner to Jordan, the end of financial aid from the Arabian Gulf countries, the return of thousands of Jordanian people who used to work in the Gulf countries as a result of the Gulf War and the peace agreement with Israel on 6<sup>th</sup> of October 1994, the country has started to concentrate its effort toward building an independent economy 'see Chapter Two— sections 2.5 and 2.6'. This has been done by attracting foreigners to invest in Jordan through the application of a free market economic strategy and providing new regulations to help in achieving the new Jordanian economic strategy such as the Investment Promotion Law (1995), Securities Law (No.23 of 1997) and the Companies Act (No.22 of 1997). In addition, the Central Bank has removed all obstacles relating to importing or transferring foreign currency abroad.

Following from the general and limited content and coverage of the Companies Act No.1 of 1989, Jordan has now issued Company Act No.22 of 1997 to fit the new economic strategy for the country. The following disclosure requirements for public shareholding companies were introduced by the Act 1997:

1. The Board of Directors of the Public Shareholding Company shall, within a maximum of three months from the end of the Company's fiscal year, prepare the following accounts and statements to be presented to the annual general meeting (Article 140):



- The annual balance sheet of the Company and its profit and loss account, cash flows statements and notes compared with those of the last year's accounts, all duly certified by the Company's auditors.
  - The annual report of the Board of Directors on the Company's activities and forecasts of activities for the following year.
2. The above documents must be presented to the shareholders' annual general meeting and at least 14 days before the meeting, a copy of the annual report must be sent to each shareholder accompanied by invitation to the meeting. In addition, the board is required to file copies of the above documents to the Controller of Companies in the Ministry of Industry and Trade, the Income Tax Department with the annual tax return and ASE. Also, the Board is required, within 30 days of the annual general meeting to publish in a daily newspaper the balance sheet, the profit and loss account along with the auditor's report (Articles 141 and 141).
  3. The Board of Directors of the Public Shareholding Company have to file with the Controller of Companies and ASE a half yearly report showing the financial position of the company and the results of operations for the interim period signed by the board's chairman within one month of its handing over to him (Article 142).
  4. The Board of Directors of the Public Shareholding Company shall annually place in the Company's head office at the disposal of the shareholders, at least three days prior to the meeting of the Company's General Annual Meeting a detailed report containing the following statements copies of which shall be sent to the controller (Article 143):
    - The amounts received from the Company during the fiscal year by the chairman and each of the members of the Board of Directors, in the form of wages, fees, salaries, allowances, remuneration and others.
    - Benefits that the chairman and the members of the Board of Directors enjoy such as free housing, cars and others.
    - Amounts that have been paid to the chairman and members of the Board of Directors during the fiscal year such as travel and transport allowances in and outside the Kingdom.

- Donations paid by the Company during the fiscal year in details and the parties who received the said donations.
5. The Board of Directors of the Public Shareholding Company shall announce the Company's General Annual Meeting date in at least two local daily newspapers within a maximum of fourteen days prior to that date provided that the meeting shall be held within the four months following the end of the Company's fiscal year (Articles 145 and 169).
  6. Every public shareholding company is obliged to appoint an auditor who has to report to shareholders on the company's accounts. Moreover, the auditor's report must be presented and discussed at the shareholders' annual general meeting along with the company's accounts (Article 171).
  7. A public Shareholding Company shall organise its accounts and keep its registers and books in accordance with "*generally accepted accounting principles*" (Article 184).
  8. The fiscal year of a public Shareholding Company shall start on the first of January of each year and shall end on the thirty first of December of the same year, unless otherwise provided for in the company's Memorandum of Association (Article 1985).
  9. The auditor must address the following in his or her report (Article 195):
    - That the auditor has obtained the information, statements and clarifications he deemed necessary to perform his work.
    - That the Company keeps proper books of account, registers and documents maintained in accordance with "*generally accepted accounting principles and adopted in the Kingdom by competent professional bodies*"<sup>2</sup> which can clearly show the financial position of the Company and the results of its operations and that the balance sheet and profit and loss account are in conformity with the records and books.
    - That the audit procedures carried out by him for the Company's account are, in his opinion, considered sufficient reasonable basis to express his opinion regarding the Company's financial position,

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<sup>2</sup> It is known that Jordanian Association of Certified Public Accounting (JACPA) recommended using the IAS since 1990 as it will be explored later in the chapter.



results of its operations and cash flows in accordance with internationally recognised audit registers.

- That the financial statements included in the Board of Director's report addressed to the General Annual Meeting are in compliance with the Company's records and registers.
  - Any violations of the provisions of this Law or of the Company's Memorandum of Association that have taken place during the year in question and which have had a material effect on the results of the Company's operations and its financial status and whether any of these violations still exist within the limits of the information available to him.
10. The Auditor must be independent from the company and its directors. Therefore, an auditor who is a partner to any member of a company Board of Directors, a member of its Board of Directors, or work permanently in any technical, administrative or consultancy work should not be appointed for auditing the company's accounts (Article 197).
11. The Company's auditor and his employees shall not be permitted to speculate in the shares of the Company which he audits its accounts whether such a speculation is being done directly or indirectly. Otherwise, the auditor shall be penalised by dismissal from his job as an auditor of the Company and shall be requested to compensate for any damage that he has caused as a result of his violation of the provisions of this (Article 203).

An important note is that the Companies Act No.22 of 1997 included many articles directed towards foreign companies and mutual funds in Jordan. The Act required the foreign companies to send the Controller a copy of their balance sheet, and profit and loss account relating to the companies' activities in Jordan audited by a Jordanian auditor within three months of the end of the financial year. In addition, the foreign company must make its financial reports available to the public through publication in a newspaper. The Act also has many articles to deal with holding companies. Article (208) requires that a holding company must prepare a consolidated income statement and a consolidated balance sheet annually, in addition to the disclosure otherwise required. These consolidated financial reports are required to be prepared in accordance with the requirements of IAS. The law also includes many articles to deal with joint investment projects, provisions for



associated companies, joint venture investment companies; their establishment and their capital structure, all of which had not been considered in Act 1989.<sup>3</sup>

On the other hand, it can be recognised that Companies Act No.22 of 1997 mentioned the financial statements must be prepared in accordance to the GAAP which were not defined to any extent (Article 184) along with asking auditors to prepare their auditing report in accordance with “*GAAP and adopted in the Kingdom by competent professional bodies*” which is considered as an indirect way of mentioning the IAS since these standards had been recommended in 1990 to be adopted by Jordanian Association of Certified Public Accounting (Article 195). Before the Act 1997, it can be argued that JACPA had no enforcement power to adopt its recommendation concerning IAS adoption.

### 3.3 The Income Tax Law

According to Alexander and Nobes (1994); Ball et al. (1998); and Walton et al. (1998), taxation is a very important factor in situations where accounting systems are strongly influenced by state objectives.

The first Income Tax Law in Jordan was issued in 1933. This law made all public and private sector salaries and wages subject to taxation and a special section in the Ministry of Finance was established to execute the provisions of this law called the Income Tax Section. In 1945, taxation was expanded through Income Tax Law No. 26 to include all individual income obtained from the profits of any profession, craft and trade. This law also mentioned all the technical and legal bases to be applied in the calculation of income taxation. In 1951 the Temporary Income Tax Law No. 50 was issued by which an Income Tax Department was established, replacing the previous Income Tax Section in the Ministry of Finance, and this was made responsible for implementing the legislation on taxation. The Temporary Income Tax Law No.50 of 1951 was amended in 1964 and 1975. This involved no changes in accounting practices.

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<sup>3</sup> It has to be noted that the issues of consolidated financial statements, joint venture, and associated companies were not applicable to the selected JIC's.

In 1982, with the advancement in Jordan's economy 'see Chapter Two— section 2.4.3', it became necessary to develop further legislation to meet modern developments and trends in economic and societal activities. As a result, Temporary Income Tax No. 34 of 1982 was issued. This adopted the principle of "self assessment" as a basis for income estimation, and, at the same time, expanded the taxation criteria and includes more prospective payers. The law represented a civilised advance, since an understanding of tax became more important and a necessary requirement for achieving the economic and social goals, which represented the aims of national development. The Income Tax Law No.34 of 1982 had an effect on accounting in Jordan through the calculation method applied for inventories.

For example, no provisions regarding the valuation of inventories are contained in the Companies Act. In practice, inventories are carried out at cost or market prices whichever is lower. For taxation purposes, the tax authorities have accepted valuation at cost only, as determined by one of the recognised accounting methods and this requirement appears to have influenced reporting practice (Al-Issa 1988). Another example is that, as the Companies Act does not provide any regulations for depreciation, the regulations contained in the Income Law are used. The depreciation rates for tax purposes are the only claimable if they are the rates used in the accounts as the tax allowable figures.<sup>4</sup>

In 1985, the permanent Income Tax Law No. 57, as amended by Law No. 4 of 1992 and Law No. 14 of 1995, was issued through which it became more convenient and reasonable than that under previous laws since tax provided payers with exemptions and incentives to comply. According to the Income Tax Law No. 57 of 1985, as amended by Law No. 4 of 1992 and Law No. 14 of 1995, the most important expenses considered in determining income tax are:

1. Depreciation: The taxpayer must prepare and submit to the Income Tax Department the determined depreciation on a special form provided for this purpose for what he is using from machinery, equipment, and furniture. Deduction allowable under the provisions of the Law must be computed on

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<sup>4</sup> Since 1985, law has specified depreciation rates for tax purposes and only the straight-line method can be used.



the basis of the straight-line method of depreciation. However, in certain cases, if the taxpayer can prove that there was extraordinary depreciation as a result of additional work, the assessing tax officer may apply the depreciation deduction on the basis of percentage rates not exceeding double those percentages determined by the Law. The rates determined by the Law for industrial building range from 2% for the depreciation of store building to 25% for other industrial building companies. The Law also provides that, when making the deductions for depreciation, the following should be considered:

1. No depreciation is allowed on land.
2. Total depreciation charges must not exceed the original cost.  
Therefore, revaluation of assets is not allowed, as the IAS required.
3. In the case that the gross income is less than the depreciation amount in any year, the amount of depreciation not covered by income may be carried forward to the next year or to the following years.

However, there is no mentioned in the Tax Law as to whether companies are allowed to use different depreciation methods for reporting purposes. Given that, the company must use the rates stated by the Tax Law in filing its income return.

2. **Bad Debts:** The Law provides that bad debts are deductible when they are actually incurred. Therefore, for taxation purposes the direct write-off method is the only accepted method, provided that subsequent recoveries of previously written-off debts must be included as a profit in the taxable income in the year they are collected. In practice, taxpayers that want to deduct bad debts should provide the tax officer with proof that the debt has been un-collectable. Thus, establishing a provision for un-collectable accounts is an unacceptable practice for the purpose of calculating tax liability. However, in certain cases where the nature of the business requires the company to establish provision (e.g. current danger provision formed by insurance companies), the Income Tax Department allows such provisions to be regarded as expenses for the period. Moreover, the law provides that correct and genuine files and records should be maintained in relation to bad debts.

3. There is no explicit requirement regarding inventory-pricing methods, except those inventories should be valued at the lower of cost or market price. Inventories with the tax authority revealed that companies must use actual cost as an accepted inventory pricing method.
4. Intangible Assets: Goodwill was not subject to depreciation due to its increasing value over time. Copyright, patents, establishment costs and vacating-costs should be depreciated over a five-year period. Any impairment in value, moreover, was not deductible for tax purposes.
5. Other Expenses: This is includes rental expenses, wages and salaries, pension costs, training, marketing and research and development costs. Company's losses, thefts, and maintenance expenses not defined as being capital expenses are also taken into consideration in determining income tax. In the case of a branch of a company, central company costs allocated to that branch should not exceed five percent of income achieved by the branch before tax.

The Income Tax Law also requires public shareholding companies, and other categories prescribed by the Law, to maintain the following documents:

1. A journal.
2. A book of letter copies which includes all the documents, vouchers and correspondence.
3. The inventory book and the balance sheet.
4. Any necessary books which are required by the nature of the work.

While the Companies Act No.22 of 1997 does not provide any regulations for depreciation and inventory valuation, it seems that companies use the regulations provided by the Income Tax Law concerning these matters (Halbouni 2000). It is reasonable, therefore, to say that the income tax requirements, especially those imposed on public shareholding companies, complement other requirements of the Companies Act. It has to be noted, however, following the Income Tax law requirements by companies is not a matter of choice for reporting purposes.

The Income Tax Law No.57 of 1985, as amended by Law No. 4 of 1992 and Law No. 14 of 1995, required certain types of companies who practise their activities in



Jordan to prepare their records on the basis of the GAAP that are approved by the specialised authority, which were not defined to any extent. Such companies were the Public Shareholding Companies, Limited Liability Companies, Jordanian Partnerships in Shares, Jordanian Limited Partnerships, Foreign Companies or their branch of any type, whether resident or non-resident, in addition to other entities specified by the law. It is noticeable that the Income Tax Law had very limited requirements concerning income measurement and asset valuation methods.

Regarding the tax on taxable income, Article (17) of the Income Tax Law No.57 of 1985, as amended by Law No. 4 of 1992 and Law No. 14 of 1995 stated that companies that work in the following sectors: metallurgy, industry, hotel, hospitals and transportation - should be charged at 15% of their taxable income. In addition, in the case of transportation and construction companies, only those that have paid up capital of at least one million J.D. should be charged at this rate. Moreover, banks, financial, insurance, inter-mediation and exchange companies should be charged at 35% of their taxable income, while other companies should be charged at 25%.

An interview conducted by Halbouni (2000) with some employees at the Income Tax Department in Jordan shows that there is a difference between the income tax estimated by companies and that estimated by the department. This could be attributed mainly to the method of treatment of capital and current disbursements and of the following items in a way that was not consistent with the income tax requirements:

1. The amortisation of establishment costs and vacating money.
2. Expenses, which are related to, exempted profits.
3. Entertainment expenses.
4. Travel expenses.
5. The branches' share of the costs of the head office.
6. Carried losses.
7. Donations and the treatment of provisions and reserves.
8. The recoverable debt.

In spite of the significant contribution to the Income Tax Law No. 57 of 1985, as amended by Law No. 4 of 1992 and Law No. 14 of 1995, in regard of financial reporting regulation developments, revaluation of assets is not allowed as the IAS requires it since total depreciation charges must not exceed the original cost, the law has not mentioned how many years should the amount of depreciation when it is not covered by the gross income be carried forward. In addition, the Income Tax Law is not requiring from companies, more specifically the public shareholding companies, any documents of proof about the assets registered for the company beside the other documents mentioned above. Finally, The Tax Law required certain types of companies who practise their activities in Jordan to prepare their records on the basis of the GAAP that are approved by the specialised authority, which were not defined to any extent. On the other hand, it seems that the regulations provided by the Income Tax Law No. 57 of 1985, as amended by Law No. 4 of 1992 and Law No. 14 of 1995, comes as complementary regulations, especially those regulations imposed on public shareholding companies, of the Companies Act No.22 of 1997 concerning depreciation and inventory valuation.

### **3.4 Amman Stock Exchange (ASE)**

It has been argued that capital markets contribute to the national economy's well-being through increasing the amount of funds available to finance industry and encouraging savings towards investment (Pike and Neal 1993).

Jordan is a small open economy with a free capital market with a parliamentary system of government. Industry is dominated by the service sector, with mining and manufacturing contributing only some 17% GDP in 2000. The country's stock market commenced operation in 1978 with quotations according to the profession of the Amman Financial Market Law No.31 of 1976 through the efforts of the Central Bank of Jordan and the International Finance Corporation. It is a government-mandated vehicle for both the regulation and institutionalisation of the securities market in Jordan. It has been given the appropriate power to promote the development of the securities market, to regulate the activities of member firms dealing in securities as underwriters, brokers and investment advisors, and to regulate the trading market (Arab Potash Co., 1997). It started its activities on the



first of January 1978 covering 67 listed companies; this number rose to 116 in 1988. The number had fallen slightly at 112 in 1991 as a result of merger activity. However, till Sep. 2000, the number becomes 163 companies 'see Chapter two—section 2.6'.

According to the Law No.31 of 1976, Amman Financial Market adopted certain policies concerning disclosure:

1. A listed company is required to make immediate public disclosure of all material information concerning its affairs.
2. A listed company is required to release material information to the public in a manner designed to obtain full possible public dissemination.
3. Any rumour or report, true or false, that contains information that is likely to have, or has an effect on the trading in the company's shares or would be likely to have a bearing on investment decisions, must be publicly clarified as soon as possible.
4. A listed company should refrain from promotional disclosure activities which exceed that necessary to enable the public to make informed investment decisions. Such promotional activities may include press releases, public announcements not justified by actual developments in the company's affairs, exaggerated predictions and other forms of overstated disclosure which may mislead investors and cause unwarranted price movements and activity in the company's shares.
5. Insiders should not trade on the basis of material information which is not known to the investing public. Moreover, insiders should refrain from trading, even after material information has been released to the press, for a period sufficient to permit through public dissemination and evaluation of the information.

The AFM Law No.31 of 1976 disclosure requirements were greater than those of the Companies Act No.12 of 1964 amended in 1966, 1967, 1972, 1973, 1976 and 1978. The AFM's articles of association required the following of listed Jordanian public companies:

1. The market has the right to ask listed companies, to disclose any information about their performance, to ensure safe transaction and to protect investors (Article 28).
2. Companies wishing to issue securities (shares or bonds) have to prepare a prospectus on a special form containing all information and explanations deemed necessary to investors (Article 33).
3. Article 34 requires companies to inform the market of any information, which is likely to influence security prices, and the market has the right to disclose such information via any means (e.g. the press).
4. Article 36 states that General Director and/or any member of the Board of Directors is required to provide the market with a statement showing the shares of bonds he (they) own in the company within one month of his (their) appointment. Further, he is (they are) required to provide the market with a statement of any changes in his (their) ownership within ten days of the change.
5. Article 39 states that public shareholding companies are required to keep records of shareholders. Such records contain the names of the shareholders, their shares number, their transfers of shares and any details deemed to be necessary by the market.

It has been argued that Amman Financial Market Law No.31 of 1976 was only concerned with shareholders and investors. In addition, they can be seen as lax, vague and loose (Al-Issa 1988). It did not require the specific information normally deemed relevant for an efficient market (Al-Issa 1988; Solas and Bakay 1989). This might be due to the relatively small amount of activities in the market, since it would appear that the policy of the market is to attract a large number of listed companies (Abu-Baker 1995). Moreover, Dahmash (1992) contended that all Arab countries encounter obstacles that reduce the effectiveness of their financial markets. The most effective obstacles facing the development of stock exchange are the following:

1. The loss of investors' confidence in shares of listed companies.
2. The lack of information.
3. The spread of misleading information, fraud leading to investment risk.
4. The lack of a computerised system.



The Amman Financial Market (AFM) is operated through two markets: the primary or the first market in which new issues of stocks and bonds are sold for the first time and the secondary market where securities which have been issued and subscribed are traded 'see Chapter Two– section 6.2'. The secondary market is divided into three parts: the regulator or the, where trading in the stocks of listed companies takes place, the parallel or the second market, where trading in bonds takes place, and the trading floor or the third market, where dealing in unlisted companies and legal transfers takes place (AFM 1996).

Concerning the disclosure requirements, AFW Law No. 31 of 1976 discussed the disclosure of information in general terms. In addition, the few requirements were concerned more about the prevention of insider trading than the provision of information in companies' reports. In this sense, the AFM could be described as an unregulated market in which listed companies were not subject to any stringent disclosure requirements (Solas and Bakay 1989). Moreover, according to Omet (1990) AFM is unlikely to have a considerable impact upon the economy of Jordan for some years to come. The performance of AFM has been seriously affected as a result of the Gulf war and Jordan's proximity to both Iraq and Kuwait.

The 1976 Law was amended by the enactment of the AFM Law No.1 1990 managed by the committee appointed by the Council of Ministers on recommendation by the Minister of Finance. The committee was made up of the market general manager and five other members; one each from the Ministry of Industry and Commerce, two licensed banks, a share holding company and a representative of Amman Chamber of Industry. However, according to Khouri (1997), the following are the weaknesses in the operation and regulation of this body:

1. The law did not differentiate between the process of the exchange of securities and the process of controlling and regulating the market.
2. There was an overlap between the AFM Law and the Companies Act, which affects the right for small investors;
3. There is no specification of the type and the time of the required financial information.

4. Neither the Companies Act nor the AFM Law contains any provisions relating to investment funds.
5. Stock prices sometimes did not reflect a fair value, sometimes as a result of the small volume of trading.
6. The government has ownership of a large number of listed companies.

The articles for the Law 1990 concerning disclosure required the following from listed shareholding companies:

1. The market has the right to ask listed companies to disclose any information about their performance, to ensure safe transactions and to protect investors (Article 28).
2. Companies wishing to issue securities (shares or bonds) have to prepare a prospectus on a special form containing all information and explanation deemed necessary to investors (Article 33).
3. Companies have to inform the market of any information, which is likely to influence security prices, and the market has the right to disclose such information by any means such as the press (Article 34).
4. General Director and/or any member of the board of directors of listed companies is required to provide the market with a statement showing the shares or bonds he owned in the company within one month of his appointment. In addition, he is required to provide the market with a statement of any changes in his ownership within ten days of the changes (Article 36).
5. The listed Jordanian shareholders companies are required to keep records of shareholders. These records contains the names of shareholders, the number of their shares, transformation of the shares and any details deemed to be necessary by the market (Article 39).

An interesting point has to be said is that according to the AFM Law No.1 of 1990 the committee of the financial market<sup>5</sup> has the right to establish a price ceiling in either direction of the stock opening price. The ceiling is applied as a percentage of

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<sup>5</sup> The management Committee is composed of eight members who are appointed by the Cabinet on the recommendation of the Minister of Finance (AFM Law 1990, Article 26).



the stock opening price, and can be applied to the market as a whole or to a certain stock. Before December 1989, the price ceiling was 10% but, in 1990, this margin was reduced to 5%. The purpose of establishing price ceiling is to keep speculative movement in market prices under control (El-Khoury and Civelek 1993).

The name for the financial market has been changed from Amman Financial Market (AFM) to Amman Stock Exchange (ASE) and new securities law was issued in May 1997 in order to develop and regulate the stock market. Securities Law No. 23 of 1997 established four independent entities 'see Chapter Two- section 2.6':

1. The Securities and Exchange Commission (SEC), whose purpose to regulate, develop and monitor the securities market.
2. The Stock Exchange where the securities in the Kingdom will be traded.
3. The Central Securities Depository (CSD), which is responsible for the deposit and transfer of ownership of securities, traded in the stock exchange.
4. The Professional Committee, which represents certified financial professionals and aims to safeguard the interests of its member and act in a supervisory capacity with regard to what constitutes acceptable professional conduct by its members.

The ASE Law provided the legal framework for disclosure, financial services companies, investment companies and mutual funds by all companies falling under its supervision. The Securities Law No.23 of 1997 adopted accounting, auditing and performance evaluation standards for all entities falling under the Commission's supervision. Additionally, it determined standards, requirements and tasks for qualified auditors in auditing the books and records of the SEC, the CSD, financial companies, investment funds and public joint stock companies.

In 1996, AFM signed an agreement with the Paris Bourse to modernise the stock market in accordance with international standards of trading, clearing and settlement (AFM 1996). In early 1998, this project was completed. It is clear that the Securities Law No.23 of 1997 played a significant role in determining the IAS as the basis on which Securities Exchange Commission members should prepare their annual reports (ASE 1998). In 1998, the Securities Commission Board issued Directive No.

1 on the disclosure (Securities Exchange Commission Law No.1 of 1998), accounting standards, auditing standards and conditions applying to the audit of entities subject to the control of the securities commission.

With regard to disclosure, Article (8) required the issuer to submit to the board annual and semi-annual reports and statements containing the balance sheet, the profit and loss account, the cash flow statement and the notes to the financial statements. Therefore, the annual report must contain the following:

1. An adequate description of the issuing company.
2. The nature of its business and its activities.
3. The names of the member of the board of directors, executive officers, senior staff and major investors.
4. Audited financial statements clearly showing the issuing company's financial profit and an evaluation by issuer's management of current and future developments that may have an effect on the company's results or financial position.

The new law prospectus specified that the following information should be included:

1. An adequate description of the issuer.
2. Its business and activities.
3. The individuals in charge of managing its affairs, such as members of board of directors, executive officers, senior staff and major shareholders.
4. An adequate description of the securities, their number, price and issue provisions.
5. The financial position of the issuer containing all relevant financial data including an audited balance sheet and profit and loss account for the last financial year.
6. Any other information required by the commission in order to assist the investor in making a decision about investing in the securities. However, the new law does not make any specific requirements in relation to foreign investors.



Directives on Disclosure Related to Amman Stock Exchange Issued by virtue of the provisions of Article 26 (c & d) of the Securities Law No. 23 of 1997 enforce the Stock Exchange to disclose the following information:

1. The Stock Exchange must disclose the following information:
  - a. Names of issuers of securities listed on the Stock Exchange.
  - b. Names of issuers of securities suspended from trading.
  - c. Names and addresses of the Stock Exchange members.
  - d. Names of the Stock Exchange members barred from practising.
  - e. Names of the certified financial professionals licensed to trade on the Stock Exchange.
  - f. Daily, weekly, monthly and annual data, which cover each company's trading, as well as the sector movements, in terms of number of traded shares, volume of trading, number of contracts, prices, indices and key financial indicators.
  - g. Information and data coming to the Stock Exchange, which have an influence on the prices of securities, and the trading flow.
2. The public may have access to and may make copies of, against consideration, the information and data mentioned in sub-paragraph A of this Article.
3. Disclosure shall be through Stock Exchange bulletins, and information shall be circulated to the Stock Exchange members and shall be announced via those methods deemed appropriate by the Stock Exchange

It has to be noted that Directive No. 1 issued by the Securities Commission Board (Securities Exchange Commission Law No.1 of 1998) asked companies under their supervision to adopt the IAS, international auditing standards and the requirements needed to be an auditor. Moreover, they prohibit the members of the Board of Directors, the Chief Executive Officer, the Stock Exchange staff, the external legal consultant of the Stock Exchange, and the auditor of the Stock Exchange to divulge any information or data.

In summary, it could be argued that Amman Financial Market Law No.31 of 1976 can be seen as lax, vague and loose concerned only with shareholders and investors and discussed the disclosure of information in general terms. In addition, the few requirements were concerned more about the prevention of insider trading than the

provision of information in companies' reports. In this sense, the AFM at that time could be described as an unregulated market in which listed companies were not subject to any stringent disclosure requirements. The Amman Financial Market Law No.1 of 1990, however, did not impose any accounting requirements for listing companies. Moreover, the law did not differentiate between the process of the exchange of securities and the process of controlling and regulating the market. Securities Law No.23 of 1997 (and Securities Exchange Commission Law No.1 of 1998), therefore, could be seen as the law, which specified requirements relating to the content of a company's annual report. In addition, the law adopted the IAS and the international auditing standards for all entities falling under the supervision of the Security Exchange Commission (SEC) completing the work started by the Companies Act No.22 of 1997 who asked Jordanian companies under his supervision to adopt those standards recommended by JACPA 'see section 3.2.3'.

### **3.5 Accounting Profession**

The 1919 legislation in Iraq and Palestine relating to the accounting profession was based on British Company Law and was employed in Jordan in the absence of national legislation (Saadah 1996). Accordingly, that legislation covered auditors' rights, duties and responsibilities, specifying the body authorised to license professional practices and the party authorised to appoint the auditor.

The first auditing firm in Jordan was Saba & Co., which established its first office in Jerusalem in 1924 and its first office in Amman in 1944. Gorge Khader & Co. was among the first auditing firms to render auditing services from the west bank of Jordan and established a permanent audit office in Amman in 1944 (Abdullah 1982).

In the early fifties, with the progress and development of the economy 'see Chapter Two– section 2.4.1', some foreign firms of auditors, such as Whinney Murray & Co. opened branches in Jordan. In 1997, there were a number of foreign auditing firms working in Jordan, including Deloitte & Touche, Arthur Andersen, Ernst and Young, KPMG, PricewaterhouseCoopers.



According to Khouri (1997) the auditing profession has been deeply influenced by British rules and principles since the twenties and thirties. British auditors were exclusive in Jordan and the Arab world, and Russell & Co. performed most auditing. Pioneering Arab auditors e.g. Saba & Co. in Jerusalem, Yani Nawwar in Egypt and Zaki Hassan in Lebanon, played their role in amending legislation and founding Arabic auditing offices in the early twenties or thirties. In the last few years the American auditing bases and principles have affected the auditing profession (Halbouni 2000).

In 1961, the first law concerning the auditing profession, the Accounting Auditing Profession Law No.10 of 1961 was issued. This law specified all the conditions that should be satisfied in order to have the right to practise the auditing profession. However, it can be said that entry into the accounting profession was loosely regulated by the Accounting Auditing Profession Law No.10 of 1961 in which entry was not subject to professional examinations or stringent academic qualifications, especially for those people working for the government. In this Law, there were no official pronouncements on general accounting principles, auditing standards or professional ethics that govern the audit profession in Jordan, and it was mainly concerned with the audit profession in the private sector. Furthermore, all licensing procedures and authorities were not specified.

In Law No. 12 of 1964, auditing became compulsory for all public companies. A breakthrough for the profession occurred in 1985 after the enactment of the Accounting Auditing Profession Law No.32 of 1985 which provided the establishment of the first accounting profession in the country, namely the Jordanian Association of Certified Public Accounting (JACPA) came into effect in 1987.

### **3.5.1 Accounting Auditing Profession Law No.32 of 1985**

Before 1985, entry into the accounting profession was loosely regulated. The only organisation responsible for the entry into the auditing profession in Jordan at that time was the Audit Bureau (AB) which was a governmental body and originally established to supervise the financial matters of the government. The Accounting Auditing Profession Law No.32 of 1985 regulated the audit profession and made

membership of the association compulsory, effectively superseding law No. 10 of 1961. In 1986, the Accountants Auditors Classification Regulation was issued, followed in 1987 by the Auditors Association Regulation.

The Accounting Auditing Profession Law No.32 of 1985 provided, beside the establishment of JACPA that will be discussed later in a separate section, for the establishment of the Council of the Auditing Profession (CAP). The CAP exercises the authority of licensing and classifying auditors. The CAP is composed of twelve members as follows:

1. President of the Audit Bureau appointed by the government.
2. Vice-president of the Audit Bureau.
3. Deputy Minister of Finance.
4. Deputy Minister of Industry and Trade.
5. Director of the Income Tax Department.
6. Deputy of the Central Bank of Jordan.
7. Director of the AFM.
8. Two accounting academics selected from Jordanian universities
9. Three auditors appointed by the Cabinet based on a recommendation by the Jordanian Association of Certified Public Accounting (JACPA).

In addition, the Accounting Auditing Profession Law No.32 of 1985 called for the establishment of the Jordanian Auditors Society (JAS) with the purposes of looking after the interests of members of the profession, working towards the promotion of co-operation between them and seeking to raise the scientific and technical level of the profession.

According to the Accounting Auditing Profession Law No.32 of 1985, to be eligible to practice auditing, the person must have one of the following qualifications:

1. A Bachelor's degree or its equivalent in accounting with at least three years of experience in accounting and auditing of which one year must be in auditing.
2. A Master degree or its equivalent in accounting with at least two years of experience in accounting and auditing of which one year must be in auditing.
3. A PhD in accounting with at least one year of experience in accounting and



auditing or two years' teaching experience in one of the Jordanian universities.

4. A Bachelor degree or its equivalent from the Faculty of Commerce, Law or Economics with at least five years' experience in accounting and auditing of at least one year must be in auditing.
5. A Community College degree in accounting with at least six years of experience in accounting and auditing of which at least two years must be in auditing.
6. Have worked for the Audit Bureau (AB) or any other government department as a principal auditor and possess a Bachelor's degree or its equivalent.
7. A certificate from an internationally recognised professional body such as the Certified Public Accountant (CPA) in the United States or the Institute of Chartered Accountants in England and Wales or the Institute of Chartered Accountants in Scotland.

In addition to the above academic qualifications and experience, person categories 1, 2, 4, 5 and 6 above should pass an examination set as a prerequisite for entry into the profession covers a wide range of topics in accounting, auditing, legislation related to accounting, taxation and the financial system in Jordan (Ramadan 1989).

The Law also classifies companies into three groups as follows:

1. Group (1), which includes Banks and Financial Institutions, Insurance Companies, Industrial Public Shareholding Companies, Branches of Foreign Companies and Government Agencies.
2. Group (2), which includes other, Public Shareholding Companies not mentioned in group 1 above.
3. Group (3), which includes sole traders and other types of companies, not mentioned in-groups 1 and 2 above.

The CAP, however, classifies auditors into the following three categories (Article 4):

1. Category (A) which includes the following:
  - Licensed auditors possessing the qualifications stated in 1, 2, 3 or 7

above.

- Auditors licensed before the enactment of the Audit Law 1985 and who possess the qualifications stated in 1, 2, 3 or 7 above.

2. Category (B) which includes the following:

- Licensed auditors possessing the qualifications in 4 or 6. However, in the latter cases, the auditor must have the Bachelor's degree in commerce, Law or economics.
- Auditors licensed before the enactment of the Law and possessing the qualification required in 4 above.

3. Category (C) which includes the following:

- Licensed auditors possessing the qualifications stated in 5 or 6 above. However, in the latter case, the auditor must have a first university degree.
- Auditors licensed before the enactment of the Law and possessing the qualifications in 4 above.

Article 5(a) of the Auditing Profession Law No.32 of 1985 provides that auditors must practice public auditing according to their classifications adopted by the CAP as follows:

1. Auditors classified as category (A) are allowed auditing the accounts of groups 1, 2 and 3 above.
2. Auditors classified as category (B) are allowed to audit the accounts of groups 2 and 3 above.
3. Auditors classified as category (C) are allowed to audit the accounts of group 3 above.

Based upon the Law, the auditor shall not practice any work in conflict with the nature of the audit of accounts of the company, such as being a member of the board of directors or in the management of any advisory office. Furthermore, he has the right to examine all the books of the company and to present his report which should include the following:

1. All information and explanations, to the best of his knowledge, are necessary for rendering an opinion.



2. Financial Statements (the balance sheet and the loss and profit account) that present a true and fair view of the financial position and results of operations of the company under his examination. Moreover, these statements must be prepared in accordance with the Companies Act and other related laws.
3. A statement that confirms that the statements were prepared in accordance with generally accepted accounting principles.
4. An assertion as to whether or not there has been any violation of the Companies Act or other laws which has had an effect on the company's financial statements.

To sum up, it could be argued that the Accounting and Auditing Profession Law No.32 Of 1985 is clarifying auditors who are eligible to practice auditing in Jordan by having specific qualifications. Moreover, the law has called for the establishment of the Jordanian Auditors Society (JAS) who are looking after the interest of members of the profession, working towards the promotion of cooperation between them and seeking to raise the scientific and technical level of the profession. In addition, the law called for the establishment of the Council of Auditing Profession (CAP) who exercises the authority of licensing and classifying the auditors. Finally, the law called for the establishment of the Jordanian Association of Certified public Accounting (JACPA) who are in charged of developing the competence and independence of its members, publishing accounting principles for the training and awareness of its members and developing accounting and auditing standards that could best meet the needs of the country, an issue will be discussed in the following section. Accounting and Auditing Profession Law No.32 Of 1985, therefore, can be seen as complementary regulations of the Companies Act No.12 of 1997 concerning auditing practice.

#### **3.5.1.1 Jordanian Association of Certified Public Accounting (JACPA)**

The Accounting Auditing Profession Law No.32 of 1985 provided for the establishment of Jordanian Association of Certified Public Accounting (JACPA) as it is mentioned earlier. The main objectives of the JACPA are to develop the competence and independence of its members, to publish accounting principles for the training and awareness of its members and to develop accounting and auditing

standards that could best meet the needs of the country (JACPA 1987). The JACPA, however, has not developed or formulated any national standards, or even defined GAAP. Nevertheless, in 1989 the JACPA adopted the International Accounting Standards (IAS) in the hope that such standards would be replaced as national standards were developed. In March, 1989, the Board of Directors of JACPA decided in its Ordinance No.54 that such standards have to be followed by the Jordanian public accountants during their course of examination of financial statements of the Jordanian Shareholding Companies starting by December, 1990. It seems, therefore, that the objective of developing national standards is no longer being pursued by the JACPA. As stated by Naeem Saba, the Chairman of the Board of the JACPA from 1993 to 1997:

*“Setting national standards will isolate us from the rest of the world and complicate matters. Consequently, we must use IAS with a little adaptation to suit the needs of economic projects in Jordan. It would be a waste of time and effort to set national standards that would discourage foreigners from considering investing in the country”.*

It has to be said that the JACPA did not have the power to impose IAS on companies or on its members until 1997 when Companies Act No.22 of 1997, Securities Law No.23 of 1997 have given consideration, authority and more power to JACPA. The Securities Law No.23 of 1997, for example, has given more power to the Jordanian Association of Certified Public Accounting (JACPA) through the following:

1. Auditors for a company controlled by the Jordanian Securities Commission are required to be a member in the JACPA (Article 27).
2. Auditors should implement the instructions published by the JACPA. In addition, auditors should improve their skills and follow the changes which might happen by having frequent training courses supervised by the JACPA or other licensed by the JACPA (Article 28).
3. JACPA, through a co-operation with the Jordanian Securities Commission, creates the necessary regulations for making sure of implementing what has been said in Article 28 (Article 29).
4. JACPA has to provide annually a list for the auditors' names that satisfied the conditions every first month of each year and the modifications which



might happen on this list. This is has to be handed to the Jordanian Securities Commission (Article 30).

According to Matter (1995), the fact that the decision of the JACPA to adopt IAS had not been translated into legislation makes compliance with such standards by companies and auditors questionable. He indicated that many companies and auditors did not follow IAS, because there were no legal or professional implications. Realising that, the JACPA exercised a great deal of effort to incorporate IAS in the provision of the Companies Act 1989 and in the 1990 Amman Financial Market (AFM) Law, but without success. Recently the Companies Act No.22 of 1997 and Securities Law No.23 of 1997 ask companies under their authorities to fully adopt the IAS's 'see Chapter Two- sections 2.2 and 2.4'.

An important issue that might be necessary to discuss is the independence of the auditors in Jordan. It is widely acknowledged that the value of auditing services depends, to a large extent, on the fact that auditors are independent from their clients (Corless and Parker 1987; Koh and Mahathevan 1993; Simon and Francis 1988). For example, investigating the impact of price cutting on auditor's independence, Simon and Francis (1988) found that price cutting had an adverse effect on auditor's independence. This situation could be the case in Jordan, as a developing country, where the quality of auditing is valued less than the cost. Interviews with managers of six auditing firms in Jordan conducted by Suwaidan (1997) revealed that the market for audit services suffers from severe price competition. Although, the JACPA attempted to solve this problem by determining a minimum fee (JD300), it seems that even this very minimum fee were not complied with by some auditors. As stated by one of the managers

*"The reason why sometimes we accept an auditing job at a very low price is that if we do not take it, someone else will".*

Another variable which was hypothesised to have an adverse impact on auditor independence is the provision of management advisory services (MAS) (Barkess and Simnett 1994; Hartley and Ross 1972; Shockley 1981). The main argument here is that the involvement of an auditor in providing services other than the usual audit



will lead to a close relationship with the client which makes it difficult for the auditor to remain independent. However, the results for investigating this variable were mixed. For example, Hartley and Ross (1972) in their study investigated the perceptions of three groups; chartered financial analysts, CPA's and financial executives, they found that the majority of the respondents did not consider that performing MAS impaired auditors' independence. In contrast, the results of Shockley (1981) study indicated that both financial statements users and CPA's perceived MAS to be associated with a higher risk of loss of independence.

In Jordan, a study conducted by Matter (1995) examined the above variables based on a questionnaire sent to 129 respondents comprising three groups: CPAs, users of financial statements and official respondents for controlling and supervising the audit profession. The respondents were asked to assess the importance of competition and management advisory services (MAS) on the impairment of auditor independence. The results of the study indicated that the respondents considered competition as an important factor with an adverse impact on auditor independence. As for MAS, the results of the study indicated that this variable was considered unimportant in influencing auditor independence. Matter (1995, P.321) concluded that:

*“Maintaining and supporting auditor independence in Jordan requires having a code of professional ethics governing the auditing profession, applying strict penalties to auditors who do not comply with the code of professional ethics, and having a minimum rate of audit fees which should be respected by auditors so as to minimise unfavourable competition in the professional market”.*

To sum up, the auditing profession has been deeply influenced by British rules and principles since the twenties and thirties. In the last few years the American auditing bases and principles have affected the auditing profession. It can be seen, moreover, disclosure requirements are generally lacking details, very limited and not specific according to the Accounting Auditing Profession Law No.32 of 1985. For example, the Accounting Auditing Profession Law No.32 of 1985 asked auditors for a statement in their reports confirming that the statements were prepared in accordance with General Accepted Accounting Principles (GAAP) which never was defined by law. Moreover, the law determined that a person could be qualified as an auditor if he has a bachelor degree or its equivalent from the faculty of Commerce,



Law or Economics. The fact that there was no emphasis upon training in accounting has been considered as a weakness.

Greater effort and effectiveness, therefore, had been achieved by the JACPA when it made pioneering steps towards the use of global approaches to accounting and auditing in Jordan. The dramatic economy development in the nineties has made JACPA to follow and apply international accounting and auditing principles, regardless of any local obstacles, by adopting policies of qualitative improvement and training in auditing. No doubt, the application of the IAS will make for the preparation of dependable and trusty financial statements, which are reliable and comparable to international standards and will make a difference to international investors. In addition, the accounting profession has started to play an important role in influencing the reporting practices of companies supported by the Companies Act and the Securities Law. However, this power for the accounting profession might need to be expanded in order to make the association more involved in developing the financial reporting in the country. Abayo et al. (1993) argued that given a widespread shortage of qualified accountants and auditors and the generally weaker influence of professional bodies, it seems reasonable to assume that both internal accounting systems and audit quality are often poorer in less developed countries than in developed nations, and generally accepted accounting principles (GAAP) are less likely to be followed. This leads to an assumption of poorer quality financial disclosure and, in particular, the possibility of both inaccurate and incomplete disclosure.

### **3.6 IAS: theoretical arguments and prior expectations**

There are different external environmental factors that have had an impact on accounting and disclosure in various countries. One of these is international and regional harmonisation / standardisation efforts. For instance, the EU member countries, in issuing a number of accounting directives has been one of the primary generators of such efforts influencing the accounting and disclosure of the EU member countries. The other primary generator of international / standardisation efforts has been by International Accounting Standards Committee (IASC), which



has issued a number of the IAS. However, despite some arguments that have questioned the suitability of the IAS for developing countries, it has been claimed that the work of the IASC has had an impact on accounting, including disclosure, particularly in developing countries 'see Chapter Four– Literature Review'.

### **3.6.1 Standardisation: objectives and means**

It can be argued that motives for adopting the IAS varies: The economic forces of international trade made evident a need to overcome the obstacles created by a widely divergent system of financial reporting and their nationalistic antecedents. It can not be said that the international trade did not exist before the standardisation effort of financial reporting, but it can be argued that the barriers will be reduced as a result of this effort in a world where the multinational business is playing a significant role in developing not just the domestic economic growth but also the world economic growth. Chamisa (2000) argued that the increasing growth in international trade and investment has brought to the forefront problems engendered by differences in accounting reports used in many different countries. Studies have demonstrated, in a variety of ways, that a) differences in financial accounting measurement and reporting practices do exist; and b) these differences do actually create problems of misunderstandings, inefficiencies, and uncertainties to participants in the global economy (Arpan and Radebaugh 1985; Choi and Levich 1991; Evans and Taylor 1982; Peavey and Webster 1990; Purvis et al. 1991).

Nowadays firms wish to list their securities on multiple stock exchanges. This is to obtain exposure to new markets, obtain foreign debt and equity capital for growth and expansion, improving customer recognition, increasing publicity about the firm, having materials and technology and looking to reduce possible political costs (Gray 1995). Prior research argues and concludes that firms competing for foreign resources tend to expand their financial and accounting disclosure (Zarzeski 1996). This expanded disclosure is assumed to reduce resource providers' uncertainty about transactions with the firm and, in turn enable the firm to obtain resources at lower cost. Choi and Levinch (1991b) argued that diversity in accounting reporting (measurement, presentation, and disclosure) affects capital market participants. In an extensive survey of capital market regulators and rating agencies, almost one-half of



the respondents stated that their capital market decisions were affected by accounting diversity. In the absence of common accounting principles and disclosure practices, analysing foreign financial statements is difficult for investors.

Chamisa (2000) pointed out that the international accounting harmonisation objective is important for developing countries because of their significant reliance on inflows of foreign capital to finance economic and industrial developments. This argument is clearly relevant to the Jordanian economy which shows significant dependence on the international institutions for funding 'see Chapter Two—Jordanian Economy Development'.

An alternative means of listing on multiple stock exchanges is by producing multiple financial statements to comply with the securities laws and host country GAAP. This however could be a very costly process to the firm and confusing to the financial markets, and may lead to sub-optimal resource allocation for both the firm and local markets (El-Gazzar 1999).

Harmonisation of accounting standards at the international level is rapidly gaining momentum due to the growth in capital markets spurred by technological advances in communications and gradual deregulation of national capital markets. The major players promoting harmonised standards are two international bodies: the International Accounting Standards Committee (IASC) and the International Organisation of Securities Commission (IOSCO) (Hora 1997). Sharpe (1998); and Street et al. (1999) argued that the benefits of international accounting standards include the reduction of investment risks and cost of capital worldwide, the lowering of cost arising from multiple reporting, the elimination of confusion arising from different measures of financial position and performance across countries, the encouragement of international investment, and the more efficient allocation of saving worldwide. IOSCO is playing a major role in adopting IAS globally by encouraging its member stock exchanges to recognise IAS and by advising the IASC on the probable acceptability of standards (Thorell and Whittington 1994).

As a consequence, it could be argued that complying with IAS will likely to increase substantially the amount of cross-border financing which means economies become

more and more inter-dependent. In this regard, Street et al. (1999) reported in his empirical study that with the revision of IAS 8, IASC guidelines on extraordinary items are in some instances stricter than national requirements. Illustrative of this scenario, in its 1996 and 1995 financial statements prepared according to the GAAP in Finland, one company from his sample reported discontinued operations as extraordinary items on the 1996 and 1995 profit/loss statements. In its 1995 profit/loss statement, the company also reports the cumulative effect of a change in accounting principle as an extraordinary item. However, the profit/loss account prepared according to IAS includes no extraordinary item. Such deviation between national guidelines and IAS can be confusing for users of financial statements, decrease substantially the amount of cross-border financing and illustrate the need for harmonisation of standards.

In addition to the previous discussion, it has been argued that in an efficient global market, if the inherent reliability and timeliness of accounting information is questionable, investors and creditors will impose higher costs of financing on companies providing misinformation. According to Al-Issa (1988); Abu-Nassar (1993); and Abu-Baker (1995) the reliability and timeliness of accounting information in Jordan is questionable.

### **3.6.2 Relevance of IAS for Developing Countries: the case of Jordan**

It has been argued that IAS are not appropriate for all developing countries because of their differences socially, culturally and politically (Briston 1978; Perera 1985; Samuels and Oliga 1982). However, it has to be mentioned that all of these studies investigate countries that had radical change from communistic to capitalistic economies.

Briston (1978) argued, in short, there is a fact that developing countries are an amorphous and heterogeneous group. Therefore generalising a conclusion by saying IAS irrelevant for developing countries is a great danger. Samuels (1990); Samuels (1993); and Samuels and Oliga (1982), who oppose the wholesale adoption of the IAS, argue that accounting professions in developing countries should try to assist in designing reporting systems that are the most useful for economic decision making



within the country, rather than trying to persuade the country to adopt systems that are needed for international trade and business. It is possible the two can be developed simultaneously but the latter should not be seen as a substitute for the former.

According to Samuels (1993), the adaptation of IAS is an example of an attempt to develop a system that satisfies both the development of locally relevant standards while adopting foreign systems. Perera (1985), who more vehemently argues against the adoption of these standards, stresses that the available evidence suggests that the IASC standards have not been able to make any significant impact upon accounting practices of developing countries. The IASC standards cannot be expected to be successful in developing countries particularly for two main reasons, (a) they are based on experiences which are totally different from those found in developed countries, and (b) lack of relevant standards is only one of several problems in the field of accounting in developing countries, for example, weak financial management accounting systems in business enterprises, inadequate accounting knowledge for primary users of accounting information, weak professional control, deficiencies in education and research are some of them.

Cairns (1997) argued, on the other hand, that it is increasingly apparent that the different economic, social and legal considerations which have influenced national accounting do not necessarily result in different accounting and that countries are reaching the same answers irrespective of their different cultural backgrounds (or reaching different answers in spite of their similar cultural backgrounds). The adoption of the IAS is supported by many researchers 'see for example Aitken and Islam (1983); Turner (1983); Merei (1985); Belkaoui (1988) and Cairns (1990)'. They argued that the rationale behind such an adoption strategy may be to (a) reduce the set-up and production costs of accounting standards, (b) join the international harmonisation drive, (c) facilitate the growth of foreign investment which may be needed, (d) enable its profession to emulate well-established professional standards of behaviour and conduct, and (e) legitimise its status as a full-fledged member of the international community.

As it can be clearly seen, Jordan suffered from the lack of experience in developing



national GAAP, an acute shortage of financial and manpower resources and lack of legal procedures for financial disclosure 'see sections 3.2, 3.3, 3.4 and 3.5'. This situation could be generalised for most of the developing countries who implementing the IAS as an appropriate alternative to bridge the gap and avoid paying an expensive price for developing a national GAAP. In this regard, Ashbaugh (1997) provided evidence on why firms adopt IAS. She found in her empirical study that IAS is more restrictive with respect to accounting measurement choices in 16 of the 17 countries she examined and required more disclosures than Foreign-GAAP in every country, suggesting that firms adopting IAS were meeting higher recognition and disclosure standards than required under their domestic GAAP. More importantly, Ashbaugh also compared foreign firms that adopt IAS to those that choose Foreign-GAAP using a logit analysis. She found that the probability of adopting IAS was higher for firms in countries with lower disclosure requirements, as it is the case in Jordan, and where IAS more severely restricts their measurement choice, after controlling for firm size, the number of markets in which the firm is listed, and future equity offerings, suggesting that these firms adopt IAS to improve their disclosure.

Several academic accountants argue that IAS is irrelevant for developing countries because of the size and dominance of the public sector (Briston 1978; Perera 1985; Samuels and Oliga 1982). However, in Jordan this situation has been changed significantly during the recent years toward privatisation. The private sector has already taken over the businesses 'see Chapter Two— section 2.5'. Thus, this argue does not hold for Jordan. Furthermore, the argument may not be valid especially in the absence of empirical evidence. It can be seen that in a country like UK the public sector represented by the National Health Service (NHS) is playing a significant role. In Switzerland there are significant public sector owned enterprises. In these countries the public sector operates as a private business making a return on capital which means that the IASC standards maybe relevant.

In capitalist economies, an active capital market is essential for allocating resources and promoting economic growth. A prerequisite for any capital market is confidence that prices are fair. Fair prices can only come about if both buyers and sellers are equally well informed. It could be argued that IAS provides this information and at



low cost to the Jordanian economy, an issue which will be investigated empirically in this study.

Therefore, there is general agreement that useful accounting reports and appropriate accounting and auditing standards are essential for the development of the capital market and as a result for the economy itself (Mahon 1965; Scott 1968; Staking and Schulz 1999). Jordan, on the other hand, never had a system for producing its own national GAAP. Moreover, neither the Companies Acts nor the Amman Financial Market Laws specified the accounting standards to be applied by Jordanian companies. The Jordanian Association of Certified Public Accountants (JAPCA), however, recommended the adaptation of IAS in 1990. But, the JAPCA did not have the legal power to force Jordanian companies to follow its recommendations. The Companies Law No.22 of 1997 and Securities Law No.23 of 1997 required from companies under their supervision to adopt the IAS as the basis for Jordanian accounting practices. Furthermore, the Securities Law adopted international auditing and performance evaluation standards for all entities falling under the supervision of the Security Commission ‘see Sections 3.2 and 3.4’.

In addition, since 1988 Jordan is one of the IASCs member developing countries which have experienced significant change in its economic strategy and policies. This has been achieved by signing different open trading agreements such as the free trading agreement with EU and the USA ‘see Chapter Two– section 2.5’. For these changes in capital markets and trade to happen, reliable accounting is required. Given that the accounting profession in Jordan is still in the early stage of development and therefore is incapable of developing its own standards within a reasonable time period, it suggests that IAS should be adopted. This would enable the accounting profession in Jordan to concentrate on more fundamental matters such as disclosure of financial information, valuation methods, poor internal control, lack of management accounting concepts, incomplete and inaccurate late records, un-auditable systems and lack of comparability of financial statements. The disclosure requirements were weak (e.g. annual financial statements were delayed, the role of financial intermediaries was weak, and there were no financial analysis and research).

### **3.7 Summary**

As it is mentioned in the beginning, the amount of information disclosed by companies in an economy depends on the level of development, the legislation in force, the development of the accounting profession and the existence of a sophisticated financial market. In other words, required disclosure is laid down by statute, professional regulations and the listing requirements of stock exchange. Therefore, the extent to which companies comply with legal and regulatory requirements depends on the strictness or laxity of the government, professional and other regulatory bodies. The Chapter, therefore, explores the role of legislation, the profession and the Jordanian financial market in shaping and influencing the current financial reporting practices of public shareholding companies in Jordan in order to examine the need of adopting IAS.

It can be argued that before 1997, the legal and regulatory framework and financial reporting in Jordan was very limited. The Companies Act 1964 and 1989 did not mention of any specific disclosure requirements with regard to the contents of financial statements. There were no specific legal requirements existing as to the form and contents of such statements beyond the requirement that they must prepare according to GAAP (e.g. Companies Act did not provide any regulations for depreciation and inventory valuation), which were not themselves defined by law. Companies Act, therefore, were very limited in scope and it expressed in loose, in general terms, limited content and coverage. The Companies Act 1989 required companies to prepare an annual report, including a profit and loss account and balance sheet, with comparative figures and explanatory notes. Jordanian companies also published a statement of changes in financial position annually before 1995 and the cash flow statement after that year, although neither statement was required either by the Companies Act or by the Amman Financial Market Law. As a consequence of the Jordanian economy development, a new Companies Act has been published (Companies Act No.23 of 1997) requiring the financial statements to be prepared based upon the accounting standards adopted internationally.

Currently, Income Tax Law has very limited requirements concerning income measurement and asset valuation methods. The law requires certain types of



companies who practise their activities in Jordan to prepare their records on the basis of the Generally Accepted Accounting Principles that are proved by the specialised authority

Furthermore, before 1997, Amman Financial Market Law could be seen as lax, vague and loose concerned only with shareholders and investors and discussed the disclosure of information in general terms. In addition, the few requirements were concerned more about the prevention of insider trading than the provision of information in companies' reports. In this sense, the AFM could be described as an unregulated market in which listed companies were not subject to any stringent disclosure requirements. The law did not differentiate between the process of the exchange of securities and the process of controlling and regulating the market. Securities Law No.23 of 1997, therefore, adopted IAS, international auditing and performance evaluation standards for all entities falling under the supervision of the Security Exchange Commission (SEC). Moreover, the new law specified requirements relating to the content of a company's annual report.

Finally regarding the accounting profession in Jordan, the auditing profession had been deeply influenced by British rules and principles since the twenties and thirties. In the last few years the American auditing bases and principles have affected the auditing. It can be seen, moreover, disclosure requirements are generally lacking details, very limited and not specific. Greater effort and effectiveness, therefore, had been achieved by the JACPA adopting pioneering steps towards the more adopt global approaches of accounting and auditing standards in Jordan effective from 1990. Therefore, it could be said that in spite of the fact that JACPA had not the legal power before 1997 to enforce its requirements, its adoption of the IAS in 1990 was the only guide to the accounting practices to be adopted by Jordanian companies before 1998, when the new Companies Act No.22 of 1997 and Securities Law No.23 of 1997 have become effective. The accounting profession, on the other hand, nowadays has started to play an important role in influencing the reporting practices of companies supported by the Companies Act and the Securities Law. However, this power for the accounting profession might need to be expanded in order to make the association more involved in developing the financial reporting in the country.

In conclusion, it can be clearly seen that the accounting problems in Jordan relate to disclosure of financial information, valuation methods, poor internal control, lack of management accounting concepts, incomplete and inaccurate late records, un-auditable systems and lack of comparability of financial statements highlighted the necessity of adopting the IAS.



## **CHAPTER FOUR**

### **LITERATURE REVIEW**

#### **4.1 Introduction**

As the first objective of this study is to investigate the impact of IAS on extent of disclosure, this chapter therefore will review the literature concerning disclosure practice in compliance with IAS in both; developing and developed countries. Moreover, since the extent of disclosure is varied among individual companies, another objective of this study is to examine the impact of economic entity factors known as company-specific factors on extent of disclosure. The aim in this chapter, therefore, is to provide a review of the relevant literature. More specifically, this chapter will review studies that examined the impact of company-specific factors on disclosure practices adopted by companies. In addition, as the financial consequences (systematic risk, unsystematic risk, risk premium, cost of equity capital, and share price volatility) are one of the major issues in this study to be investigated, this chapter will review studies that explored fully or partly these aspects in both developed and developing countries.

Such a review helps to identify gaps in the literature, which this study aims to address. It may also help to establish a structure for the current study and identify findings of previous studies relevant to the study being undertaken. In addition, analysis of previous studies assists in determining an appropriate research methodology.

#### **4.2 Review of empirical studies concerning disclosure in compliance with IAS**

A number of studies have been carried out in last three decades to evaluate directly or indirectly the impact of IAS on developed and developing countries. Some of the notable ones are reviewed below in chronological order.

**Nair and Frank (1981)**

In this relatively early study, Nair and Frank surveyed the effect of IAS 1-10 on the accounting practices of 37 countries, a majority of which were from the developing countries by using the Price Waterhouse (PW) surveys published in 1973, 1975 and 1979. They analysed the data (i.e. changes in distribution of countries among categories) by employing the non-parametric Friedman's Analysis of variance test. Based on their findings, their overall conclusion was that:

*"The period of the IASC's existence has coincided with a growing harmonisation of accounting standards. This association between the two is strengthened by the fact that many of the topics on which the IASC has issued pronouncements are those on which the authors observe harmonisation" (P.77).*

### **Evans and Taylor (1982)**

With the aim of determining the impact of the IASC standards on financial reporting in member nations, Evans and Taylor studied compliance by large corporations in France, Spain, UK, USA and West Germany with the main requirements of five IAS (2,3,4,6 and 7) over six years. They gathered the data from the analysis of annual reports of 9-10 companies from each country for the period 1975-1988 (i.e. the period when the five IAS were introduced) and analysed them using percentages in respect of extent of compliance per country for each year. They reported that:

*"The IASC has had very little impact on the accounting practices of the countries surveyed. Except for a few instances, a country following a particular method prior to promulgation of an IASC standard continued to follow the same practice after the standard's issuance".*

Tay and Parker (1990) questioned three aspects of this study: Firstly, the use of English-language version of annual reports, choice of countries and companies sampled. This criticism was based on the possibility that they could have been abridged or the financial statements restated on bases other than those used in the original statements. Secondly, they questioned the choice of countries on the ground that no justification was made for elimination of other countries that were also founding members of the IASC. Thirdly, they questioned the choice of companies sampled on the basis that they were not matched. Further criticism of this study came from Nobes (1996), who pointed out misinterpretation of certain



findings in the study, claiming that this paper illustrates some typical problems with some research in international accounting.

#### **McKinnon and Janell (1984)**

This study analysed direct and indirect influence of the IAS on accounting practices of countries by looking at the three topics contained in the IAS: depreciation, equity method and currency translation. Using the Price Waterhouse (PW) 1979-survey results, the authors first examined existing financial reporting practices with respect to the said issues within 64 countries covered in the PW survey to determine if practice confirmed with IAS. They then made a country-by-country analysis to answer the question *“Has practice changed to reflect the new standard, or does practice confirm for other reasons?”* (P.22). They concluded, *“The IASC has not succeeded in changing existing standards or setting new standards.”* This study, like other similar studies that used the same data source (i.e. the PW survey) was criticised on the ground that original PW survey data contain errors (Nobes 1981; Nobes 1996).

#### **Doupnik and Taylor (1985)**

This study attempted to assess compliance of countries, particularly western European countries, with the first eight IASC standards over the years 1979 and 1983 and across groups of countries (e.g. EU members, non-EU members, etc.). For data on accounting practices in 1979, they analysed the PW 1979 survey and for the year 1983 they conducted their own questionnaire to PW offices world-wide, receiving responses from 50 countries 16 of which are located in Western Europe. The questionnaire contained 53 propositions representing measurement procedure and disclosure requirements recommended in the first eight IAS and there were five response categories with respect to each issue, ranging from required to not permitting. Doupnik and Taylor, having weighted each response category, calculated average scores for countries as well as the groups of countries. They used non-parametric statistics to differentiate groups of countries. No statistical test was employed to test the significance of changes in level of compliance over years. Their overall findings seem to support the hypothesis that many differences still exist in western European accounting practices, though some increased compliance with the IAS was found. The other two noteworthy

specific findings reported in this study are that EU member countries' level of compliance with the IAS is higher than that of non-EU members. Moreover, EU countries were more inclined to conform to propositions related to disclosure requirements than those related to measurement practices. Findings of this research, however, were disputed by Nobes (1987) who argued that the data was too weak to support the detailed numerical analysis, descriptions and conclusions of Douppnik and Taylor.

#### **Taylor, Evans and Joy (1986)**

This study sought to answer the question of whether or not the comparability and consistency of international accounting reporting practices for five IAS (1, 2, 3, 4 and 7) have improved significantly since the standards were issued. They evaluate comparability and consistency before and after the IAS were issued based on the results of a questionnaire that was directed to accountants in 40 countries. The paired-samples t-test was used to test the significance of differences in comparability and consistency before and after the IAS were issued. The researchers concluded that the IASC, through its international accounting standards, appears to be succeeding in improving the comparability and consistency of international accounting reporting practices.

#### **IASC Surveys (1988 and 1997)**

The IASC published two surveys to evaluate the use and application of the IAS. IASC survey in 1988 was based on the responses to a questionnaire sent to IASC member bodies in 70 countries. In the questionnaire, the IASC member bodies were asked to indicate 1) the extent to which national requirements to practices conform with each of the first 25 IAS and 2) whether financial statements issued to external users generally conform, in all material aspects, with IAS and, if so, whether they disclose this fact. On the bases of a descriptive analysis of questionnaire results, the IASC reported that in the majority of countries' national requirements or practices conform with 23 of the existing 25 IAS and that the financial statements of the majority of private-sector and public-sector trading enterprises conform in all material respects with the IAS, but disclosure of such conformity was found to be rare.



The IASC carried out its second survey in 1996 and published only the results of a preliminary analysis of the responses in 1997. The main findings in the survey are that 56 of the 67 countries either look directly to IAS as their national standards or develop national standards based primarily on IAS. In only 11 out of 67 countries are national standards developed primarily without reference to IAS. An important point to note is that the majority of countries found to be using IAS as national standards in this study are developing countries, which will be discussed in more details in the following section. The survey also found that IAS are accepted by many stock exchanges, including London, Frankfurt, Zurich, Luxembourg, Thailand, Hong Kong, Amsterdam and Rome.

An important limitation has to be mentioned in both surveys. In each survey the questions asked related to entire standards rather than to specific issues inside each standard. Accounting requirements in a country may conform to most of a standard while specific parts are not conformed with at all (Robert et al. 1996). Furthermore, the questionnaire surveys, which were completed by the member bodies of IASC, may be subject to some “wishful thinking bias” (Robert et al. 1996; Saudagaran and Meek 1996). To gain a full picture of the extent of which companies or countries comply with IAS far less aggregated data must be employed. It is necessary to know the level of compliance with specific rules or issues rather than compliance with overall standards.

### **Nobes (1990)**

In this study Nobes examined the direct effects of the IASC standards on listed USA corporations by looking at those corporations' compliance with IAS in three areas of disclosure where there were IASC requirements but no USA GAAP. The areas chosen in this study were IAS 3's requirement to show minority interest in the consolidated balance sheet, IAS 4's requirement to show lives of depreciable assets and rates of depreciation, and the disclosure requirements of IAS 22 addressing the “pooling” (e.g. amount of assets transferred in pooling, effective date of pooling, etc.). Having gathered data with respect to each case from the



annual reports of listed USA corporations,<sup>1</sup> Nobes first examined whether or not a significant of sampled USA corporations were complying with the specified requirements of the IAS. In each case, compliance by a sample of companies was found to be significantly less than 50%. For minority interest disclosure and pooling disclosure, he carried out further analysis to determine if there had been moves towards compliance since the introduction of relevant IAS. In both cases, his analysis revealed that there were no such movements. Nobes concluded that

*“The results of the study provide sufficient evidence to accept the hypotheses that differential requirements of IAS are not obeyed by most listed companies and IAS have no direct impact” (P.49).*

### **Purvis, Gernon and Diamond (1991)**

In their empirical analysis of compliance with IASC standards pre-E32 (pre the IASC Comparability Project<sup>2</sup>) for EU members, the researchers grouped countries into three types: un-standardised; independent of the IASC; and dependent upon the IASC. Greece was found to fall into the un-standardised group while all other EU members (with the exception of Luxembourg and Portugal which were not included in this study) fell into the independent group. This, however, does not mean that the overall level of congruence with IAS is necessarily low. The lowest degree of congruence was that of Denmark with a ‘conformity index’ of 60% followed by France at 76%, while the other EU members all followed at least 80% of the IASC standards. While this clearly suggests that there is a relatively high level of congruence between the IASC and EU, these results must be treated with a degree of caution. That is because the results relate to the position before the Comparability Project. Therefore, depending upon the specific options followed by companies, the degree to which companies follow those practices permitted by

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<sup>1</sup> Data with respect to the first two areas were gathered from the 1985 annual reports 20 of 200 randomly chosen listed USA corporations (1976 annual reports of 15 of companies that complied with IAS 3 in 1985 were further analysed). With respect to the last area, data were collected from the 1983, 1984 and 1985 annual reports of 61 listed USA corporations.

<sup>2</sup> While IAS issued during the 1970s and 1980s were recognised to have made some progress towards international harmonisation, by the late 1980s the performance of the IASC was increasingly criticised because of the flexibility of the IAS and a continuing lack of comparability across country borders. An important agreement in 1988 between IASC and the International Organisation of Securities Commission (IOSCO) has been developed to find a way to allow company to list its securities in any foreign stock market on the basis of one set of financial statements conforming to IASC (Cairns 1995). The IASC responded with its Comparability Project defined in its Exposure Draft E32, Comparability of Financial Statements IASC (1989) aiming to improve disclosure requirements and reduce the number of alternative accounting treatments then permitted so as to enhance the credibility and acceptability of IAS by the IOSCO. During this project the IASC revised ten IAS, effective 1995. Additional standards developed and introduced in accordance with the agreement with IOSCO to complete a core set of IAS by 1999.



the Comparability Project may be very much lower than these results indicate. Secondly, the data used were those generated by the IASC (1988), which has been criticised as mentioned earlier.

### **Graham and Wang (1995)**

With the specific aim of providing evidence of the influence of IAS on the development of Taiwanese accounting standards, Graham and Wang looked at whether the recently issued Taiwanese accounting standards were conforming with the IAS. In this descriptive, non-statistical study, having analysed 17 recently issued Taiwanese accounting standards for comparability with existing IAS, they updated the information relating to Taiwan found in the 1988 IASC survey to determine if the extent of conformity of the Taiwanese GAAP to IAS had increased since 1988. They found an indication that the Taiwanese GAAP are increasingly in conformity with IAS. The conclusion was that

*“Taiwan considers IAS in the development of its accounting standards and that IAS are applicable to the formation of accounting standards in economically developing countries” (P.149).*

The later remark in this conclusion, however, can be questioned on the ground that an increase in the level of conformity of a developing country's GAAP with the IAS itself does not necessarily indicate applicability of IAS on developing countries because the environment within which accounting develops is not the same in each developing country.

### **Al-Basteki (1995)**

In this study Al-Basteki looked at 1) the extent of voluntary adoption of IAS by publicly traded corporations in Bahrain over 10 years and 2) the factors associated with voluntary adoption of IAS by the said corporations. Data regarding the voluntary adoption of the IAS were gathered from the audit reports of 26 publicly traded Bahraini companies during the 1982-1991 periods. The data with respect of five specific factors (i.e. audit firm, industry type, company size, foreign operation and leverage) were gathered from the 1991 annual reports of the same 26 corporations. A descriptive analysis of the extent of voluntary adoption revealed that the majority of examined Bahraini companies (58%) had adopted IAS in 1991 and the number of companies that had adopted IAS increased during the years 1982-1991 from 5 to 15. Furthermore, the association between voluntary adoption

of IAS and audit firm and industry type were tested through “sample partition” and the other factors were tested using a variety of univariate tests. The results indicated that only external auditors have influenced the IAS adoption/non-adoption decision made by Bahraini publicly traded firms.

An important point to note is that Bahrain did not have national GAAP at the time this research was carried out and almost all companies selected in this study were audited by one of the big international audit firms. Al-Basteki having acknowledged that the findings in his study might not be generalisable to other developing countries as each country has its unique socio-economic environment influence its accounting practices, pointed out a need for further similar studies to be carried out in other developing countries.

#### **Emenyonu and Gray (1996)**

Following the similar methodological approach adopted in their earlier study, in their study in 1992 attempting to evaluate whether or not accounting measurement practices in three EU Member States (France, Germany, and UK), Japan and USA were harmonise as at the end of 1989 in the context of EU harmonisation effort, the researchers attempted in this study to assess the extent to which accounting measurement and associated disclosure practices of large listed companies from the five countries said had become more harmonised internationally since 1973 when the IASC was established. This assessment was made by an examination of 29 key accounting measurements and 17 related disclosure issues as at 1991/1992 and a comparison made with the position as at 1971/1972. Data with respect to each specified issue were gathered from annual reports of 293 sampled companies across the five countries. Like their previous study, they used a chi-square test to assess the significance of changes in accounting measurements and associated disclosure practice over the years 1971-1991. Their overall conclusion was that

*“The impact of efforts to reduce international accounting diversity over the years 1971-1991 has been, in general terms, quite modest” (P.278).*

#### **Roberts et al. (1996)**

Using data from practicing auditors, this study examines how closely the IASC revised standards through the Comparability Project match existing EU financial reporting practices. The study used a questionnaire containing 27 issues for



collecting the data required by directly asking the company or experts who are likely to have detailed knowledge of corporate accounting practices, what actual practices are followed by companies. For each of the 27 issues, respondents were asked to indicate what percentage the organisations in their country followed each of several listed treatments. Listed treatments included, where appropriated: 1) IASC benchmark treatment, 2) IASC alternative treatment(s), 3) other described practices, and 4) an unspecified 'other' category. The study found that while EU financial reporting practices mirror many of the IASC recommendations, there were still considerable differences, both within the EU and between the EU countries as a whole and the IASC.

### **Street et al. (1999)**

This empirical study addresses the extent of compliance with IAS revised during the Comparability Project to which companies claiming to comply with IAS and the nature and significance of measurement and disclosure noncompliance. The annual report of a list of 49 companies around the world most of them from developed countries (France, Sweden, Canada, Finland, Germany and Switzerland) claiming to comply with IAS in 1996 obtained from IASC who has publicised the fact that these companies have stated their voluntary commitment to comply with IAS in late 1996. The selected companies have been chosen after meeting the following additional criteria; a) 1995 sales of at least \$1 billion, and b) they are non-regulated and non-financial industry. The findings reveal significant noncompliance with IAS including: use of Lower of Cost or Market (LCM) method for inventories measurement where IAS 2 allowed to use First In First Out (FIFO), Weighted Average or Last In First Out (LIFO) methods; violation of the all-inclusive requirement for reporting profit/loss and of the strict definition of extraordinary items; failure to capitalise certain development costs; failure to provide all required disclosure for property, plant and equipment, particularly those associated with revaluations; failure to comply with pension disclosure requirements; for companies operating in hyperinflationary economies, failure to restate foreign entities in accordance with IAS 29; and charging goodwill to reserves or amortising goodwill over a period in excess of the 20 year limit. In addition, where compliance with all or most of IAS is indicated in the accounting policy footnote and/or audit opinion, there are notable examples of



noncompliance with the measurement and disclosure requirements of individual IAS in practice. The researcher concluded that the degree of compliance by companies claiming to comply with IAS is very mixed and somewhat selective. Noncompliance, as evidenced by the current research, is very problematic for the IASC as it strives to achieve an International Organisation of Securities Commission (IOSCO) endorsement and as IAS Revised becomes effective for 1999 financial statements, therefore.

### **Chamisa (2000)**

In this study the researcher investigated the contradiction between the considerable increase in the number of accounting professional bodies in developing countries who are adopting the IASC standards against the backdrop of academic arguments suggesting that the IASC standards are irrelevant and/or even harmful to these countries. This contradiction and the question of the relevance of IASC standards to developing countries were evaluated and explored using Zimbabwe as a case study. The study examined and evaluated further the relevance of the IASC standards to developing countries, measuring the extent to which corporations in Zimbabwe conform to the IASC standards, and measuring the impact of the IASC standards on the accounting and reporting practices of enterprises in Zimbabwe. To determine the level of compliance and the impact of the IASC standards on the accounting and reporting practices of listed Zimbabwe companies, four published annual reports (one each for 1975, 1980, 1985 and 1990) were collected for 40 listed companies covered all sectors and a disclosure index was prepared based on the requirements of IAS 1 to 22. The results of both compliance level and the impact of the IASC standards on the reporting practices of listed Zimbabwe companies appeared to be significant and seemed to buttress the conclusion that the IASC standards are relevant to Zimbabwe and similar capitalistic developing countries where the private sector dominate the economy and the capital market exists. Chamisa concluded by arguing that these results suggest important implications for the IAC's standardisation program.

In short, it can be argued that number of studies were undertaken to evaluate the impact of the IAS on various countries. The results of these studies, however, do not provide conclusive evidence regarding the influences of the IAS. For example,



while Ahmed (1996); Chamisa (2000); Nair and Frank (1981) found an indication of the success of the IASC, the results of studies by Doupnik and Taylor (1985); Evans and Taylor (1982); Purvis et al. (1991); Robert et al. (1996) provide little indication of the impact of the IAS in various countries. Nobes (1990); Street et al. (1999), similarly, found no evidence of such impact. An interesting point to note is that direct or indirect evidence founded as regards the influence of the IAS are generally those studies that were concerned with developing countries (Al-Basteki 1995; Graham and Wang 1995) or covered mainly developing countries (Nair and Frank 1981).

#### **4.2.1 The impact of IAS on developing countries**

Despite the substantial arguments that have questioned the suitability of the IAS on developing countries ‘see Chapter Three – section 3.6.2’, it has been claimed that the work of the IASC has had an impact on accounting in developing countries (Iddamalgoda 1986; Nobes and Parker 1995) due to a number of reasons as discussed earlier in the previous chapter.

One of the indications regarding the influences of the IAS on developing countries is the adoption of the IAS by a number of developing countries. For instance, Purvis et al. (1991) in an empirical analysis of compliance with IASC standards, grouped countries into three types: un-standardised, independent of the IASC and dependent upon the IASC. A total of 11 countries were found to fall into the dependent upon IASC group, all of which are developing countries. Some further indication regarding the use of IAS by developing countries can also be seen in the results of a survey carried out by the IASC in 1997 after grouping countries into three types: IAS used as national standards, IAS used as national standards but national standards developed for topics not covered by IAS and IAS are used directly as national standards but, in some cases, may be modified for local conditions. All of the 9 countries where IAS were used as national standards and all of the 14 countries where IAS were used directly as national standards but, in some cases, modified for local conditions were “developing countries”.

Chamisa (2000) reviewed the historical development of the IASC influence by arguing that the membership of the IASC has increased rapidly over the years. The IASC was set up in 1973 at the initiative of Henry Benson, the British chartered accountant, by the professional accountancy bodies of nine countries containing 16 members: Australia, Canada, France, Japan, Mexico, the Netherlands, the United Kingdom and Ireland, and the United States. By January 1983, it had 88 members from 64 countries, by January 1992, there were 105 members from 78 countries, and by September 1999 there were 143 members from 104 countries (Nobes 1999). The proportion of IASC members from developing countries shot from 6% in 1973 to about 84% by September 1999. The majority of the IASC members from developing countries have adopted the IAS. In addition, the number of professional accounting bodies from developing countries joining the IASC and adopting its standards has increased despite overwhelming academic arguments suggesting that the IAS are irrelevant or even harmful to these countries (Briston 1978; Perera 1985; Perera 1989; Samuels and Oliga 1982).

Furthermore, there is a rule that the IASC Board who has the power in voting, issuing and approving a new standard should include representatives of not less than three developing countries.<sup>3</sup> One of the IASC objectives as mentioned by Cairns (1997), moreover, is to ensure that IAS meet the financial reporting needs of developing countries and newly industrialised countries, such an objective might contribute to attract more developing countries in adopting the IAS.

An interesting argument has to be mentioned, however, is that the founding date of the IASC is very significant, for on 1 January 1973, the UK joined the European Union. Many people believe that the IASC was set up primarily at the instigation of the British accountancy profession as a counterweight to the harmonisation ambitions of the European Commission; in 1971 this body had already issued its proposed draft of an accounting directive, which largely reflected German law and practice. The British accountancy profession was horrified at the thought of being obliged to accept alien accounting principles

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<sup>3</sup> Under the IASC rules, a three quarters majority of the board (13 votes out of 16) is necessary for the issue of a standard.



consequent on Britain's entry into the European Union. It is claimed that the hidden agenda of the IASC was to issue standards that reflected Anglo-American practice, which the UK (and similarly minded countries) could use as ammunition in its endeavors to stop the European Union from imposing accounting rules that conflicted with British practice (Hopwood 1994). To extend the Hopwood argument, Flower (1997) argued that the year 1995 witnessed two events which over the next few years are likely to have a major impact on financial reporting at the international level: 1) the agreement between the International Organisation of Securities Commission (IOSCO) and the IASC which envisaged that the IASC standards would be acceptable by the major stock exchanges for the accounts of foreign companies, and 2) the announcement by the European Commission that it proposed to allow European multi-national companies to use the IASC standards. Flower added that although it is, as yet, too early to forecast, present indications are that IOSCO/IASC agreement will not lead to a major change in the relationship between America and the rest of the world; the American will continue to apply US GAAP in splendid isolation. But the partnership between the European Commission and the IASC may well become the most significant force in international accounting. Flower ended his argument by saying that the major problem is identified as being that the IASC is dominated by the Anglo-American approach to financial reporting. In his second article which came as a result of strong objection by Cairns (1997) against the idea of IASC being dominated by Anglo-American approach, Flower (1998) claimed that his previous work made two major propositions: 1) that, in the past, the IASC had been dominated by the Anglo-Americans' and has followed their approach in financial reporting, and 2) that, in the future, there may be a realignment of the forces that govern financial reporting at the international level.

In spite of the above argument by Hopwood and Flower, an interesting point raised by Belkaoui (1992) is that

*“some of the developing countries give more credence to the IASC...than do some of the developed countries that have a dominant influence in the preparation of such standards” (P.491).*

Indeed, the results of the above reviewed study by Nobes, who found that IAS have no direct impact on listed USA companies, Al-Basteki (1995), who found that companies in Bahrain have increasingly adopted voluntarily the IAS over the



years, and Street et al. (1999), who found that significant noncompliance with IAS for companies claiming compliance with IAS tend to support such a view. Furthermore, among the above reviewed studies, unlike the study by Doupnik and Taylor (1985); Evans and Taylor (1982); Purvis et al. (1991); Robert et al. (1996), which were concerned exclusively with developed countries and found little indication of the impact of the standards issued by the IASC, the study by Nair and Frank, covered 37 developed and developing countries a majority of which were developing countries, and also the studies by Ahmed (1996); Al-Basteki (1995); Chamisa (2000); Graham and Wang (1995) found an indication of the success of the IASC. According to Iddamalgoda (1986), the evidence of success found by Nair and Frank study may be primarily attributed to the adoption of IAS by developing countries.

#### **4.2.2 Abstract and evaluation**

It could be argued that there have been substantial efforts to increase global standardisation. The primary generator of such efforts has been the IAS. The IASC, which is an independent private-sector body, has issued several IAS since 1973 addressing most of the important issues of corporate financial reporting, including accounting disclosure 'see Appendix 2'. Despite the lack of enforcement power, there are arguments that the IASC has had some success in getting incorporated into the national standards of certain member countries, particularly developing countries. The results of empirical studies that attempted to evaluate directly or indirectly the impact of IAS on various countries, some of which were reviewed in this chapter, however, provided mixed evidence. Among the reviewed studies that looked at compliance with or observance of IAS at a point in time or over the years in various countries, the results of studies by the Al-Basteki (1995); Chamisa (2000); Graham and Wang (1995); IASC (1997a); IASC (1988); IASC (1997b); Nair and Frank (1981) provide a strong indication regarding the impact of the IAS. The results of relatively early longitudinal studies by Doupnik and Taylor (1985); Evans and Taylor (1982); McKinnon and Janell (1984) provide little evidence and finally the studies by Nobes (1990); Street et al. (1999) provides no evidence regarding the impact of the IAS.



On the other hand, use and/or adopting of the IAS by a number of developing countries as evidenced in the studies by the IASC (1997a); IASC (1997b); Purvis et al. (1991) as well as the results of studies that considered influence of the IAS on a developing country (Ahmed 1996; Al-Basteki 1995; Chamisa 2000; Graham and Wang 1995; Nair and Frank 1981), tend to support the claim that the work of the IASC has had some impact on accounting in developing countries. Wallace (1987, P.223) pointed out that developing countries are not a homogenous group, which makes a generalisation about the impact of the IAS on accounting and disclosure in developing countries meaningless until we understand the impact of such factors on accounting in many of these countries. Developing countries show diversity in many respects; 1) the group includes countries in different geographical locations, 2) the group includes countries with different historical developments and economic philosophies, and 3) developing countries include countries at different stages of economic development. This highlighted the diversity among developing countries making a generalised conclusion regarding the impact of the IAS on accounting and disclosure misleading. Jordan has been considered as a developing country and so far no empirical study was undertaken to evaluate the impact of all relevant IAS on the extent of disclosure in compliance with these standards in this country.

The literature review section regarding the impact of IAS on extent of disclosure in compliance with IAS revealed that researchers attempted to investigate the impact of international harmonisation/standardisation efforts by applying a variety of methods. One of the research methodologies commonly employed by previous researchers involved assessing the impact of international harmonisation/standardisation efforts on accounting and disclosure practices in various countries, and also adopted in this study, is examination of companies' compliance pattern with legislation or standards issued by international organisations (Chamisa 2000; Doupnik and Taylor 1985; Evans and Taylor 1982; Nobes 1990; Street et al. 1999). In this study, therefore, the extent of disclosure in compliance with IAS (the dependent variable) will be measured by an unweighted index based on an extensive list of disclosure items representing the IAS disclosure requirements and taking into account the changes over the period under consideration for such requirements. The IAS, however, have been modified and



improved over the years, which required from the researcher to develop four disclosure indices containing different number of items considering such improvements and changes, which calculated using a dichotomous procedure. The first disclosure index covering the period 1995-1997 has 137 items, the second disclosure index covering the year 1998 has 186 items, the third disclosure index covering the year 1999 has 221 items, and the fourth disclosure index covering the year 2000 has 219 items.

### **4.3 Review of empirical studies concerning the impact of company-specific factors on the extent of disclosure**

Although a number of studies have been carried out since early 1960s to evaluate the impact of company-specific factors on disclosure on developed and developing countries, quite a few empirical studies investigated that impact in compliance with IAS. There is a considerable indeterminacy, however, on the question of which variables are capable of explaining the differing disclosure levels revealed by the annual reports of various enterprises in different countries. Some of the previous studies are reviewed below in chronological order.

#### **Cerf (1961)**

It seems that Cerf has been the first to deal empirically with some of the factors which might influence the adequacy of disclosure. He studied the investment decision process, reviewed the literature on how such decision should be made, interviewed security analysts and examined their reports. On the basis of this research he constructed an index of aggregate disclosure of 31 items, focusing on the information needs of investment analysts, investment decision process, most likely to be found in U.S. annual reports of non-financial firms, review of the literature on how the investment decision should be made, interviews with security analysts. Items included in the index were attached a weight ranging from one to four after reviewing the literature and surveying the user group. Total weights have been given to all items equal to 68. The items included in the index were classified into four categories and were given different weights ranging from 1 to 4. The resulting index, therefore, used to evaluate the sample of 527 U.S. corporate annual reports. A modification was made when items were not



applicable to a specific company. The index score for each company was calculated as a percentage by dividing the actual score a company earned by its maximum expected score. Company-specific factors selected were: asset size, number of stockholders, and listing status. Listing status reflected whether a company's stock was traded on the New York Stock Exchange (NYSE), or other exchanges, as opposed to being in the Over The Counter (OTC) market.

Cerf used class means and least square regression and found that there was a positive association existing between the disclosure index scores and the three company characteristics. In this study, assets size was found to be the most significant explanatory variable. This early study, however, was considered to be a major advance in applying the scientific approach to disclosure in corporate annual reports (Cooke 1989a, P.18). His method was modified, developed and applied to other time periods and/or countries. Despite that, Cerf's study has a number of limitations. First, it was confined to listed companies. In addition, it considered only one user group and the number of the items of disclosure included in the index was small. Furthermore, even though the interdependence between some of the explanatory variables was noted, no formal test for multicollinearity was undertaken.

### **Singhvi (1968)**

This study attempts to identify some of the characteristics of corporations associated, namely: size, profitability, audit firm, type of management, and number of shareholders with the level of aggregate disclosure in annual reports for Indian corporations. Such reports were selected for a sample of 45 listed industrial corporations over the period 1963-1965. To evaluate the quality of information disclosed in annual reports, an index of disclosure was used identical to that developed originally by Cerf (1961). It consisted of 31 items. Weights ranging from one to four were assigned to the items as indicated by the various sub-committees of the Committee on Corporate Information, and also indicated by the security analysts interviewed in India. To test the significance of the relationship between the extent of disclosure and the various characteristics, chi-square test of independence of principles of classification was used.

The study concluded that the companies, which disclose inadequate information in annual reports, are likely to be small in size, less profitable (as measured by rate of return and earnings margin), audited by a C.A. firm of any size, and managed by Indian management. The statistical analysis shows that the relationship between the extent of disclosure and size, profitability, and type of management was significantly positive. Singhvi argued, however, that adequate and accurate corporate disclosure of information is important to allocate economic resources efficiently in a market economy and to enable investors to make investment decisions, which will safeguard their interest against fraudulent securities practices. The extent of corporate disclosure influences the quality of investment decisions made by the investing public.

### **Singhvi and Desai (1971)**

In this study, Singhvi and Desai attempted to improve upon and extend the work done by Cerf. They modified Cerf's index by dropping three items which they felt were relevant only to wasting asset type companies and adding six others based on their own research into the appropriateness of Cerf's index. They verified their aggregate index by reference to the Financial World survey of annual reports. Moreover, they made more extensive use of statistical techniques, and added three new company characteristics to the study of non-financial enterprises. In addition, the researcher investigated the impact of extent of disclosure on share price fluctuation of 100 U.S.A listed firms.

Individual tests of the six characteristics indicated that the extent of disclosure in annual reports was positively associated with a company's (1) size (as measured by total assets), (2) listing status, (3) number of shareholders, (4) profitability (as measured by rate of return on net worth and earnings margin), and (5) size of audit firm.

Singhvi and Desai used both univariate (Chi square) and multivariate (multiple regression) tests. The Chi-square test results revealed that there was a significant association between the extent of disclosure and all the variables investigated. The multivariate regression equation gave a coefficient of determination ( $R^2$ ) of 0.434 for the six variables, which means that 43.4% of the variation in disclosure index



is explained by these six variables. However, in this analysis, listing status was the single most important variable, explaining 38.1% of the variation in the extent of disclosure. An interesting point to note is that, unlike the Chi-square test which indicated significant association between extent of disclosure and all six variables, the regression results revealed that only listing status was a statistically significant variable. Moreover, their study also showed that the superior extent of disclosure is related on average with lower security price fluctuations. Singhvi and Desai's findings are in conflict with Cerf's since in the latter; asset size was found to be most significant.

This study was criticised by Moore and Buzby (1972) who questioned the use of an absolute rather than a relative scoring system, usage of Chi-square tests, and lack of formal tests for multicollinearity between the independent variables. They added that these problems in the Singhvi and Desai study research design and statistical analysis preclude a meaningful interpretation of Singhvi and Desai's results. That is, you cannot determine whether the extent of disclosure is associated with size or listing status, or for that matter, any of the other characteristics, based on their results.

### **Buzby (1975)**

Recognising contradictory results in Cerf's and Singhvi and Desai's results with regard to explanatory variables, Buzby undertook a further study to identify whether asset size or listing status was the most important variable associated with the extent of disclosure. He constructed a disclosure-scoring instrument of 39 items based on the needs of financial analysts. Each item in the scoring instrument was then assigned a weight based on the assessments of 131 financial analysts. The researcher selected 44 matched pairs of listed and unlisted U.S non-financial companies and completed a scoring instrument for each company. The companies were matched based on assets size, industrial classification and time of the annual reports covering the years ending between June 30, 1970, and June 30, 1971.

The Wilcoxon matched-pairs signed-rank test was used to test for the listing status effect and the Kendall's rank correlation was calculated for both listed and unlisted samples to examine for the assets size effect. Buzby found that the extent

of disclosure in annual reports is positively associated with the size of a company's assets and not affected by listing status. These results were consistent with Cerf's results, but not with those of Singhvi and Desai. Belkaoui (1978) argued that since the methodology used by Buzby was more powerful on the listing status variable than the methodology applied by Singhvi and Desai, it may be concluded that the asset size variable is the most important one. Cooke (1989a), however, criticised Buzby's matching procedure. Additionally, Cooke questioned the representative-ness of unlisted companies by those listed on the Over-The-Counter market (the unlisted group).

### **Stanga (1976)**

This study reported on the evaluation of a sample of 80 annual reports of US firms with an aggregate disclosure model consisting of 79 identified items from a review of the literature and annual reports of large industrial companies, which were weighted to reflect their importance to the group of financial analysts surveyed. Stanga compared the mean scores of different industry groups and also used multiple regressions for testing the study hypotheses. He used net sales as the size variable rather than total assets and investigated 29 industries to discover if this variable, previously not investigated, had some explanatory value.

No significant association was found between size and the extent of disclosure which was inconsistent with previous studies (Buzby 1975; Cerf 1961). On the other hand, he found that industry type – a variable that had not previously been selected by other researchers – to be a significant explanatory variable, as firms seemed to play “follow the leader” in disclosure. Since he measured size differently, it is not surprising that his results do not agree with the previous studies. However, he did provide us with another probable explanatory characteristic, the industry type.

### **Belkaoui and Kahl (1978)**

Apart from the Singhvi (1968) study, all the studies discussed have focused on the U.S firms whereas Belkaoui and Kahl examined the association between adequacy of financial disclosure and five firms' specific variables (e.g. size - as measured by sales and total assets -, industry type, firm's profitability, firm's liquidity, and



capitalisation ratios) of a random selection of 200 Canadian companies. The aggregate disclosure index was developed based on 30 items of information considered useful for decision-making. The scoring instrument was sent to 200 accountants and 200 financial analysts in order to provide information on the weighting of disclosure items. The mean weight assigned by them was used to evaluate the adequacy of financial disclosure in the corporate annual reports of the sampled companies.

The degree of association between selected company characteristics and the relative disclosure index was made using Kendall's rank correlation coefficient ( $\tau$ ) and ANOVA test were employed to examine association between industry type and disclosure. Findings revealed that a detailed analysis of the categories of moderate and low consensus value items point to the need of a better disclosure policy (extent of disclosure ranging between 0.651 and 0.449). Moreover, by liquidity being the major explanatory indicator of relative disclosure, the company-specific factor size (assets and sales) and industry type were found to be associated with disclosure, while profitability and capitalisation ratios were not and its association was negative. As the capitalisation ratio was a surrogate for the number of stockholders, the observed negative association was contrary to expectation. According to Cooke (1989a), one possible explanation for this contrary result is because capitalisation is not a good surrogate for number of stockholders. The ANOVA test was found to reveal a result consistent with Stanga (1976), i.e. the extent of disclosure varied between industries.

### **Firth (1979)**

The purpose of this study is to investigate the relationship of voluntary disclosure in corporate annual report and three firm-specific characteristics that may have some influence over the level of disclosure in the UK. These three characteristics are the size of the company, whether it is listed on the London Stock Exchange, and the firm accounts engaged in the audit. The research design involved the construction of a list of not statutory items (voluntary disclosure) that could be included in an annual report by reviewing the relevant literature, reviewing those most frequently mentioned in the accounting press as being useful for investors and bankers, reviewing of several company annual reports, and discussing such



issues with various users of accounts in order to refine the list which ended by 48 items. A total of 120 financial analysts working for stockbrokers and investment institutions, which 46 of them replied, were then asked to weight these items in terms of importance. The weighted list was then applied to a sample of annual reports and a disclosure index was calculated for each one. The sample consisted of three groups; 40 manufacturing companies were randomly selected from the largest 120 companies listed on the stock market, 40 companies who were paired with the listed companies on the basis of size and industry type, and 100 manufacturing companies listed on the stock market. The size of the manufacturing firm used ranged from over £3,500 million in terms of capital employed to just under £1 million. The results showed that companies tend to give very little information above what they have to disclose under the Companies Acts. In the case of listing status and audit firm, standard t-test and Wilcoxon matched-pairs signed-ranks test were used which showed significant difference in the level of disclosure in the three groups' means but was not the same case for audit firm factor. In the case of firm size, however, Kendall's rank correlation coefficient ( $\tau_a$ ) for each of the three sample groups were used showing that there is positive association between size and disclosure level for all groups.

### **Courtis (1979)**

The purpose of this study was to report on the findings of an application of the Buzby (1975) 38-items aggregate disclosure index in unweighted form to the 1974 annual reports of the 126 publicly listed companies in New Zealand to measure the extent of disclosure. Several variables, including those examined by Singhvi and Desai (1971), but using New Zealand data instead of U.S.A data as Singhvi and Desai applied were chosen. More specifically, this study examined the extent of disclosure in annual reports of New Zealand selected companies and the association of this disclosure with a company's: annual reports preparation costs, annual report preparation time, annual report pagination, asset size, level of stockholders' funds, sales, number of stockholders, number of employees, number of subsidiaries, number of directors, rate of return on net worth, earnings margin, absolute net income, level of ordinary dividends, public issues of long term debt, percent external equities, access to capital markets, size of audit firm, speed of reporting, industry type, absolute market prices, fluctuation in security prices,



price ranges, dividend pay-out ratios, average monthly share price fluctuation, and speed of reporting.

Using the non-parametric Chi-square test, Courtis found that disclosure was positively related to the seven measures of corporate size, profitability level, as well as to the amount of expenditure and time devoted to annual report preparation. As a concluding remark, Courtis (1986) stated,

*“The influence of corporate size seems to permeate most variables examined and is likely to be dominantly associated with annual report disclosure levels”* (P.41).

In addition, significantly, disclosure levels were found to vary inversely with stock price fluctuation (disclosure levels were negatively associated with fluctuation in security prices and price range, but ambiguous or unlikely association with average monthly fluctuation), thereby contrasting the findings of Singhvi and Desai (1971).

This study was one of the first studies undertaken outside North America and it considered more independent variables than any other studies covered in the review chapter. However, the scoring instrument used in this study was constructed based on US annual report analysis and therefore its usage for New Zealand is questionable. In addition, no mention was made regarding items that are not applicable and as such it is possible that some firms' disclosure scores were penalised for not disclosing an item that were not applicable to the company. Furthermore, as the association between the extent of disclosure and each variable was tested separately, the multicollinearity between variables was not taken into account in the statistical analysis.

### **Chow and Wong-Boren (1987)**

Applying agency theory, Chow and Wong-Boren examined the voluntary reporting practices of a sample of 52 listed Mexican manufacturing companies. They computed weighted and unweighted disclosure scores for 24 items and then regressed scores on the three firm characteristics: size (as measured by the market value of equity plus the book value of debt), leverage (as measured by the book value of debt divided by size), and proportion of assets in place (as measured by dividing the net book value of fixed assets by total assets). They found that

voluntary disclosure varied widely within the 52 Mexican manufacturing companies listed on Mexican Stock Exchange and the extent of disclosure was significant, only for firm size at the 0.01 level. The regression model explained 15% of the variation in the dependent variable.

### **Wallace (1987)**

Wallace selected a sample of 47 listed Nigerian companies and using a wide-ranging approach, the researcher examined the extent of information disclosed by these companies using a comprehensive list of items that were not directed at any particular user group. To overcome subjectivity in applying the relative scoring procedure, Wallace first examined all available records about the companies and read thoroughly the annual reports in order to determine the relevance of an item to the company.

Using multiple regression, eight variables, namely: size (as measured by total assets, sales, number of shareholders), risk (profitability – profit after taxation as a percentage of capital employed -, and liquidity – current asset divided by current liability), were evaluated to determine their impact on two generated disclosure index: aggregate and statutory disclosure index. One of the significance of the study was that, it was the first study that measured the extent of statutory disclosure separately and assessed the association between such disclosure and selected variables. Wallace found that average disclosure index decreased from 39.75 percent in 1982 to 37.55 percent in 1986, and then peaked at 43.11 percent in 1984. As far as aggregate disclosure level is concerned, the researcher found a positive significant association between asset size and the level of disclosure at 0.05 levels. This result was in conformity with the results of previous studies carried out in the US (Buzby 1975; Cerf 1961) and Canada (Belkaoui and Kahl 1978). In addition, type of management was found to be the only variable associated with the extent of statutory disclosure. All other variables were rejected. However, exclusion of unlisted companies was the main limitation of this research.

### **Cooke (1989a)**



Focusing on Swedish companies, Cooke assessed whether there is a significant association between a number of independent variables, namely: listing status (unlisted, listed, and multiple listed), size (as measured by total asset, sales, and number of shareholders), industry type, parent company relationship, and the extent of aggregate disclosure (voluntary and mandatory). The study covered a random sample of 90 non-financial companies' annual reports of which 38 were unlisted and 52 listed, for the financial year ended 31 December 1985.

Cooke argued that it was considered appropriate to eliminate banks, insurance companies, cooperative and associations because of the specialised nature of their operations. Moreover, Cooke excluded Over-The-Counter companies arguing that they were considered to be a group on their own and their inclusion might distort the analysis in addition to its small size as this would lead to considerable statistical problems. The 224 items included in the disclosure index were based mainly on disclosure indexes used in previous studies, recommended for disclosure by the IASC, Swedish regulations, and desirable disclosure determined by two of the three Swedish practicing accountants who were consulted at the pilot study stage. A dichotomous procedure was used to score items included in the scoring instruments in which an item is scored one if it was disclosed and zero if it was not. Any item was not mentioned in the annual report was considered not applicable and excluded from the calculation of the index. Applicability of an item was determined by reading the whole annual report. Then, the index score for each company was calculated by dividing the actual scores a company obtained by the maximum scores, which that company was expected to get.

Using nonparametric tests (Chi Square, Cramer's V., Contingency Coefficient); Cooke found significant association between listing status and the extent of aggregate disclosure. Furthermore, a one-way ANOVA test revealed that unlisted, Stockholm Stock Exchange listed and multiple listed firms were significantly different from each other. A multiple regressions (stepwise regression routines) also run by including all the variables into the model. The study has shown that disclosure is very variable and that there is a significant association between the extent of disclosure and listing status which was the most important explanatory variable explaining the dependent variable variation followed by size (each size



variable revealed similar result). Furthermore, a low level of significance was found between the extent of disclosure and industry type. On the other hand, extent of disclosure by unlisted companies was lower than listed companies only on the Stockholm Stock Exchange, which found to disclose lower than multiple quotation companies. Moreover, three regression models were used incorporating one size variable in each multiple regression routine, total assets, annual sales, and number of shareholders. The coefficients of determination ( $R^2$ ) were very similar regardless of which size variable was incorporated. As a result, whilst it is concluded that listing status and size are two significant factors, it is shown that no matter which one of the three size variables is selected.

#### **Tai et al. (1990)**

This study examined the extent mandatory disclosure in the annual reports issued by 76 selected Hong Kong listed companies. The significant areas of non-compliance, therefore, with the statutory requirements: Companies Ordinance, Statements of Standard Accounting Practice (SAAP) issued by the Hong Kong Society of Accountants, the Securities Ordinance were investigated through a checklist provided by the local office of the Big-Eight audit firm. The list contained all the material disclosure requirements of the Companies Ordinance and the SAAP. Concerning the Securities Ordinance requirements, the Undertaking prescribed under the Securities (Stock Exchange Listing) Rules 1986 was used as point of reference. Interviewing five company executives and seven audit managers identified the cause of non-compliance. In addition, possible relationships between each pair of factors (company size, industry type, and audit firm) were tested using the chi-square test of independence and the Friedman two-way analysis of variance by ranks.

The analysis of the annual reports revealed a major departure from disclosure requirements (non-compliance in average were 22%). Furthermore, the study indicated a significant relationship only between size of the Hong Kong companies and the departure from disclosure requirements. Large companies (shareholders' funds over HK\$500 million) and small companies (shareholders' funds less than HK\$5 million) had fewer departures than medium-sized firms (shareholders' funds between \$5 million and \$500 million). The cause of non-



compliance with the various disclosure requirements was examined by means of an interview survey. The findings of the interviews suggested that the important causes of non-compliance were mainly: difficulties in interpreting the disclosure requirements and auditing guidelines, insufficient awareness of general accounting concepts, lack of proficiency of staff, and lack of resources to keep abreast of the changes in the disclosure requirements.

### **Cooke (1992)**

This empirical study represents a contribution to rigorous testing of Japanese reporting, which is considered as a country having a unique business environment and unique culture, and specifically reports on the impact of size, stock market listing and industry type on disclosure, both voluntary and mandatory (aggregate disclosure), in the annual report of 35 listed corporations. The focus of this research is disclosure of information to a wide range of users, 165 of items, including voluntary and mandatory disclosures, was included in the scoring sheet. The items were selected based on previous studies, recommended disclosure by IASC, requirements by Japan authorities and recommendation by JICPA.

One major difference of this study from the previous studies is that company size was measured in eight variables, namely: capital stock, turnover, number of shareholders, total assets, current assets, fixed assets, shareholders' funds and bank borrowings. The unusual variable considered was "bank borrowing" and it was included because of the special relationship of Japanese companies with the banking sector. Another important point is that, in contrast to Cooke's (1989a), the problem of multicollinearity was resolved by factor analysis where the principal factors were used as regressors by the inclusion of a composite size variable in the regression equation.

Adopting multiple linear regressions, the study found that size and listing status were important explanatory variables with total assets, shareholders' funds and fixed assets being the most highly correlated with the composite size variable. In addition, manufacturing corporations were found to disclose significantly more information than other types of Japanese corporations. Coverage of the number of companies, however, was one of the limitations of this study.

**Malone et al. (1993)**

The principal research question addressed by this study was whether there are identifiable and measurable factors that are associated with the extent to which 125 American firms in the oil and gas industry discloses financial information (aggregate disclosure). Firms included in the sample were firms its shares traded not only on the New York Stock Exchange, and NASDAQ markets, but on many other formal and informal exchanges as well.

The extent of financial disclosure measured by using a weighted index of disclosure 129 items weighted by oil and gas financial analysts according to the importance of each disclosure in an investment decision. The selected factors to be investigated for impact on the extent of disclosure were leverage, number of shareholders, size, industry type, profitability, foreign directors serving on the board of directors, foreign operations, audit firm, and listing status. Therefore, a stepwise regression model was used to determine which variables were “best” in explaining the extent of financial disclosure. Of the selected independent variables entered, only four retained in the final model at the 0.20 level of significance: exchange listing status, audit firm, leverage, and number of shareholders which three of them (exchange listing status, leverage, and number of shareholders) its parameters estimates shows significance in explaining the extent of financial disclosure.

**Ahmed and Nicholls (1994)**

The study assessed empirically the extent of statutory information disclosure in the corporate annual reports of 65 listed non-financial companies for the fiscal year 1987-1988 and the impact of selected key company attributes on the degree of disclosure compliance with accounting regulatory status in a developing country, Bangladesh. In particular, the compliance level was assessed against the combined statutory requirements of the Companies Act 1913 and the Securities and Exchange Rules 1987. The researchers used linear regression for testing the impact of selected company specific factors; size, leverage, multinational company influence, professional qualifications of the principal accounting officer of the company, and audit firm on mandatory disclosure compliance.



The results showed that the degree of compliance in Bangladesh was low, since none of the sampled companies complied with statutes by disclosing all mandatory information. Using multiple regression techniques the results showed that subsidiaries of multinational companies and large audit firms had significant positive impact on the level of disclosure compliance. The study concluded that to increase the degree of compliance, the accounting profession should strengthen its monitoring and enforcement mechanisms and increase awareness about the existing mandatory provisions by conducting training programs for its members on a regular basis.

#### **Hossain et al. (1994)**

This study examined the influence of six firm-specific characteristics on voluntary disclosure in the annual reports of 67 non-financial companies listed on the Kuala Lumpur Stock Exchange on December 31, 1991. The unweighted disclosure index was comprised of 78 accounting items 50% of them were similar to those selected by Gary et al. (1995). The six variables tested were size, ownership structure, leverage, assets-in-place, audit firm, and listing status. The univariate (Student's t-test and Mann-Whiney U test) and multivariate (multiple regression model) analysis were adopted for testing the empirical research hypotheses.

Findings revealed that both univariate and multivariate analyses showed that corporate size, listing status, and ownership structure found to be significantly associated with voluntary disclosure in Malaysia. Firm size was the most strongly significant variable associated with the extent of voluntary disclosure. In contrast, leverage, assets-in-place, and audit firm did not appear to be important factors in explaining voluntary disclosure by firms.

#### **Wallace et al. (1994)**

Beside reporting on the results of an investigation into whether the differences in the level of mandatory disclosure mirror the differences in firm characteristics, the second objectives for the researchers was to examine whether the firm characteristics found to be relevant in previous country disclosure studies are also implicated in Spain. The procedure for measuring disclosure level, in this study, is

different from the one commonly found which used disclosure indexes in measuring the extent of disclosure. That is instead of awarding one mark for the presence and zero for the absence of an item of information in a corporate annual report and accounts, as in most previous studies, the researcher in this study emphasise the comprehensiveness nature of the disclosure on each of the information items selected for investigation by rewarding the depth of information provided in the annual reports and accounts to give credit to the density (fullness) of the information on each item. The study focuses on 50 non-financial Spanish firms of which 30 were listed and were unlisted on Madrid and Valencia Stock Markets. A total of eight firms' characteristics were specified and classified into three non-mutually exclusive categories: structure related variables (e.g. size – total asset and total sales -, solvency – debt to equity ratio), performance related variables (e.g. rate of return, profitability, liquidity), and market related variables (e.g. industry type, listing status, and auditor type). The list of items to measure the mandatory disclosure was restricted to 16 mandatory ones.

Having made a rank transformation of the dependent and continuous independent variables, the researcher used Ordinary Least Square (OLS) regression to examine the association between the extent of disclosure and selected company-specific factors. The study provided evidence that the amount of detail in Spanish corporate annual reports and accounts is increasing in firm size and stock exchange listing. In addition, it is noteworthy to point out that in contrast to research by Belkaoui and Kahl (1978); liquidity was found to be a significant negative explanatory variable in the reduced regression models. Finally, no significant association was found between the other five variables and the extent of disclosure.

#### **Meek et al. (1995)**

This study extended Gray et al. (1993) work, which examined the effect of international listing status on voluntary disclosure in the annual reports of U.S, UK and Continental European (specifically, France, Germany, and the Netherlands) multinational corporations with at least 10% of its sales from non-domestic source and sales in excess of \$500 million. The total sample examined in this study was 226 companies consisting of 116 U.S., 64 UK, 16 France, 12



Germany, and 18 Netherlands for the year 1989. The final unweighted checklist consisted of 85 items of information disclosed voluntarily. The factors examined its influence on voluntary disclosures of three types of information; strategic, non financial, and financial. These factors were size, country/region of origin, industry type, leverage, multinational operations, profitability, and listing status. Multiple regression routines used to test the impact of explanatory variables on voluntary disclosure. The study found that while company size, country/region, listing status, and, to a lesser extent, industry type are the most important factors explaining voluntary disclosure overall, the importance of the factors varied by information type.

### **Raffournier (1995)**

The aim of this study was to look for possible determinants of the voluntary disclosure policy of 161 Swiss non-financial (industrial and commercial) listed companies by relating the content of their 1991 annual reports to possible determinants representing agency and political costs. Raffournier argued that financial and insurance enterprises were excluded because they are subject to specific disclosure requirements, so that the content of their annual reports cannot be considered as voluntary determined. Furthermore, their inclusion would probably have biased the results because of their financial characteristics.

The selected characteristics were size, internationality level, percentage of fixed assets, audit firm, industry type, leverage, profitability, and ownership structure. The extent of disclosure was measured by an unweighted index driven from the Fourth (provides several formats of balance sheet and profit, loss account and required additional information in the notes to the financial statements) and Seventh (relates to group accounts) European Union Directives since Switzerland economy depends on EU economy, although it is not a member of the EU. Relations were assessed using univariate (one-way variance analyses and linear regression) and multivariate analyses (multiple linear regressions).

The findings were that the extent of disclosure found to be significantly related to size, internationality level, percentage of fixed assets, audit firm and, to a smaller extent, to industry type and profitability explaining 42% of the dependent variable

variations. Inversely, no significant relationship was found for leverage and ownership diffusion. When examined simultaneously, however, the only significant variables were size and internationality level.

Owusu-Ansah (1997) criticised Raffournier's study by claiming that the disclosure index used did not adequately measure the voluntary disclosure of the firms. He added that the assumption underlying the selection of Raffournier disclosure items makes it difficult to accept the reliability and the validity of the index on which his findings are based. Without empirical evidence, one can hardly use information items under the EU disclosure rules as a sole proxy for the voluntary disclosure items of Swiss firms on the assumption that Swiss firms operate commercially in EU countries.

#### **Wallace and Naser (1995)**

One of the main purposes of this study was to examine the relationship between comprehensiveness of aggregate disclosure in the corporate annual reports of 80 companies listed on the Hong Kong stock exchange over the period 1988-1992 and 11 firm characteristics, namely: three size variables (total asset, sales, and market capitalisation), leverage, ownership distribution, profitability, rate of return, liquidity, industry type, audit firm, and official domicile. Comprehensiveness of disclosure was measured by an index based on 142 items. However, as in Wallace et al. (1994), the degree of detail was rewarded by giving credit to the fullness of information disclosed.

Both unranked and ranked OLS regression estimates were used to determine the explanatory power of the independent variables. The results of both types of analysis were similar and indicated that disclosure varied positively with asset size and industry type. On the other hand, surprisingly, disclosure scores were found to be negatively associated with profitability. Wallace and Naser explained that this might be due to the unique characteristics of the capital market in Hong Kong and the distinguished nature of Chinese managers' mindset (face). Furthermore, in contrast to Wallace et al. (1994), the size of audit firm was found to be negatively associated with the extent of disclosure.



**Ahmed (1996)**

This empirical study investigated the extent of aggregate disclosure in the 1987/88 and 1992/93 annual reports of 118 non-financial publicly quoted companies on the Dhaka Stock Exchange in Bangladesh excluding banks, insurance companies, and mutual funds from the list, and association between company size, leverage, whether the company is a subsidiary of multinational enterprise, qualifications of the principal accounting officer, and audit firm size with disclosure level. To assess the overall disclosure levels of companies in both 1987/88 and 1992/93, 150-information items comprising 94 statutory items and 56 voluntary items were identified in order to develop the unweighted index applied. The multiple linear regression analysis was undertaken for testing the impact of the selected company-specific factors on extent of disclosure. Separate regression analysis for each year was also undertaken to investigate the changes in the explanatory power of the independent variables.

The results showed that the disclosure level varied between 29.8 percent and 73.4 percent, with an average of 53.3 percent. While the majority of the companies disclosed much information of a statutory nature, primarily because of the enforcement of the Securities and Exchange Rules following the adoption of 18 selected International Accounting Standards related to the disclosure in the balance sheet, profit and loss account statements and notes for the accounting policies, the level of voluntary disclosure was very low. Using the multiple linear regression model, the study found that subsidiaries of multinational enterprises and companies audited by large audit firms disclosed significantly more information in their annual reports.

**Al-Modahki (1996)**

Al-Modahki investigated longitudinally the extent of disclosure in the annual reports using a sample of 33 Saudi listed companies over the period 1986 to 1990. Beside the changes in the extent of aggregate, mandatory and voluntary disclosure over the years, the impact of five corporate characteristics (industry type, company size - as measured by sales, total assets, number of shareholders, and paid-in capital -, auditor type, foreign investment, and length of incorporation), on the extent of disclosure were tested. The extent of disclosure was measured by an

index based on 121 items that were selected based on a review of the literature, recommendation by academics and auditors, and the results of a pilot study. Like Cooke (1993); Cooke (1989a); Cooke (1992); Wallace (1987); Al-Modahki (1996) also used dichotomous, unweighted and relative scoring procedures.

Using the Wilcoxon matched-pairs test, the author found that all three measures of disclosure (aggregate, mandatory and voluntary) showed a significant increase over the selected years, except between 1989 and 1990. In addition, using the non-parametric Mann-Whitney test, a significant association was found between extent of aggregate disclosure and only one size variable – paid-in capital – during the last three years. Furthermore, industry type was found to be significant between two industries only (i.e. industry 1: banking, and industry 2: manufacturing and cement) for the years 1986, 1987 and 1988. The other three variables were found to have no significant impact on the extent of disclosure in any of the years examined.

#### **Soh (1996)**

In this study, focusing primarily on both compliance and voluntary disclosure, the researcher examined the extent of disclosure by 65 Malaysian listed companies for the years 1991, 1992, and 1993 to determine their relationship with five company-specific variables, namely: company size, foreign ownership, industry type, profitability and leverage, as well as changes over the years.

Both voluntary and compliance disclosure levels of sampled companies for each year were measured by unweighted disclosure indices using a dichotomous scoring procedures. As mandatory disclosure requirements laid down in the regulations (i.e. the Companies Act and Stock Exchange disclosure requirements) as well as the national accounting standards, the researcher developed three compliance disclosure indices: 1) regulation compliance index (RCDI) based on 118 items of information selected from the Companies Act and the Stock Exchange disclosure requirements, 2) national accounting standards compliance index (NASCDI) based on 106 items of information selected from national accounting standards, and 3) aggregate compliance disclosure index (ACDI) based on 148 items of information. The voluntary disclosure index (VDI), on the



other hand, was developed based on 116 items of information derived mainly from previous studies.

OLS multiple regression was conducted separately for each year to test the association between each of the indices and company-specific characteristics. The test results indicate a significant relationship between:

1. ACDI and two variables, i.e. profitability (negative) and foreign ownership (positive) in both 1991 and 1992 (adjusted  $R^2$  were: 0.12 in 1991, 0.06 in 1992, and 0.028 in 1993).
2. RCDI and (a) foreign ownership (positive) in 1991, (b) industry – consumer group – (positive) in 1992, (c) industry – building (negative) in 1993 (adjusted  $R^2$  were: 0.12 in 1991, 0.08 in 1992, and 0.021 in 1993).
3. NASCDI and (a) foreign ownership (positive) and profitability (negative) in 1991, (b) profitability (negative) in 1992 (adjusted  $R^2$  were: 0.11 in 1991, 0.12 in 1992, and 0.021 in 1993).
4. VDI and (a) industry – services – (positive in 1991, (b) company size (positive) in 1992 and 1993 (adjusted  $R^2$  were: 0.29 in 1991, 0.18 in 1992, and 0.23 in 1993).

It is interesting to note out that, like the results of longitudinal studies by (Al-Modahki 1996), this study also indicated that the explanatory power of the company-specific variables varied over time.

### **Al-Mulhem (1997)**

In this study, Al-Mulhem investigated whether aggregate disclosure levels vary in Saudi corporate annual reports and if variations in the information provided, mirror the variations in certain firms' characteristics. A random sample of 40 annual reports of non-financial listed and unlisted companies for the financial year 1994 was selected. Adopting a wide-ranging approach, similar to Cooke (1993); Cooke (1989a); Cooke (1992); Wallace (1987), a list of 165 items were selected and a disclosure index for each company in the sample was developed on the basis of the selected items.

The firm specific characteristics examined were firm size (as measured by total assets and net sales), profitability (as measured by rate of return and earnings margins), industry type, listing status, and type of audit firm. To test significance of association between the index score and selected variables, both univariate (regression for continuous independent variables –e.g. size and earnings margin– and one-way ANOVA for industry type, listing status and type of audit firm) and multiple regressions were run. The univariate tests were carried out first taking into account all the 40 companies and then removing five electricity companies. The multiple regressions were run only on the basis of the analysis of 35 companies (excluding the five electricity companies).

The univariate analysis before excluding the five companies revealed that there was a significant relationship between the extent of disclosure and three variables: earnings margin, type of audit, and listing status. After the five companies were removed, the results revealed that size and listing status were statistically significant explanatory variables. The multiple regressions, on the other hand, revealed that the following three variables were statistically significant: listing status, size (as measured by sales) and rate of return. The interesting point to note in this study is that exclusion of certain companies revealed considerably different results.

### **Inchausti (1997)**

As the researcher has argued it that accounting information is subject to two different influences: market pressures and regulatory bodies' pressure. Therefore, the study provides an empirical analysis of the influence of both these factors on information aggregate disclosure by Spanish firms over the years 1989-1991 using a sample of 138 companies – excluding financial institutions, insurance companies and investment funds. In addition, considering the influence of positive accounting theory such as agency, political and signaling theory; several characteristics relating to company-specific factors, namely: size, audit firm, listing status, profitability, leverage, dividends, and industry type, were selected and tested empirically. The information disclosed by sample companies was measured by unweighted disclosure index based on 50 items (voluntary and mandatory items) of information. Stepwise regression technique was used for



testing the impact of selected company-specific factors on disclosure. In addition, the influence of regulation was analysed through a panel data analysis including time effects. This technique, allows a large number of data points, increasing degree of freedom, reducing collinearity among explanatory variables, improving the efficiency of econometric estimates, and more importantly controlling the unobservable heterogeneity existing among the sample companies, since they can be monitored through time (Hsiao 1986).

According to the results obtained through the regression analysis and the panel data analysis, the hypotheses concerning size, audit firm, and listing status – related to positive accounting theory – provide a satisfactory basis for explaining the attitude of firms regarding the provision of financial information. Other hypotheses, relating to variables such as profitability, leverage, dividends and industry type were rejected by the analysis. The analysis of panel data indicates the influence of legislation over Spanish companies showing a strong increase in disclosure. The study concluded that it could be argued that although positive theory can be used to provide an explanation of the attitudes of Spanish firms towards information disclosure, it is necessary to recognise the effect of legislation. Therefore, it may not be possible to leave disclosure to the financial market alone, and it may be necessary to regulate accounting in order to ensure that firms satisfy the information needs of different users.

#### **Marston and Robson (1997)**

This study investigated aggregate disclosure in India as an example of a developing country. Disclosure in the annual reports of 51 large Indian companies, in terms on turnover exceeding 500 million rupees, was studied in 1982/1983 and 1989/1990. The research instrument used was a weighted disclosure index, which included both voluntary and mandatory items developed by Barret (1976). The non-parametric test Wilcoxon matched pairs were carried out for investigating differences in disclosure over time and testing whether Indian company size influence disclosure.

The study concluded that increasing disclosure over time were found to have occurred which partly a result of an increase in accounting standards disclosure

requirements over the period explored and also there was an increase in compliance with existing standards. In addition, it was found that large companies disclosed more than smaller companies in both periods.

#### **Patton and Zelenka (1997)**

This study empirically tested the mandatory disclosure for 50 Czech joint companies that were included in the 1993 Prague Stock Exchange Index and its relationship with the independent variables firm size, type of auditor, number of employees, stock exchange listing status, profitability (return on equity) performance, financial risk (leverage) as monitoring variables. The dependent variables (three unweighted indexes measuring the extent of disclosure in annual reports) were based on Czech regulations concerning disclosure in the financial statements of publicly traded firms. The first disclosure index included only those items, which were expected to apply to most companies; the research referred to this as the 'narrow index'. This index were supplemented by other two indexes that include the initial index as well as items that may be more subject to the 'not applicable' problem; (i.e. a 'somewhat broader' index and a 'broader' index).

The 'narrow' disclosure index mean was 0.56 while the 'somewhat broader' index mean was 0.50 and the 'broader' index mean was 0.43 confirming the existence of differences among the three disclosure indexes. Univariate analyses generally supported the existence of the hypothesised relationships between extent of disclosure in annual reports and firm size, profitability performance, financial risk (leverage), and monitoring variables. Multivariate regressions explained about 25% of the variance in the extent of disclosure in annual reports. The most important independent variables in the multivariate regressions were the type of auditor the firm had (Big 6 versus, other) and the number of employees. Statistically, significant variables in multiple regressions include type of auditor, number of employees, stock exchange listing status, and return on equity performance.

#### **Dumontier and Raffournier (1998)**

In this study the researchers argued that since the foundation in 1973, the IASC has become established as the most authoritative agency for accounting



harmonisation by spreading its influence widely to all parts of the world, in particular in developing countries, newly industrialised or newly capitalistic ones. Some countries have gone further such as France and Switzerland can use IAS for the preparation of consolidated financial statements. Therefore, the empirical study aimed to identify the motivation of Swiss listed companies which voluntarily comply with IAS choosing Switzerland in particular since its level of accounting regulation and its accounting comprehensiveness is low. In this context, compliance with IAS is particularly costly since it implies additional disclosure and renunciation of considerable discretion in accounting practice.

Knowledge of the characteristics of companies, which voluntarily adopt a particular set of accounting standards, may be of particular interest for standards setting. On the basis of prior literature on voluntary disclosure and auditing, the researchers formulated a set of hypothesis, which were tested on a sample of 133 Swiss listed companies covering 80% of the target population. The sample divided into two groups; the IAS group included 51 companies (i.e. 38%), which declared their financial statements in conformity with IAS, and the second group included 82 companies constitute the non-IAS group. The independent variables considered were internationality (as measured by two variables: percentage of sales realised abroad and percentage of sales outside Europe), size, ownership diffusion, leverage, capital intensity (e.g. it is proxied by the assets-in-place ratio obtained by dividing the book value of fixed assets – net of depreciation – by total assets, profitability, return on equity ratio, market measure of profitability was also used which is the average stock rate of return from 1992 to 1994), auditor type, and listing status.

The study used the univariate analysis (non-parametric Mann-Whitney U-test and Chi-square, and parametric student t-test) and multivariate analysis (multiple regression) for testing its hypothesis. In conclusion, the Univariate analyses showed a positive influence of size, internationality, listing status, auditor type and ownership diffusion on voluntary compliance with IAS. Inversely, no significant relationship was found for leverage, profitability and capital intensity. Multivariate analyses designed to control for collinearity among independent variables, which confirmed these results. They revealed that firms, which comply

with IAS, are larger, more internationally diversified, less capital intensive and have a more diffuse ownership. Overall, Dumontier and Raffournier argued that these findings suggest that political and pressure from the outside markets play a major role in the decision to apply IAS.

#### **Ahmed and Courtis (1999)**

It is reported by the researcher that accounting researchers have investigated association between corporate characteristics and disclosure in corporate annual reports since 1961. Findings have consistently shown corporate size and listing status to be significantly associated with disclosure levels, while mixed results have been reported for leverage, profitability, and audit firm size. The purpose of Ahmed and Courtis empirical research is to investigate the underlying causes of variations in the results of past disclosure studies by employing meta-analysis techniques of the results of 23 separate studies of the association between annual report disclosure level and firm characteristics.

Glass et al. (1981) defines meta-analysis as the analysis of analysis – the statistical analysis of a large collection of results from individual studies, for the purpose of cumulating and integrating the findings. Meta-analysis accumulates the statistical findings of related research in order to evaluate the findings across studies, and to determine whether differences in results are primarily due to differences in economic variables, research setting, measurement scales or sampling error. The technique enables clearer and consistent conclusion to be drawn from past research by systematically bringing about commonalities, which are not possible, by descriptive analysis (Greenberg 1992; Hunter et al. 1982; Rosenthal 1991).

A meta-analysis of 23 studies between 1968 and 1997 confirms significant and positive relationships between disclosure levels and corporate size, listing status, size of audit firm and leverage. No significant association is found between profitability, with aggregate disclosure levels. They concluded that in addition to sampling error, the results are moderated by differences in disclosure index construction, differences in definition of the explanatory variables, and differences in research settings.



To sum up, the following section will provide an abstract and evaluation for the previous empirical studies searched regarding the issue of the impact of selected company-specific factors on extent of disclosure.

#### 4.3.1. Abstract and evaluation

Several researches were carried out to examine the association between company-specific factors and the extent of disclosure in corporate annual reports in various countries. In examining such relationship, generally speaking, while most empirical studies have chosen the level of voluntary disclosure (Al-Modahki 1996; Chow and Wong-Boren 1987; Cooke 1991; Cooke 1989b; Dumontier and Raffournier 1998; Firth 1979; Hossain et al. 1995; Hossain et al. 1994; Lau 1992; McNally et al. 1982; Meek et al. 1995; Raffournier 1995; Soh 1996; Tong et al. 1990) and aggregate disclosure (Ahmed 1996; Al-Modahki 1996; Al-Mulhem 1997; Belkaoui and Kahl 1978; Buzby 1975; Cerf 1961; Cooke 1993; Cooke 1989a; Cooke 1992; Courtis 1979; Giner 1997; Inchausti 1997; Malone et al. 1993; Marston and Robson 1997; Singhvi 1968; Singhvi and Desai 1971; Stanga 1976; Wallace 1987; Wallace and Naser 1995) to be investigated, few studies indeed focused only on the mandatory disclosure (Ahmed and Nicholls 1994; Al-Modahki 1996; Patton and Zelenka 1997; Tai et al. 1990; Wallace 1987; Wallace et al. 1994). Since the present study seeks to examine the impact of company-specific factors on the extent of disclosure in compliance with IAS of JIC listed in Amman Stock Exchange over the period 1995-2000, this part of the chapter focused not only on the review of the studies that looked at the association between company-specific factors and the mandatory disclosure, but also on the review of the studies investigating the voluntary and aggregate disclosure in both developed and developing countries, at a particular point in time and over a period of time. An abstract and findings of studies reviewed in this section provided is in Tables 4.1 and 4.2 below:

**Table 4.1: Abstract of Findings Concerning the Impact of Company-Specific Factors on Extent of Disclosure**

Explanatory Factor	Region and Countries where Associations Between Disclosure Scores and Explanatory Factors are
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	Proven	Not Proven
<b>Size</b>	<u>Developed Countries</u> Cerf, 961; Singhvi, 1967; Singhvi and Desai, 1971; Buzby, 1975; Stanga, 1976; Belkaoui and Kahl, 1978; Curtis, 1979; Firth, 1979; Cooke, 1989a, 1989b, and 1992; Malone et al., 1993 Wallace et al., 1994; Gary et al., 1995; Raffournier (1995); Marston and Robson (1997); Inchausti, 1997; Dumontier and Raffournier, 1998; Ahmed and Curtis, 1999  <u>Developing Countries</u> Singhvi, 1968; Chow and Wong-Boren, 1987; Wallace, 1987; Tai et al., 1990; Ahmed and Nicholls, 1994; Hossain et al., 1994; Wallace and Naser, 1995; Ahmed, 1996; Al-Modahki, 1996; Soh, 1996; Al-Mulhem, 1997; Marston and Robson, 1997; Ahmed and Curtis, 1999	<u>Developed Countries</u> Stanga, 1976; Spero, 1979; Malone et al., 1993  <u>Developing Countries</u> Singhvi, 1968
<b>Profitability</b>	<u>Developed Countries</u> Singhvi and Desai, 1971; Belkaoui and Kahl, 1978 (negative association); Spero, 1979; Curtis, 1979; Wallace et al., 1994; Raffournier, 1995  <u>Developing Countries</u> Singhvi, 1968; Wallace and Naser, 1995 (negative association); Soh, 1996 (negative association); Al-Mulhem, 1997; Patton and Zelenka, 1997	<u>Developed Countries</u> Belkaoui and Kahl, 1978; Spero, 1979; Malone et al., 1993; Gary et al., 1995; Inchausti, 1997; Dumontier and Raffournier, 1998; Ahmed and Curtis, 1999  <u>Developing Countries</u> Wallace, 1987; Lau, 1992; Ahmed and Curtis, 1999
<b>Liquidity</b>	<u>Developed Countries</u> Belkaoui and Kahl, 1978; Wallace et al., 1994 (negative association)  <u>Developing Countries</u>	<u>Developed Countries</u> -  <u>Developing Countries</u>



**Table 4.1: Abstract of Findings Concerning the Impact of Company-Specific Factors on Extent of Disclosure**

Explanatory Factor	Region and Countries where Associations Between Disclosure Scores and Explanatory Factors are	
	Proven	Not Proven
	Patton and Zelenka, 1997	Wallace, 1987; Wallace and Naser, 1995
Industry Type	<u>Developed Countries</u> Stanga, 1976; Belkaoui and Kahl, 1978; Courtis, 1979; Cooke, 1989a, 1989b, 1991, 1992; Raffournier, 1995; Gary et al., 1995	<u>Developed Countries</u> Malone et al., 1993; Wallace et al., 1994; Inchausti, 1997
	<u>Developing Countries</u> Wallace and Naser, 1995; Al-Modahki, 1996; Soh, 1996 (negative association with building industry type and positive with the other sectors)	<u>Developing Countries</u> Wallace, 1987, Tai et al., 1990; Al-Mulhem, 1997
Audit Firm	<u>Developed Countries</u> Singhvi and Desai, 1971; Raffournier, 1995; Inchausti, 1997; Dumontier and Raffournier, 1998	<u>Developed Countries</u> Courtis, 1979; Firth, 1979; Malone et al., 1993; Wallace et al., 1994; Ahmed and Courtis, 1999
	<u>Developing Countries</u> Ahmed and Nicholls, 1994; Hossain et al., 1994; Ahmed, 1996; Al-Mulhem, 1997; Patton and Zelenka, 1997; Dumontier and Raffournier, 1998	<u>Developing Countries</u> Singhvi, 1968; Tai et al., 1990; Tong et al., 1990; Hossain et al., 1994; Wallace and Naser, 1995 (negative association); Al-Modahki, 1996
Leverage	<u>Developed Countries</u> Courtis, 1979; Malone et al., 1993; Gary et al., 1995; Ahmed and Courtis, 1999	<u>Developed Countries</u> Wallace et al., 1994; Hossain et al., 1995; Raffournier, 1995; Inchausti, 1997; Dumontier and Raffournier, 1998
	<u>Developing Countries</u> Hossain et al., 1994	<u>Developing Countries</u> Chow and Wong-Boren, 1987; Ahmed and Nicholls, 1994; Hossain et al., 1994;

**Table 4.1: Abstract of Findings Concerning the Impact of Company-Specific Factors on Extent of Disclosure**

Explanatory Factor	Region and Countries where Associations Between Disclosure Scores and Explanatory Factors are	
	Proven	Not Proven
		Wallace and Naser, 1995; Ahmed, 1996; Soh, 1996; Patton and Zelenka, 1997
Listing Status	<u>Developed Countries</u> Cerf, 1961; Singhvi and Desai, 1971; Firth, 1979; Cooke, 1989a, 1989b, 1991, 1992, 1993; Malone et al., 1993; Wallace et al. 1994; Hossain et al. 1995; Raffournier, 1995; Gary et al., 1995; Inchausti, 1997; Dumontier and Raffournier, 1998; Ahmed and Courtis, 1999;	<u>Developed Countries</u> Buzby, 1975
	<u>Developing Countries</u> Hossain et al., 1994; Al-Mulhem, 1997; Patton and Zelenka, 1997	<u>Developing Countries</u> Wallace and Naser, 1995



Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
Cerf (1961)	U.S.A	527	31	Size, Number of stockholders, Listing status	Analysis of means score, Least square regression, $R^2 = 16.5\%$	<ul style="list-style-type: none"> <li>- Although the extent of disclosure in annual reports is positively associated with all three of the characteristics, Listing status is found to be the key explanatory characteristic.</li> <li>- Companies, which disclose inadequate information in annual reports, are likely to be small in size, less profitable as measured by rate of return and earnings margin, audited by a C.A. firm of any size, and managed by Indian management.</li> <li>- The statistical analysis shows that the relationship between the extent of disclosure and size, profitability, and type of management were significantly positive.</li> </ul>
Singhvi (1968)	India	45	34	Size, Profitability, Audit firm, Number of shareholders, Type of management	Chi square test	<ul style="list-style-type: none"> <li>- The extent of disclosure in annual reports was positively associated with all characteristics but it was significant only with listing status.</li> <li>- 88% of the overall <math>R^2</math> could be accounted for one characteristic, Listing</li> </ul>
Singhvi and Desai (1971)	U.S.A	155	34	Size, Number of stockholders, Listing status, Profitability, Audit firm	Univariate analysis (Chi-square), Multivariate analysis (multiple linear regression), $R^2 = 43\%$	

Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
						status suggesting that listing status is the primary explanatory characteristic. - Superior extent of disclosure is related on average with lower security price fluctuations.
Buzby (1975)	U.S.A	88	39	Size, Listing status	Wilcoxon matched-pairs signed-rank test, Kendall's rank correlation (kua)	- The extent of disclosure in annual reports is positively associated with the size of company's assets and not affected by listing status.
Stanga (1976)	U.S.A	80	79	Size, Industry type	Analysis of means score, Multiple linear regression, R <sup>2</sup> is not given	- Disclosure deficiencies existed, that corporate size did not play a major role in explaining disclosure differences but that industry did appear to be important since firms seemed to play "follow the leader" in disclosure.
Belkaoui and Kahl (1978)	Canada	200	30	Size, Industry type, Liquidity, Capitalisation, Profitability (-0.132)	Kendall's rank correlation (kua), ANOVA	- A detailed analysis of the categories of moderate and low consensus value items point to the need of a better disclosure policy (extent of disclosure ranging between 0.651 and 0.449). - By liquidity being the major explanatory indicator of relative disclosure, the company-specific factors



Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
						size and industry type were found to be associated with disclosure, while profitability and capitalisation ratios were not.
Courtis (1979)	New Zealand	126	38	24 Variables 'see the detail in section 4.2'	Chi Square test	<p>- Disclosure is positively related to the amount of expenditure and time devoted to annual report preparation, industry type, as well as to profitability level, leverage, and the seven measures of corporate size.</p> <p>- Significantly, disclosure levels were found to vary inversely with stock price fluctuation (disclosure levels were negatively associated with fluctuation in security prices and price range, but ambiguous or unlikely association with average monthly fluctuation).</p> <p>- The influence of corporate size seems to permeate most variables examined and is likely to be dominantly associated with annual report disclosure levels.</p>
Firth (1979)	UK	180	48	Size, Listing status, Audit firm	Standard t-test, Wilcoxon matched-	- The mean of the disclosure indexes for listed and unlisted manufacturing

Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
					pairs signed-rank test, Kendall rank correlation (tua)	companies were low showing that companies tend to give little information above what they have to disclose under the Companies Acts. - Both explanatory variables size and listed manufacturing companies were related to disclosure but the auditor factor had no impact at all.
Chow and Wong-Boren (1987)	Mexico	52	24	Size, Leverage, Proportion of assets in place	Multiple linear regression, $R^2 = 15\%$	- The extent of disclosure was significantly and of the three independent variables, only firm size had statistically significant coefficient at the 0.01 level. - Voluntary disclosure varied widely within the Mexican manufacturing companies listed on Mexican Stock Exchange.
Wallace (1987)	Nigeria	47	185	Size, Profitability, Liquidity, Location of the company's parent company, Type of management, Type of business	Multiple linear regression, adjusted $R^2 = 6.7\%$	- Positive significant association between asset size and the level of aggregate disclosure at 0.05 levels. - Type of management was found to be the only variable associated with the extent of statutory disclosure.



Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
Cooke (1989a)	Sweden	90	224	Listing status, size, Industry type, Internationality	Chi Square test, Cramer's V. contingency coefficient, One-way ANOVA, Stepwise multiple regression, $R^2 = 60\%$	<ul style="list-style-type: none"> <li>- Although it is concluded that only listing status (the most important explanatory variable in the model in term of <math>R^2</math>), industry type and size are two significant factors, it is shown that no matter which one of the three size variables: assets, annual sales, and number of shareholders is selected.</li> </ul>
Tai et al. (1990)	Hong Kong	76	11	Size, Industry type, Audit firm	Chi-square test, Friedman two-way analysis of variance by ranks	<ul style="list-style-type: none"> <li>- Major departure from disclosure requirements (non-compliance in average were 22%).</li> <li>- Size of the Hong Kong companies is significantly associated with the departure from disclosure requirements while industry type and audit firm are not.</li> </ul>
Cooke (1992)	Japan	35	165	Size, Listing status, Industry type	Multiple linear regression, $R^2 = 60\%$	<ul style="list-style-type: none"> <li>- Multiple listed corporations disclose more information in their annual reports than corporations listed only on the Tokyo Stock Exchange.</li> <li>- The company size variable, derived by factor analysis, was included in the multiple linear regression equation was</li> </ul>

Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
Malone et al. (1993)	U.S.A	125	129	Size, Listing status, Leverage, Profitability, Audit firm, Number of shareholders, Industry type, Foreign directors, Foreign operations	Stepwise regression, $R^2 = 32\%$	<p>found to be an important influence on disclosure.</p> <ul style="list-style-type: none"> <li>- Japanese manufacturing corporations disclose significantly more information than other types of corporations, a finding consistent with the economic significance of manufacturing in Japanese economy.</li> <li>- Listing status, leverage and number of shareholders was statistically significant in explaining the extent of financial disclosure.</li> </ul>
Ahmed and Nicholls (1994)	Bangladesh	63	94	Size, Leverage, Multinational company influence, Audit firm	Multiple linear regression, $R^2 = 53.1\%$	<ul style="list-style-type: none"> <li>- None of the Bangladeshi companies disclosed all mandatory items. Only 4 out of 63 scored more than 90%.</li> <li>- Disclosure compliance was positively associated with the reporting entity's audit firm size and its ownership</li> </ul>



Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
						structure, that is, whether it was a subsidiary of a multinational enterprise or a local company. - Estimated probability of compliance with Bangladesh requirements was 88.5%.
Hossain et al. (1994)	Malaysia	67	78	Size, Ownership structure, Leverage, Assets-in-place, Audit firm, Listing status	Univariate analysis (Student's t-test and Mann-Whiney U test), Multivariate analysis (multiple regression model), adjusted $R^2 = 28.6\%$	- Both univariate and multivariate analyses showed that corporate size, listing status, and ownership structure found to be significantly associated with voluntary disclosure in Malaysia. - Firm size was the most strongly significant variable associated with the extent of voluntary disclosure.
Wallace et al. (1994)	Spain	50	16	Size, Listing status, Leverage, Profitability, Audit firm, Earnings, Liquidity, Industry type	Rank OLS regression, adjusted $R^2 = 60\%$	- The association between the index of comprehensive disclosure and firm size on the one hand and listing status on the other were found to be significantly positive. - The association between the index of comprehensive disclosure and liquidity was significantly negative.

Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
Meek et al. (1995)	U.S.A, UK, France, Germany and Netherlands	226	85	Size, Country/Region origin, Industry type, Leverage, Multinational operations, Profitability, Listing status	Multiple linear regression, $R^2 = 35\%$	- While company size, country/region, listing status, and, to a lesser extent, industry type are the most important factors explaining voluntary disclosure overall, the importance of the factors varied by information type.
Raffournier (1995)	Switzerland	161	30	Size, Internationality level, Percentage of fixed assets, Audit firm, Industry type, Profitability, Leverage, Ownership structure	Univariate analyses (one-way variance and linear regression) and Multivariate analyses (multiple linear regressions), $R^2 = 42\%$	- The extent of disclosure found to be significantly related to size, internationality level, percentage of fixed assets, audit firm and, to a smaller extent, to industry type and profitability explaining 42% of the dependent variable variations. Inversely, no significant relationship was found for leverage and ownership diffusion. - When explanatory variables examined simultaneously, the only significant variables were size and internationality level.
Wallace and Naser (1995)	Hong Kong	80	142	Size, Leverage, Ownership	Ranked and unranked OLS	- The results of both types of analysis were similar and indicated that disclosure



Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
				distribution, Profitability, Rate of return, Liquidity, Industry type, Audit firm, Official domicile	regression, adjusted $R^2 = 58.6\%$ (ranked regression), adjusted $R^2 = 58.3\%$ (unranked regression)	varied positively with asset size and industry type. On the other hand, surprisingly, disclosure scores were found to be negatively associated with profitability.
Ahmed (1996)	Bangladesh	118	150	Size, Audit firm, Leverage, Multinational companies, Professional qualifications of the principal accounting officers	Multiple linear regression, $R^2 = 36.6\%$	<ul style="list-style-type: none"> <li>- The majority of the companies disclosed much information of a statutory nature, primarily because of the enforcement of the Securities and Exchange Rules following the adoption of 18 selected International Accounting Standards; the level of voluntary disclosure was very low.</li> <li>- Subsidiaries of multinational enterprises and companies audited by large audit firms disclosed significantly more information in their annual reports.</li> </ul>
Al-Modahki (1996)	Saudi Arabia	33	121	Size, Industry type, Audit firm, Foreign investment,	Wilcoxon matched-pairs signed-rank test, Mann-Whitney test	- Using the Wilcoxon matched-pairs test, the author found that all three measures of disclosure (aggregate, mandatory and voluntary) showed significant changes

Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
				Length of incorporation		over the selected years, except between 1989 and 1990. - Using the non-parametric Mann-Whitney test, a significant association was found between extent of aggregate disclosure and only one size variable – paid-in capital – during the last three years. - Industry type was found to be significant between two industries only (i.e. industry 1: banking and industry, and industry 2: manufacturing and cement) for the years 1986, 1987 and 1988.
Soh (1996)	Malaysia	65	RCDI index 118 items, NASCDI index, 106, ACDI index 148, and VDI 116	Size, Foreign ownership, Industry type, Profitability, Leverage	Multiple regression linear	- The test results indicate a significant relationship between: 1) ACDI and two variables, i.e. profitability (negative) and foreign ownership (positive) in both 1991 and 1992 (adjusted R <sup>2</sup> were: 0.12 in 1991, 0.06 in 1992, and 0.028 in 1993); 2) RCDI and (a) foreign ownership (positive) in 1991, (b) industry – consumer group – (positive) in 1992, (c) industry – building (negative) in 1993



Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
						(adjusted R <sup>2</sup> were: 0.12 in 1991, 0.08 in 1992, and 0.021 in 1993); 3) NASCDI and (a) foreign ownership (positive) and profitability (negative) in 1991, (b) profitability (negative) in 1992 (adjusted R <sup>2</sup> were: 0.11 in 1991, 0.12 in 1992, and 0.021 in 1993); 4) VDI and (a) industry – services – (positive in 1991, (b) company size (positive) in 1992 and 1993 (adjusted R <sup>2</sup> were: 0.29 in 1991, 0.18 in 1992, and 0.23 in 1993). - The study indicated that the explanatory power of the company-specific variables varied over time.
Al-Mulhem (1997)	Saudi Arabia	40	165	Size, Profitability, Industry type, Listing status, Audit firm	Univariate analyses (linear regression, one-way ANOVA) and Multivariate analyses (stepwise multiple regression), adjusted R <sup>2</sup> = 36.6%	- The univariate analysis before excluding the five companies revealed that there was a significant relationship between the extent of disclosure and three variables: earnings margin at 0.05 level, type of audit and listing status at 0.10 level. After the five companies were removed, the results revealed that size and listing status were statistically

Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
Inchausti (1997)	Spain	138	50	Size, status, Profitability, Audit firm, Leverage, Dividends, Industry type	Stepwise regression, $R^2 = 45\%$ , Panel data analysis, $R^2 = 74\%$	<p>significant explanatory variables.</p> <p>- The multiple regressions, on the other hand, revealed that the following three variables were statistically significant: listing status, size (as measured by sales) and rate of return.</p> <p>- Size, audit firm, and listing status provide a satisfactory basis for explaining the attitude of firms regarding the provision of financial information, while profitability, leverage, dividends and industry type did not provide such evidence.</p> <p>-The analysis of panel data indicates the influence of legislation over Spanish companies showing a strong increase in disclosure.</p> <p>- It could be argued that although positive theory can be used to provide an explanation of the attitudes of Spanish firms towards information disclosure, it is necessary to recognise the effect of legislation.</p>



Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
Marston and Robson (1997)	India	29	17	Size	Wilcoxon matched-pairs signed-rank test	<ul style="list-style-type: none"> <li>- Disclosure had increased over time and that in both periods considered was positively associated with company size.</li> <li>- Univariate analyses generally supported the existence of the hypothesised relationships between extent of disclosure in annual reports and firm size, profitability performance, financial risk (leverage), and number of employees.</li> <li>- The most important independent variables in the multivariate regressions were the type of auditor the firm had (Big 6 versus, other) and the number of employees.</li> <li>- Statistically, significant variables in multiple regressions include audit firm, number of employees, listing status, and profitability performance.</li> </ul>
Patton and Zelenka (1997)	Czech Republic	50	-	Size, Listing status, Financial risk (leverage), Profitability performance, Audit firm, Number of employees	Univariate analyses (simple correlation), Multivariate analysis (multiple linear regression), $R^2 = 25\%$	<ul style="list-style-type: none"> <li>- Univariate analysis showed a positive influence of size, internationality, listing status, auditor type and ownership diffusion on voluntary compliance with IAS. On the other hand, no significant</li> </ul>
Dumontier and Raffournier (1998)	Switzerland	133	-	Internationality, Size, Ownership diffusion, Capital intensity,	Univariate analysis (Mann-Whitney U-test and Chi-square) and Multivariate	

Table 4.2: Studies on Disclosure and Company Characteristics

Researcher(s)	Country(s)	Number of Companies	Disclosure Items	Explanatory Variables	Statistical Model and Criteria, R-square or similar measure	Findings
				Profitability, Audit firm, Listing status	analysis (Multiple linear regression)	relationship was found for leverage, profitability and capital intensity. - Multivariate analysis revealed that firms, which comply with IAS, are larger, more internationally diversified, less capital intensive and have a more diffuse ownership.
Ahmed and Courtis (1999)	Mixed	29 studies in various countries	-	Size, Listing status, Leverage, Profitability, Audit firm	Meta-Analysis	- Significant and positive relationship between disclosure levels and size, listing status and leverage. - No significant association is found between corporate profitability and size of audit firm, with aggregate disclosure levels.



As it can be observed from the review summarised above subsequent to the pioneering study by (Cerf 1961) the majority of early studies focused on the U.S.A. This field research was extended first to other developed countries in the late 1970s and then to the developing countries in the late 1980s. Another interesting trend is that, despite the fact that the majority of studies focused on only one year per firm, a number of studies, mostly, in the 1990s covered more than one year (a maximum of five years was considered by (Al-Modahki 1996)). The number of firms in each study has varied from 33 to 527.

The company-specific characteristics (the independent variables) were examined as possible predictors of the extent of disclosure ranged from two (Buzby 1975) to 24 (Courtis 1979). Size (generally surrogated by total assets, net or gross sales, and market capitalisation) was the most popular variable considered in the 30 studies reviewed. Listing status and industry type were the second most popular firm factors featuring in more than half of the studies. Other popular company-specific characteristics featuring in at least a third of the studies reviewed were profitability, leverage/liquidity ratios and auditor type.

In all the studies reviewed, the extent or quality of disclosure (the dependent variable) was measured by a disclosure index. The information items forming the basis of the index varied considerably, ranging from 11 (Tai et al. 1990) to 224 (Cooke 1989a). Unlike most of the early studies, which used weighted indices, the observed trend in recent studies was to use unweighted indices. Weighting the indices was accomplished by employing weights determined subjectively by the researcher(s) (e.g. Cerf 1961), replicating weights used in previous studies (e.g. Singhvi and Desai 1971) or using weights attached in a questionnaire survey of users' perceptions of items of information (e.g. Buzby 1975; Stanga 1976; Belkaoui and Kahl 1978). The unweighted index was calculated using a dichotomous procedure – a non-disclosure results in a score of zero and disclosure results in a score of one. Chow and Wong-Boren (1987) provided some evidence that there may be no significant difference between weighted and unweighted disclosure indices. In this respect, Marston and Shrivess (1991) suggested that where there are numbers of items in the index, the unweighted and weighted scores would give similar results.



Different statistical procedures have been used to assess the relationship between the extent of disclosure and company-specific factors. The main analytical tools used in the early studies were univariate statistics (e.g. non-parametric Chi-square and Wilcoxon matched-pairs signed rank test or parametric ANOVA). Moreover, despite some recent studies using univariate analysis (e.g. Cooke, 1993; Al-Modahki, 1996), the fact is that most of the studies carried out after late 1980s have employed multiple regression procedure. The sophistication and innovativeness of analysis of regression methodology are improving continuously. For instance, Cooke (1989a) used different rigorous dummy variable manipulation procedures within a stepwise multiple (OLS) regression, while Wallace and Naser (1995); Wallace et al. (1994) used ranked and unranked OLS regression to scope with the data sets with non-linear and monotonic relationships between dependent and independent variables.<sup>4</sup> The explanatory power of estimated models was high (over 60%) in studies by Inchausti (1997); Wallace et al. (1994), while other estimated models had little explanatory power (e.g. Chow 1987; Wallace 1987). It is interesting to point out that in the studies the  $R^2$  or adjusted  $R^2$  found to be high are mainly carried out in developed countries whereas studies with  $R^2$  or adjusted  $R^2$  found to be low are mostly those that were undertaken in developing countries.

Generally speaking, it can be argued that the majority of studies reviewed in this section indicated that size and listing status are positively associated with the extent of disclosure 'see Table 4.1'. However, some inconsistency was also observed (Buzby 1975; Malone et al. 1993; Singhvi 1968; Spero 1979; Stanga 1976; Wallace and Naser 1995). On the other hand, among the studies that considered both size and listing status, it is found that listing status to be the most important explanatory variables (Al-Mulhem 1997; Cerf 1961; Cooke 1989a; Singhvi and Desai 1971), while other found to be size (Buzby 1975; Giner 1997; Hossain et al. 1994; Patton and Zelenka 1997). Interestingly, studies by Singhvi

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<sup>4</sup> A critical review of different transformation of variables and the use of rank regression in disclosure studies when dealing with non-linear and linear relationships when relationship is monotonic found in the recent study by Cooke (1998). In this study, regression based on untransformed data, log odds ratio, ranks and normal scores were applied to data on the disclosure of information in the annual reports of companies in Japan and Saudi Arabia and found that regression using Normal Scores has advantages over ranks that, in part, depends on the structure of the data.



and Desai (1971) reported different results when they used both univariate and multivariate analysis.

As far as the industry type is concerned, it can be argued that despite the fact that this variable was also found to be significantly associated with the extent of disclosure in a considerable number of studies, other empirical studies disagreed with such result 'see Table 4.1'. With respect to the variables liquidity and leverage ratios, significant association has been proved in developed countries with regard to both variables (i.e. the relationship proved to be significantly positive and negative), although most results were against supporting such relationship in developing countries. In addition, regarding the variables auditor type and profitability ratios, although the later variable proved to be positively and negatively significant, generally speaking, results for both variables in both developed and developing countries are not clear or indeed contradictory. Finally, an interesting point to note is that, surprisingly, the negative association between the extent of disclosure and the profitability variable ratios for some previous empirical studies is against the theoretical arguments which will be explored in detail in the Methodology Chapter since this variable has been chosen as one of the variables to be investigated.

Hence, the results of the studies reviewed in this section have been mixed and to a certain extent inconsistent and sometimes contradictory. As also pointed out by Wallace et al. (1994), such results are perhaps due to the fact that the research studies dealt with differing experimental units – in terms of the type and number of firm characteristics examined, sample size, different statistical methods, countries and years brought into their various research designs. The components of their disclosure indexes differed in respect of the list of items – their comprehensiveness and weighting. Moreover, in addition to sampling error, differences in definition of the explanatory variables have either individually or severally contributed to the mixed results. A further investigation featured by: 1) focusing on the mandatory disclosure while few studies explored this aspect, 2) investigating the extent of disclosure in compliance with all relevant IAS to JIC, and 3) using both univariate (parametric and non-parametric tests) and multivariate (multiple linear regression and stepwise regression) analyses, of the

association between the extent of disclosure and corporate characteristics of companies in a country which was not subject to such a previous study (Jordan), therefore, may contribute to efforts that have been made to identify the factors affecting disclosure practices of companies.

As this review showed that neither Jordan nor any Jordanian companies have been subject to any disclosure studies in compliance with all relevant IAS, therefore little is known about the impact of company-specific factors on the extent of disclosure in compliance with IAS in Jordanian corporate annual reports. In addition, this review indicates that company size, industry type are two of the company-specific factors (independent variables) that were considered and found to be significantly associated with the extent of disclosure in a number of studies that were carried out in various countries (developed and developing countries). This research also attempts to examine the impact of not only these factors on the extent of disclosure in compliance with IAS in the annual reports of JIC but also the impact of other popular factors considered previously showed a contradictory results such as leverage ratios, profitability ratios, and type of auditor.

In this study, the researcher also examines the association between the extent of disclosure in compliance with IAS and selected corporate characteristics over six years to determine not only whether there exist significant relationship between dependent and independent variables but also is such a relationship consistent over the years. This is achieved by analysing the annual reports of 50 Jordanian Industrial Companies listed on Amman Stock Exchange over the six years, 1995, 1996, 1997, 1998, 1999, and 2000. Thus, the sample is larger than many of the previous studies, and the period covered in this study is the maximum period has ever been covered in similar previous studies (a maximum of five years was considered by Al-Modahki (1996).

#### **4.4 Theoretical and empirical literature concerning the financial consequences of increased disclosure**

It has been argued that one of the major financial consequences of increased disclosure is its impact on the cost of equity capital 'see Chapter Five – Research



Methodology and Hypotheses'. The theoretical and empirical literature concerning this effect is the subject of the next section. Theoretical arguments and empirical studies concerning share price volatility, as another consequence influenced by increasing extent of disclosure, however, will be explored in a separate followed section.

#### **4.4.1 Theoretical and empirical literature concerning the impact of disclosure on cost of equity capital**

A major link between economic and financial theory and contemporary accounting thought is the notion that a firm's commitment to greater disclosure should lower costs of capital that arise from information asymmetries. Information asymmetries create costs by introducing adverse selection into transactions between buyers and sellers of firm shares. A commitment to increased levels of disclosure reduces the possibility of information asymmetries arising either between the firm and its shareholders or among potential buyers and sellers of firm shares. This, in turn, should reduce the discount at which firm shares are sold, and hence lower the costs of issuing capital (Baiman and Verrecchia 1996; Diamond and Verrecchia 1991; Levitt 1998).

It could be argued that the extent to which firms benefit from increased disclosure remains a controversial issue in the absence of significant empirical evidence. Several models of asset pricing suggest increased disclosure reduces the cost of equity capital but little empirical evidence exists to support these claims. This absence of evidence fuels an ongoing debate among practitioners regarding the benefits of enhanced disclosure. For example, the Special Committee on Financial Reporting of the American Institute of Certified Public Accountants (AICPA 1994) (i.e. Jenkins Committee) states that an important benefit of greater disclosure is a lower cost of equity capital. In this regard, Huddart et al. (1999) argued that the choice of the corner solution of full disclosure is robust even in the absence of cost-of capital considerations. Verrecchia (1999) explaining Huddart et al. arguments broadly saying,

*"...full disclosure may result even in the presence of an entrepreneur/managers of the firms who exploit shareholders through*



*unrestricted insider trading, because it is likely to achieve the greatest market depth (P.282)."*

In rebuttal, the Financial Executive Institute (Berton 1994) argued that the enhanced disclosure called for in the Committee's report are targeted to stock traders which add to share price volatility thereby increasing risk and leading to a higher cost of equity capital. Such an argument supported also by Ball (1995); Barth et al. (1999). Ball (1995) observed that international harmonisation of accounting standards is not necessarily a desirable goal. He pointed out that multiple users of accounting information have multiple objectives and that country-specific GAAP evolves in a political process balancing country-specific economic environments, users, and objectives. Barth et al. (1999), moreover, showed also some direct evidence that cost of capital is not always decreasing in harmonisation. Their results suggest that regulators and standards-setters should exercise caution in their harmonisation efforts. More specifically, the fundamental point in their arguments is that if one increases public disclosure, and increased public disclosure has the collateral effect of making private information acquisition less costly, then more disclosure can make markets more or less liquid. More (less) liquidity, in turn, implies a lower (higher) cost of capital. The reason of this result is clear. The direct effect of more disclosure is that generally it makes markets more liquid. However, when acquiring private information is costly, the proportion of informed investors is endogenous. If a collateral effect of public disclosure is to make private information acquisition cheaper, then it is conceivable that more disclosure results in more private information acquisition, which, in turn, may result in less liquid markets.

Theoretical research supporting a negative association between disclosure level and cost of equity capital has followed two related thrusts. The first is that greater disclosure enhances stock market liquidity thereby reducing cost of equity capital either through reduced transactions costs or increased demand for a firm's securities (Amihud and Mendelson 1986; Barth et al. 1999; Copeland and Galai 1983; Demsetz 1968; Diamond and Verrecchia 1991; Glosten and Milgrom 1985; Huddart et al. 1999; Verrecchia 1996). Amihud and Mendelson claimed that the cost of equity capital is greater for securities with wider bid-ask spreads because investors demand compensation for added transactions costs. By disclosing



private information, firms can reduce the adverse selection component of the bid-ask spread and reduce their costs of equity capital. Diamond and Verrecchia, suggested that greater disclosure reduces the amount of information revealed by a large trade thereby reducing the advance price impact associated with such trades. As a result, investors are willing to take larger positions in a particular firm's stock than they otherwise would. This increases the demand for the firm's securities and raises the current price of the firm's stock, thus reducing the cost of equity capital.

The second stream of research suggests that greater disclosure reduces estimation risk arising from investor's estimates of the parameters of an asset's return or payoff distribution. That is, greater uncertainty exists regarding the "true" parameters when information is low. If the estimation risk is non-diversifiable, investors required compensation for this additional element of risk (Barry and Brown 1985; Clarkson et al. 1996; Coles and Loewenstein 1988; Coles et al. 1995; Handa and Linn 1993; Klein and Bawa 1976). Barry and Brown (1985); Coles et al. (1995); Handa and Linn (1993) used a Bayesian Approach which recognises that investors or predictive distributions that reflect their uncertainty about the true parameters. They concluded that estimation risk is non-diversifiable, is not reflected in the traditional CAPM formula for market beta (which is derived under the assumption that the parameters of the distribution are known) and that estimates of market beta are systematically too low for low information securities because market beta fails to incorporate estimation risk. Clarkson et al. (1996) stated that estimation risk has a significant non-diversifiable component if resolution of uncertainty about low information securities affects the return earned on the market portfolio. They also argue, however, that the breadth of modern securities markets allows the correlation of returns induced by the resolution of uncertainty to be diluted to the point that any non-diversifiable component of estimation risk is immaterial. Nevertheless, they concluded that the extent of the impact of estimation risk remains, fundamentally, an empirical question.

In their theoretical argument, Baiman and Verrecchia (1996) have established a link among the liquidity needs of the capital markets, the optimal level of



disclosure, the cost of capital, agency costs, and insider trading, in a model in which the costs and benefits associated with disclosure are endogenous. It is assumed, however, that the nature of the capital market is characterised by the potential liquidity needs of investors from whom capital is raised. Concerning the link among the first three factors mentioned above, Baiman and Verrecchia argued that market illiquidity and cost of capital fall because more disclosure encourages investment by individuals who may have future liquidity needs. Thus, as investors potential liquidity needs increase, the optimal level of disclosure increase, the liquidity of the market increases, the cost of capital decreases, the expected profits of insider trading decrease, and the manager's residual moral hazard problem increases leading to decreased efficiency. Hence, their analysis predicted a direct relationship between the use of such contracts, the market's potential liquidity needs, and the observed level of disclosure.

Although existing empirical research tends to support a negative association between disclosure level and cost of equity capital, the authors of the Jenkins Committee (1994, P.38) report admit that the evidence to date does not present "an empirical case that informative disclosure lowers the cost of capital." Such an argument is because prior research has examined the impact of disclosure on variables that are expected to be positively related to cost of equity capital and not on cost of equity capital itself (Frankel et al. 1995; Healy and Palepu 1995; Healy et al. 1995; Welker 1995).

It could be argued that, empirically, little is known about the impact of increased disclosure on cost of equity capital in both: developing and developed countries. Such an issue, therefore, is providing the significant of this study in the field of accounting and finance. The empirical studies investigated the significant of such impact, however, are reviewed below in chronological order.

#### **Firth (1984)**

The purpose of Firth's empirical study was to examine whether the amount of voluntary disclosure in corporate annual reports of 100 manufacturing companies in the U.K selected from 1000 largest companies in 1977 was linked to the assessment of stock market risk. Specifically, the level of disclosure, derived from



a weighted disclosure index consisted of a list of 48 items, was examined to see if it was associated with systematic risk measured by beta ( $\beta$ ), unsystematic risk measured by variance of residuals ( $\sigma^2_{ej}$ ), and total return risk measured by variance of returns ( $\sigma^2 R_j$ ). Estimates of these risk measures were calculated from the Market Model assuming that total return risk is a function of the systematic and unsystematic risk. The coefficients of the Market Model were calculated using 60 observations of monthly security returns from January 1972 to December 1976.

The study involved regressing measures of leverage, earnings beta, size, dividend yield and disclosure on measures of security risk. Leverage was measured as the market value of interest bearing debt divided by the market value of equity. The market values were measured as at the end of 1976. Firm size was taken as the total market value of the equity shares at the end of 1976, and the dividend yield was also measured as at the end of 1976. Earnings beta is measure as the co-variability of firm's reported earnings available for shareholders with the reported earnings available for ordinary shareholders of the market as a whole, i.e.

$$\text{Earnings beta} = \text{COV} (E_j, E_m) / \sigma^2 (E_m)$$

Where  $E_j$  = earnings of firms  $j$  and  $E_m$  = earnings of all firms in the market. Estimating the earnings beta was measured by using twelve years of annual earnings data, where the market estimate of earnings was derived from using all listed manufacturing firms.

The empirical tests found no evidence of the disclosure score having any impact on the level of systematic risk ( $\beta$ ). Firth argued that although greater amounts of disclosure may be of use to the users of accounts, it is not because of assessing present and future levels of systematic risk. Moreover, the tests also showed that the amount of disclosure had no impact on unsystematic risk ( $\sigma^2_e$ ) and variance of return ( $\sigma^2 R$ ). Such results are interesting, however, since its providing empirical evidence that there is no impact of disclosure on the cost of capital.

**Botosan (1997)**

In this empirical study, Botosan (1997) examined the association between voluntary disclosure level provided in the 1990 annual reports of a sample of 122 machinery industry U.S firms and the cost of equity capital by regressing firm-specific estimates of cost of equity capital on market beta, firm size and a self-constructed measure of disclosure level. The selection of items included in the weighted index for measuring the extent of disclosure were those items identified by investors and financial analysts as useful in investment decision making. The selection of these items was guided by recommendations provided in the AICPA (1994) study of business reporting (i.e., the Jenkins Committee report), the international survey of investors information needs (1987), and the Canadian Institute of Chartered Accountants (1991) study of the annual reports. In addition, firm size measures used were the market value of equity (MVAL) at the end of 1990, the book value of total assets (ASSET), the net book value of property, the plant and equipment (PPE) and sales is the total sales, the number of employees reported, all for the year ended 1990.

Beta was estimated, however, via a Market Model regressing of at least 24 of the 60 monthly return observations in the five-year period ended May 31, 1991 on the market index. The cost of equity capital estimated using an accounting based valuation formula developed by Edwards and Bell (1961); Feltham and Ohlson (1995); Ohlson (1995) which specifies a relation between equity values and current book values and future abnormal earnings. The derivation of the valuation formula is based on the well known dividend discount formula which states that the market price of a firm's stock ( $P_t$ ) is equal to the sum of expected dividends  $\{E_t(d_{t+i})\}$  discounted at the cost of equity capital ( $r$ ). Since current share price specifies in terms of accounting numbers – current and future book values ( $b_t$  and  $b_{t+i}$ ) and future earnings ( $x_{t+i}$ ), Ohlson (1995) argued that all gains and losses affect forecasted book value flow through forecasted earnings. The above equation, therefore, modified as a function of current book value plus the discounted sum of expected abnormal earnings. Setting the time ( $T$ ) equal to four, solve the resulting fourth-degree polynomial equation for cost of equity capital,



re/BV; using Mathematical software, Botosan (1997) identified the formula for estimating re/BV.<sup>5</sup>

This empirical study provided direct evidence of an association between the cost of equity capital and disclosure level, and an indication of the magnitude of its effect. Holding cross-sectional variation in market beta and firm size constant, a negative association between cost of equity capital and voluntary disclosure level for firms that attract a low analysts following was reported. For firms with a high analyst following, however, no evidence of an association between measure of disclosure level and cost of equity capital observed. She referred such result to the reason that the disclosure measure was limited to the annual report and accordingly might not provide a powerful proxy for overall disclosure level since analysts play a significant role in the communication process. The study provided some preliminary evidence on the type of disclosure that seemed to play an important role in reducing the cost of equity capital. That is, for firms with low analyst following, disclosure of forecast information and key non-financial statistics is particularly important while for firms with high analyst following, disclosure of historical summary information is beneficial. In addition, the study showed that among firms without a large analyst following, those with higher quality-disclosures had higher prices, after controlling for other factors affecting price.

The limitation of the study, however, is that it was based on observations for firms in one industry and for one year only, which make the results not generalised to other industries, different time periods, and different countries. In addition, the cost of capital is based on an accounting construct which itself will be affected by the level of disclosure and therefore enable a spurious result to arise.

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<sup>5</sup> Botosan (1997) argued that cost of equity capital could be estimated using the Capital Asset Pricing Model (CAPM) which defines expected returns as the sum of the expected risk free rate ( $E(r_f)$ ), the product of a firm's estimated market beta ( $\beta$ ) and the expected risk premium ( $E(r_m - r_f)$ ). He added, as CAPM assumes cross-sectional variation in market beta alone derives variation in the cost of equity capital, and as a result the CAPM approach provides no role for disclosure level unless one assumes cross-sectional variation in disclosure level induces variation in beta, a notion that has no theoretical support, the accounting based valuation formula was adopted in his study for estimating the cost of equity capital. It has to be argued, however, this study is an attempt to examine empirically the notion that variation in the extent of disclosure in compliance with IAS could induces variation in beta as a measurement for the systematic risk and consequently variation in cost of equity capital.



### Sengupta (1998)

As theoretically argued that a policy of timely and detailed disclosures reduces lenders' and underwriters' perception of default risk for the disclosing firm and reducing its interest cost of issuing debt, this empirical study investigated the association between an industrial firm's overall disclosure quality ratings and its cost of debt financing, which could be seen as an extension to Botosan (1997) study in investigating the consequences of increased disclosure quality. The study eliminated the banking and insurance industries since it believed that their financing decisions are affected by somewhat different factors than those of the industrial firms. A measure of a firm's overall disclosure quality is obtained from the annual volumes of the Report of the Financial Analysts Federation Corporate Information Committee.<sup>6</sup>

For estimating the cost of debt, there were two alternative methods adopted by the research: 1) the yield to maturity on the first debt issue (YIELD), which represents the effective rate of interest that equates the present value of the principal and interest payments with the amount paid to the lender, and 2) the total interest cost of new debt issues (ICOST), which represents the effective rate of interest at which the present value of the principal and interest payment is equal to the amount received by the firm, net of underwriter discount. Firms that did not have three consecutive years' of information, therefore, were deleted leaving final sample for the analysis, involving YIELD consisted of 114 firms while 103 firms involving ICOST.

By adopting multiple linear regression models, the study provided evidence that both measures of cost of debt employed were negatively associated with the disclosure ratings, after controlling for other potential determinants of a firm's cost of debt. Firms that were rated favorable by financial analysts for the degree of detail, timeliness and clarity of disclosures were perceived to have a lower default risk premium and were rewarded with a lower cost of borrowing. Sengupta (1998)

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<sup>6</sup> In 1989 the Financial Analysts Federation (FAF) combined with the Institute of Chartered Financial Analysts (ICFA) to form the Association for Investment Management and Research (AIMR). From 1990 onwards, therefore, the corporate disclosure evaluation was published by AIMR under the title: Corporate Information Committee Report (CICR) and the evaluations still prepared by a committee of the FAF.



argued that the consequences of disclosure quality, therefore, are broader than a focus on equity issues alone could reveal. In addition, the findings also indicated that the relative importance of disclosures was greater in situations where there was greater market uncertainty about the firm as reflected by the standard deviation of daily stock returns.

### **Richardson and Welker (2001)**

This study explored the relation between financial and social disclosure and the cost of equity capital for a sample of 225 Canadian firms' observations from 87 different firms with yearend in 1990, 1991, and 1992. Richardson and Welker (2001) empirical measures of financial and social disclosure were drawn from the joint Society of Management Accountants of Canada (SMAC) / University of Quebec at Montreal (UQAM) ranking. In addition, the study followed Botosan (1997); Botosan and Plumlee (2000); Gebhardt et al. (2000), for estimating the cost of equity capital using an accounting based valuation model developed in Edwards and Bell (1961); Feltham and Ohlson (1995); Ohlson (1995).

For testing whether the financial and social disclosure scores were valid measures of those disclosures, Richardson and Welker (2001) run the regression between financial disclosure and firm size, financial performance, leverage, and financial analysts. Their result revealed that each of the variables except financial performance exhibited a significant and positive relation with financial disclosure, a result consistent with past literature. Moreover, a regression model was employed for testing the relationship of social disclosure scores with firm size, industry membership, financial performance, leverage, and analyst following (measured by the number of analysts making 1-year earning per share forecast). The result was encouraging as the measure of social disclosure appeared to be related to variables that the past literature suggests it should be.

As it was found that risk premium was negatively related to the number of analysts following the firm and positively related to leverage (Gebhardt et al. 2000), this study included these variables as control variables in testing the relation between cost of equity capital and financial disclosure and social disclosure.

Consistent with prior empirical research, the study found significant negative relation between financial disclosure and cost of equity capital for firms with low analysts following confirming Botosan (1997) findings, while the relation with the social disclosure was significantly positive.

In summary, in spite of the regulatory and theoretical support for increased disclosure by firms, direct evidence of a negative empirical relation between disclosure levels and the cost of capital is limited and mixed (Botosan 1997; Botosan and Plumlee 2000; Richardson and Welker 2001) on cost of equity capital, and on the cost of debt (Sengupta 1998). Aside from the difficulties of measuring the cost of capital directly and estimating this relation, one potential explanation for the mixed empirical results argued by Richardson and Welker (2001) who indicated that if there is little variation in the information disclosed due to effective regulatory interventions, or if analysts routinely generate information independently of the firms' own disclosures, then the power of empirical tests will be significantly reduced. For example, Botosan (1997); Richardson and Welker (2001) documented a statistically significant negative relation between the level of financial disclosure and cost of equity capital for their samples of USA and Canadian firms, respectively. This relation, however, holds only for the subset of their sample characterised by limited analyst following.

A stronger test of the relationship between corporate information disclosures and the cost of equity capital is possible by choosing markets and information sets where corporate disclosure plays a larger role in market valuations. Such a relationship will be tested in Jordan, a developing country, with a history of loose and vague financial reporting requirements before adopting fully the IAS in 1998. This situation created an ideal environment for testing the possible impact of disclosure in compliance with IAS not only on the selected JIC cost of equity capital, but also on JIC systematic, unsystematic, risk premium, and share price volatility issues have not been empirically tested before neither in developed nor in developing countries.



#### 4.4.2 Theoretical and empirical research concerning the impact of disclosure on share price volatility

It is argued that one of the likely implications of inadequate corporate disclosure is the greater price dispersion in the securities market. Stigler (1961, P.214) wrote, *“Price dispersion is a manifestation – and, indeed, it is a measure – of ignorance in the market.”* Adequate disclosure of information minimises ignorance in the market and causes the market price to reflect the *“true value”* of the security; consequently, the price dispersion is narrowed down.

Graham et al. (1962, P.28) argued, therefore, true value or intrinsic value of a security, by definition, is *“the value which is justified by the fact, e.g., assets, earnings, dividends, definite prospects, including the factor of management.”* The current market price, on the other hand, is the price at which securities are quoted. Singhvi and Desai (1971) argued

*“Dispersion between the market price and the intrinsic value of a security in part is the result of the quality of information – the more superior the quality of information disclosed, the lower will be the price dispersion. Investors tend to buy securities at a price which is higher than the intrinsic value, or they sell at the price which is lower than the intrinsic value for several reasons, and one of the reasons is the lack of information which is necessary to determine the intrinsic value of the security”* (P.136).

With full disclosure of information, one would expect less drastic shifts in estimates of expected profitability of a given issue, a greater scope for scientific investment analysis, a diminished reliance on and use of rumors, a reduction in the scale of manipulation practices, and a narrower dispersion between the intrinsic value and market price of a security (Friend and Herman 1964, P.391).

In the absence of adequate corporate disclosure of information, dispersion in the market price of a security is likely to be wider than what it would be otherwise. Consequently, some corporations sell their securities at a price, which is higher than the intrinsic value of the security, while others sell for less than the intrinsic value. The cost of capital in the former case, therefore, is likely to be lower than in the latter case if the intrinsic value of the security is the same for both. This shows that investment decisions by the investing public affect the price of capital in security markets, which in turn affect decisions by corporate managements as to

investment of funds in new capital goods or inventories. If the cost of capital is relatively high in a given period, the cutoff rate for accepting investment projects will be relatively high, and several projects will be lower rate of return but useful to the economy probably will be rejected. These decisions, in this manner, affect allocation of resources and are likely to have major implications for the maintenance of a high level of business activity, employed and economic growth.

Since the intrinsic value is based on the earnings potential of a corporation, in addition to other factors, the security prices are in fact divorced from the earnings potential when adequate information is not available. The stock market under these circumstances cannot be expected to serve as an effective disciplinary force capable of pressing management to maintain the efficiency of corporate operations.

In conclusion, it could be argued that as corporate disclosure increases, the variations tend to narrow down, and this may further reduce excessive speculation and gambling in the security market. It is also likely that the corporations with poor earnings, when required to disclose full and fair information, might be weeded out of the securities market because it will be difficult for such corporations to raise capital at a reasonable cost. With adequate accurate information available, the investing public will have more confidence in the securities market and the number of investors is likely to increase providing more liquidity in the financial market and consequently providing funds for companies listed on the market at lower cost.

In addition, it is argued that since prices of corporate securities are based on the estimated earnings and the earnings are estimated on the basis of the information available about corporate operations, the price fluctuations are likely to be less wide with the better disclosure of information (Amihud and Mendelson 1986; Bloomfield and Wilks 2000; Diamond and Verrecchia 1991; Knauss 1964; Sengupta 1998; Singhvi 1968; Singhvi and Desai 1971; Stigler 1961). Reduction in share price volatility as a result of increasing extent of disclosure was empirically confirmed by Amihud and Mendelson (1986); Bloomfield and Wilks (2000); Diamond and Verrecchia (1991).



One of the earliest empirical studies by Singhvi and Desai (1971) investigated whether share price fluctuation significantly related to extent of disclosure. They grouped the selected 150 U.S companies into four groups according to their extent of disclosure, namely; 1) 50% or above, 2) 40% to 49%, 3) 30 to 39%, and 4) below 30%. Relying on their classification, they provided evidence in connection with the likely influence of corporate disclosure of information on security prices using the means analysis. Their results showed that inadequate corporate disclosure in annual reports of the selected U.S companies for fiscal year ending April 1, 1965, and March 31, 1966 is likely to widen fluctuations in the market price of a security since investment decisions, in the absence of adequate information, are based on less objective measures. Fluctuations in the security prices are measured by taking the differences between high and low prices of a security for a given year and dividing it with the low price for the same year.

Statistically, Singhvi and Desai (1971) developed the following model to quantify the conceptualised relationship between the price dispersion and the level of disclosure:  $P = 78.53 - 0.66 (I)$ , where (P) is the percentage price dispersion and (I) is the level of disclosure score. This relation suggests that as (I) increase, (P) significantly decrease and vice versa (e.g.  $R = -0.13729$ ). They concluded,

*“These fluctuations, which affect the cost of capital and the corporate management’s decision to invest funds, lead to inefficient allocation of capital resources in the economy. The market system, under these circumstances, becomes a less efficient in allocating the nation’s resources” (P.137).*

Singhvi and Desai (1971) methodology was replicated by Courtis (1979) on New Zealand low and high security prices for each company included in the sample. Corporate disclosure score then classified the resulting percentage fluctuations. High disclosure scores were associated with higher share price fluctuations, while low disclosure scores were associated with either low share price fluctuations or no trading whatsoever. Courtis (1979) evidence of an association between New Zealand stock price fluctuations and levels of disclosure did not seem to match that found by Singhvi and Desai (1971). Although there appears to be some association between fuller levels of disclosure and higher security prices, the association between disclosure and security price fluctuation seems to run



contrary to the U.S.A experience. One explanation for this perversity may lie in the relative efficiencies of the financial press of the two countries in reporting corporate information.

Most recently, Leuz and Verrecchia (2000) investigated German firms that have switched from the German GAAP to an international reporting regime (IAS or U.S GAAP), thereby committing themselves to increased levels of disclosure. Leuz and Verrecchia (2000) employed proxies for the information asymmetry component: namely, the bid-ask spread, trading volume, and share price volatility. The researcher investigated the effect of international reporting strategies on the above proxies across firms. The sample was composed of 102 firms included in the DAX 100 index during 1998. The annual reports of the selected firms were analysed in order to determine when firms announced their switch from national German GAAP to international reporting standards (IAS or U.S. GAAP). Such a switch was considered over the period 7/1/97 and 6/31/98 and during that period there were 14 firms have chosen IAS, while 7 firms have chosen U.S GAAP.

Therefore, to assess whether firms with an international reporting strategy provide more and higher quality of information, the study used annual report published ratings which were based on a disclosure index derived at the Institute of Auditing at Saraland University. The study obtained 90 of 102 sample firms and comparing the ratings for firms following an international reporting strategy to those firms that provided German GAAP statements, the study found that the mean (median) rating of the former group were significantly higher using a t-test (Mann-Whitney-Wilcoxon test), respectively. Moreover, Leuz and Verrecchia used the average percentage bid-ask spread, median daily share turnover, and the standard deviation of daily returns as proxies for information asymmetry and liquidity. The findings were that firms following international reporting strategies had significantly lower bid-ask spreads and higher trading volume than the rest of the DAX 100 firms using a t-test (Mann-Whitney-Wilcoxon test) in testing the means (medians). Unexpectedly, the average and median volatility of the international reporting group was slightly above the volatility of the German reporting group and the differences in the means (medians) were not statistically significant.



It is argued by the researchers, however, that the above univariate results should be interpreted cautiously since differences in firm characteristics were not controlled. Descriptive statistics to the two groups showed that German firms adopted the international reporting strategy, on average, were more widely held, more capital-intensive, less leveraged, more profitable, and more frequently listed in the U.K and U.S confirming the self-selection bias in the cross-sectional regression. A subsequent analysis of the bid-ask spread and trading volume around the switch to international reporting, however, produced corroborating results where reduction in share price volatility was not documented.

To sum up, mixed empirical results reported on share price volatility in relation with disclosure. Volatility might be influenced by many factors unrelated to information asymmetry and testing the effect of disclosure on volatility could be ambiguous – in particular for infrequently traded stocks (Leuz and Verrecchia 2000) such as the case of Jordanian companies. Bushee and Noe (2000) demonstrated that the effect of disclosure on volatility is complex and may depend on the type of investors attracted to the firm. For these reasons, as a measure of information asymmetry, volatility is likely to be the least reliable proxy among the others in exploring the financial consequences of adopting the IAS in Jordan. According to the efficient financial market theory, moreover, share price reflects all information available and hence implementing the IAS is just part of this information. In other words, many factors could affect share prices in the financial market such as not only microeconomic but also macroeconomic factors.

#### 4.5 Summary

In this chapter, the literature related to the study objectives were searched covering the issues: 1) the impact of IAS on the extent of disclosure, 2) the impact of company-specific factors on the extent of disclosure, and 3) the financial consequences of increased disclosure.

Several researches were carried out to examine the association between company-specific factors and the extent of disclosure in corporate annual reports in various countries. While most empirical studies have chosen the level of voluntary



disclosure and aggregate disclosure to be investigated in examining such a relationship, generally speaking, few studies indeed focused only on mandatory disclosure. Size was the most popular variable considered in the 30 studies reviewed, where listing status and industry type were the second most popular firm factors. In all the studies reviewed, however, the extent of disclosure was measured by a disclosure index. Unlike most of the early studies, which used weighted indices, the observed trend in recent studies was to use unweighted indices. In addition, the main analytical tools used in the early studies were univariate statistics, while most of the recent studies have employed multivariate analysis (e.g. the multiple regression procedure).

Generally speaking, the majority of studies reviewed indicated that size and listing status are positively associated with the extent of disclosure. As far as the industry type is concern, empirical results were contradictory. With respect to the variables liquidity and leverage ratios, however, significant association has been proved in developed countries with regard to both variables (i.e. the relationship proved to be significantly positive and negative), although most results were against supporting such relationship in developing countries. In addition, regarding the variables auditor type and profitability ratios, although the later variable proved to be positively and negatively significant, generally speaking, results for both variables in both developed and developing countries are not clear or indeed contradictory. A further investigation featured by: 1) focusing on the mandatory disclosure while few studies explored this aspect, 2) investigating the extent of disclosure in compliance with all related and relevant IAS to JIC, and 3) using both univariate (parametric and non-parametric tests) and multivariate (multiple linear regression and stepwise regression) analyses, of the association between the extent of disclosure and corporate characteristics of companies in a country which was not subject to such a previous study (Jordan), therefore, may contribute to efforts that have been made to identify the factors affecting disclosure practices of companies.

Concerning the financial consequences of increased disclosure, theoretical and empirical studies were reviewed. It could be summarised that in spite of the theoretical support for increased disclosure by firms, direct evidence of a negative



empirical relation between disclosure levels and the cost of capital is limited and mixed. Aside from the difficulties of measuring the cost of capital directly and estimating this relation, one potential explanation for the mixed empirical results argued by Richardson and Welker (2001) who indicated that if there is little variation in the information disclosed due to effective regulatory interventions, or if analysts routinely generate information independently of the firms' own disclosures, then the power of empirical tests will be significantly reduced. A stronger test of the relationship between corporate information disclosures and the cost of equity capital is possible, therefore, by choosing markets and information sets where corporate disclosure plays a larger role in market valuations. Jordan, a developing country, experienced for a long time loose and vague financial reporting requirements before adopting fully the IAS in 1998 could be seen as an ideal environment for testing the possible financial consequences of disclosure in compliance with IAS, an issue has not been empirically tested before neither in a developed country nor in a developing country.

Finally, as far as the share price volatility is concern, mixed empirical results reported in its relation with disclosure. Volatility, however, might be influenced by many factors unrelated to information asymmetry and testing the effect of disclosure on volatility can be ambiguous – in particular for infrequently traded stocks as argued by Leuz and Verrecchia (2000) such as the case of Jordanian companies. As a measure of information asymmetry, volatility is likely to be the least reliable proxy among the others in exploring the financial consequences of adopting the IAS in Jordan. According to the efficient financial market theory, moreover, share price reflects all information available and hence implementing the IAS is just part of this information. In other words, many factors could affect share prices in the financial market such as not only microeconomic but also macroeconomic factors.

## **CHAPTER FIVE**

### **RESEARCH METHODOLOGY AND HYPOTHESES**

#### **5.1 Introduction**

This chapter provides details of the research methodology employed and the hypotheses developed in this study for achieving its objectives. The first objective need to be achieved is that to test whether Jordanian Industrial Companies (JIC) listed on Amman Stock Exchange (ASE) and their shares traded during the period under consideration implement fully the IAS. The second objective is that if those JIC do not comply fully the IAS the research will explain the compliance level differences, if it is found, among those companies by looking at company-specific factors that have been chosen. On the other hand, the third objective that might have not had that much attention is that the consequence of adopting the IAS, as far as the financial market is concerned, in developing countries. Therefore, for exploring this issue, the following aspects could be investigated: 1) to what extent adoption in Jordan IAS has reduced the systematic risk estimated by beta, unsystematic risk estimated by residuals variance, risk premium, and cost of equity capital estimated by expected return? It is conceivable, however, that the cost of equity capital has been influenced by other changes taking place over the period other than the change in the extent of disclosure in compliance with IAS. In particular, the firms may have been changing their business risk or their financial risk and this need to be controlled for in assessing the impact of the change in disclosure on the cost of equity capital, 2) overall, can IAS adoption be associated with a reduction for JIC share price volatility?, 3) does bid-ask spread narrowed as a result of complying with IAS?. Therefore, the following sections will explain in more detail the above issues.

#### **5.2 Methodology for Assessing the Impact of the IAS on Disclosure Practices**



The first objective of this study is to investigate the impact of the IAS on disclosure in Jordan by seeking an answer to the following question:

*“To what extent do JIC listed on the ASE and having their shares traded during the period under consideration complies with the mandatory requirement to disclose IAS?”*

There existed 41 standards issued by the IASC (as of June 2001), which mainly or partly address disclosure. In the worksheets, however, the IAS that became operative after 2000, those that address consolidated financial statements, those that are designed for business areas other than the Industrial Sector, and the standards found to be irrelevant to the selected JIC case were not covered. Table 5.1 shows the number of IAS, which were operative between 1995 and 2000 and those, which were relevant to the JIC over the same period and were used for developing the worksheets<sup>1</sup>.

**Table 5.1: IAS operative during the period 1995-2000 and the IAS relevant to JIC**

Year	No. Of IAS Operative	No. Of IAS Relevant to JIC
1995	31	18
1996	31	18
1997	31	18
1998	33	18
1999	38	21
2000	38	21

Sources: International Accounting Standards 1995: the full text of all International Accounting Standards extant at 1 January 1995 and current exposure drafts, International Accounting Standards 1998: the full text of all International Accounting Standards extant at 1 January 1998 and current exposure drafts, International Accounting Standards 2000: the full text of all International Accounting Standards and SIC interpretations extant at 1 January 2000.

<sup>1</sup> See Appendix 2 (History of International Accounting Standards Concerned) for more details.

The IAS that became operative after 2000: The disclosure items worksheet, which was developed on the basis of the IAS active in the period under investigation (1995-2000), is used as a tool to examine the JIC disclosure and whether it complies with IAS. As the study concerns about the period 1995 - 2000 (the most recent year), only the IAS that were in force before 2000 could be included in the worksheet.

IAS addressing: consolidated financial statements, financial institutions, sectors other than the Industrial Sector, and the standards found to be irrelevant to JIC. As consolidated financial statements and financial institutions were left outside the scope of this study, IAS 22 and 30, which are primarily directed consolidated financial statements and financial institutions, and parts of IAS 7 and 21, which relate to consolidated financial statements were not covered in the worksheet. In addition, parts of IAS 12, and 32, which relate to deferred tax and hedging respectively, have been excluded because of irrelevancy. Moreover, other IAS; 14, 15, 17, 24, 26, 27, 28, 29, 31, and 34 which are related to reporting financial information by segment, accounting responses to changing prices, accounting for leases, related party disclosure, accounting and reporting for retirement benefit plans, consolidated financial statements and accounting for investment in subsidiaries, accounting for investments in associates, financial reporting in hyperinflationary economies, financial reporting in joint ventures, and interim financial reporting respectively have been ignored because they do not apply to the selected JIC. Therefore, Table 5.2 summarises the IAS apply to JIC used to develop the disclosure indices over the period 1995-2000 and the number of items in each index.

**Table 5.2: IAS Relevant to JIC 1995-2000**

<b>Year(s) Covered</b>	<b>Number of IAS Apply to JIC</b>	<b>Number of Items</b>
1995-1997	18	137
1998	18	186
1999	21	221
2000	21	219



The IAS considered, in general, represent the major components of disclosure. Each of the IAS related to the period under investigation is analysed in order to develop the list of disclosures required by IAS. It has to be noted that many of these standards have been revised, reformatted and combined into other standards over the years, which has been taken into account. In the construction of the worksheet, any changes made and being active after 2000 in the standards were not taken into account.

To sum up the above arguments, Table 5.3 listing all IAS issued by IASC, IAS relevant to JIC used in developing the disclosure indices, and comments on the reason for exclusion some of these standards.

Table 5.3: IAS: Relevant and irrelevant Standards to JIC

Standard No.	Standard Title	Year of Coming Into Force	Disclosure Index 1995-1997	Disclosure Index 1998	Disclosure Index 1999	Disclosure Index 2000	Comments on the Reasons of Exclusion
1	Disclosure of Accounting Policies (reformatted 1994)	1975	√	X	X	X	Part of IAS1 (Revised 1997) has been excluded since its items will be covered within the other standards applicable to JIC. That is because including it means double scoring the items. For example, although this standard asking to disclose the accounting policy in general, determining the gross carrying amount of PPE can be considered one of these accounting policies. However, IAS16 asking about the same item as well.
	Presentation of Financial Statements (Revised 1997)	1998	X	√	√	√	
2	Inventories (Revised 1992)	1995	√	√	√	√	
3	Consolidated Financial Statements	1977	X	X	X	X	Not applicable to the selected JIC.
4	Depreciation Accounting (Reformatted 1994)	1977	√	√	√	√	



Table 5.3: IAS: Relevant and irrelevant Standards to JIC

Standard No.	Standard Title	Year of Coming Into Force	Disclosure Index 1995-1997	Disclosure Index 1998	Disclosure Index 1999	Disclosure Index 2000	Comments on the Reasons of Exclusion
5	Information to be Disclosed in Financial Statements (Reformatted 1994)	1977	√	X	X	X	
6	Accounting Response to Changing Prices	1978	X	X	X	X	
7	Cash Flow Statements (Revised 1992)	1994	√	√	√	√	
8	Net Profit or Loss for the Period, Fundamental Errors and Changes in Accounting Policies (Revised 1993)	1995	√	√	√	√	
9	Research and Development Costs (Revised	1995	√	√	X	X	

Table 5.3: IAS: Relevant and irrelevant Standards to JIC

Standard No.	Standard Title	Year of Coming Into Force	Disclosure Index 1995-1997	Disclosure Index 1998	Disclosure Index 1999	Disclosure Index 2000	Comments on the Reasons of Exclusion
	1993)						
10	Contingencies and Events Occurring After the Balance Sheet Date (Reformatted 1994)	1980	√	√	√	√	
11	Accounting for Construction Contracts (Revised 1993)	1980	√	√	√	√	
12	Accounting for Taxes on Income	1981	√	X	X	X	There is no mentioned in the Income Tax Law No. 57 of 1985 and its adjustments with amendment 14 of year 1995 which became effective January 1, 1996 whether Jordanian companies are allowed to use different deprecation methods for reporting purposes. Given that, the companies must use the rates stated by the tax law in filling its income return. Deferred tax from timing
	Income Taxes (Revised 1996)	1998	X	√	√	√	



Table 5.3: IAS: Relevant and irrelevant Standards to JIC

Standard No.	Standard Title	Year of Coming Into Force	Disclosure Index 1995-1997	Disclosure Index 1998	Disclosure Index 1999	Disclosure Index 2000	Comments on the Reasons of Exclusion
							differences (temporary differences), therefore, does not exist. Deferred tax from permanent difference, in addition, is not the case in Jordan since the Jordanian Tax Authority has published guidance for what should be included and excluded in calculating a company profit for tax purposes. Accounting profits, therefore, is not differed from taxable profits and consequently deferred tax issue does not exist in Jordan.
13	Presentation of Current Assets and Current Liabilities (Reformatted 1994)	1981	√	X	X	X	
14	Reporting Financial Information by Segment	1983	X	X	X	X	Not applicable for the selected JIC.

Table 5.3: IAS: Relevant and irrelevant Standards to JIC

Standard No.	Standard Title	Year of Coming Into Force	Disclosure Index 1995-1997	Disclosure Index 1998	Disclosure Index 1999	Disclosure Index 2000	Comments on the Reasons of Exclusion
15	Information Reflecting the Effects of Changing Prices	1983	X	X	X	X	Not applicable since the inflation rates in Jordan has not exceeded 10% in the past ten years 'see Chapter Two-Jordanian Economy Development'.
16	Property, Plant and Equipment (Revised 1993)	1995	√	√	√	√	
17	Accounting for Leases	1984	X	X	X	X	Not applicable for the selected JIC.
18	Revenue (Revised 1993)	1995	√	√	√	√	
19	Retirement Benefit Costs (Revised 1993)	1995	√	√	X	X	The Social Guarantee Corporation Law No.30 of 1978 effective till 2001 which is dealing with retirement benefits for employees working in the private sector. The company is totally govern by the Jordanian Government through a board of directors (Article 10, 12 and 13). It has been recognised that
	Employee Benefits (Revised 1998)	1999	X	X	√	√	



Table 5.3: IAS: Relevant and irrelevant Standards to JIC

Standard No.	Standard Title	Year of Coming Into Force	Disclosure Index 1995-1997	Disclosure Index 1998	Disclosure Index 1999	Disclosure Index 2000	Comments on the Reasons of Exclusion
							the relevant requirement in IAS 19 for JIC are those related to the state retirement benefit – defined contribution plan ‘see Article 43, b’. For getting retirement benefits, the Social Guarantee Corporation Law asked for monthly payments from both; employer (8% of the monthly employees’ wages) and employees (5% of their monthly wages) has to be paid to the Social Security Corporation ‘see Article 40’. However, it has not been clarified clearly in the Law, when the Social Security Corporation is not making a profit, who has to pay the deficit in the corporation balance. Article 16(d) in the Law, however, highlighting the fact that the Jordanian Government is obligated to provide loans when the

Table 5.3: IAS: Relevant and irrelevant Standards to JIC

Standard No.	Standard Title	Year of Coming Into Force	Disclosure Index 1995-1997	Disclosure Index 1998	Disclosure Index 1999	Disclosure Index 2000	Comments on the Reasons of Exclusion
							corporation passing through financial distress. Such a case is totally different from other countries like UK where the companies and employees have to bear the risk in the future of being bankrupts or making losses. As a consequence, many accounting issues raised regarding the risk occur and companies accounts have to report these issues in their annual reports by following the IAS 19 requirements, which are obviously irrelevant to Jordanian companies.
20	Accounting for Government Grants and Disclosure of Government Assistance (Reformatted 1994)	1985	√	√	√	√	



Table 5.3: IAS: Relevant and irrelevant Standards to JIC

Standard No.	Standard Title	Year of Coming Into Force	Disclosure Index 1995-1997	Disclosure Index 1998	Disclosure Index 1999	Disclosure Index 2000	Comments on the Reasons of Exclusion
21	The Effects of Changes in Foreign Exchange Rates (Revised 1993)	1995	√	√	√	√	
22	Accounting for Business Combinations	1985	X	X	X	X	Not applicable for the selected JIC.
23	Borrowing Costs (Revised 1992)	1995	√	√	√	√	
24	Related Party Disclosures	1986	X	X	X	X	Not applicable for the selected JIC.
25	Accounting for Investments (Reformatted 1994)	1987	√	√	√	√	
26	Accounting and Reporting by Retirement Benefit Plans	1988	X	X	X	X	The Standard is for accounts of pension funds where it does not apply in Jordan.
27	Consolidated Financial Statements and	1990	X	X	X	X	Not applicable for the selected JIC.

Table 5.3: IAS: Relevant and irrelevant Standards to JIC

Standard No.	Standard Title	Year of Coming Into Force	Disclosure Index 1995-1997	Disclosure Index 1998	Disclosure Index 1999	Disclosure Index 2000	Comments on the Reasons of Exclusion
	Accounting for Investments in Subsidiaries						
28	Accounting for Investments in Associates	1990	X	X	X	X	Not applicable for the selected JIC.
29	Financial reporting in Hyperinflationary Economies	1990	X	X	X	X	It is not applicable in Jordan where the inflation rate is not described as hyperinflationary and JIC have no subsidiaries abroad 'See Tables 2.8 and 2.9'.
30	Disclosures in the Financial Statements of Banks and Similar Financial Institutions	1991	X	X	X	X	It is not applicable for JIC where this standard concerning the Banking and Financing Sector.
31	Financial Reporting of Interests in Joint Ventures	1992	X	X	X	X	Not applicable for the selected JIC.
32	Financial	1996	X	√	√	√	Disclosure regarding hedging in



Table 5.3: IAS: Relevant and irrelevant Standards to JIC

Standard No.	Standard Title	Year of Coming Into Force	Disclosure Index 1995-1997	Disclosure Index 1998	Disclosure Index 1999	Disclosure Index 2000	Comments on the Reasons of Exclusion
	instruments: Disclosure and Presentation (Revised 1998)						this Standard has been excluded because of its irrelevancy for the selected JIC.
33	Earnings Per Share	1998	X	✓	✓	✓	
34	Interim Financial Reporting	1999	X	X	X	X	It is not applicable since the only reports have been collected for the selected JIC are the annual ones.
35	Discontinuing Operations	1999	X	X	✓	✓	
36	Impairment of Assets	1999	X	X	✓	✓	
37	Provisions, Contingent Liabilities and Contingent Assets	1999	X	X	✓	✓	
38	Intangible Assets	1999	X	X	✓	✓	

Source: International Accounting Standards 1995: the full text of all International Accounting Standards extant at 1 January 1995 and current exposure drafts, International Accounting Standards 1998: the full text of all International Accounting Standards extant at 1 January 1998 and current exposure drafts, International Accounting Standards 2000: the full text of all International Accounting Standards and SIC interpretations extant at 1 January 2000.

The disclosure index was developed by creating questions for each standard separately in order to be checked by analysing the annual reports for each industrial company over the period 1995-2000. Hypothesis that set out to assess the impact of the IAS is

*“H01: There are no changes in the extent of disclosure in compliance with IAS in the annual reports of JIC listed on ASE and their shares traded over the period 1995-2000”.*

To be able to test the above hypothesis, for JIC as individuals and as sectors, the JIC extent of disclosure in compliance with the IAS over the six years (1995-2000) were estimated by using an updated index. The JIC included are those their shares traded in ASE and published their annual reports during the period 1995-2000, which means the study is not a sample exercise in testing the above hypothesis since all JIC with the above-mentioned characteristics are included. The disclosure index was updated; however, by taking into account the additions and changes to IAS over the period. Moreover, the hypothesis has also been tested by exploring whether there is a significant change pre and posts the mandatory application of IAS.

### **5.2.1 Measurement of the Extent of Disclosure**

Cooke and Wallace (1989, P.51) pointed out that accounting disclosure is an abstract concept that cannot be estimated directly. It does not possess inherent specifications by which one can indicate its intensity or quality, like the capacity of a car. Nevertheless, they argued that a suitable proxy, such as an index of disclosure, could be used to determine the extent of information disclosed by a firm.

It can be said that disclosure indices used widely by previous researchers to measure the extent of disclosure in a company's accounts (Ahmed 1996; Ahmed and Nicholls 1994; Al-Modahki 1996; Al-Mulhem 1997; Belkaoui and Kahl 1978; Buzby 1975; Cerf 1961; Chow and Wong-Boren 1987; Cooke 1991; Cooke 1993; Cooke 1989a; Cooke 1989b; Cooke 1992; Courtis 1979; Dumontier and Raffournier 1998; Firth



1979; Giner 1997; Hossain et al. 1995; Hossain et al. 1994; Inchausti 1997; Lau 1992; Malone et al. 1993; Marston and Robson 1997; McNally et al. 1982; Meek et al. 1995; Patton and Zelenka 1997; Raffournier 1995; Singhvi 1968; Singhvi and Desai 1971; Soh 1996; Stanga 1976; Tai et al. 1990; Tong et al. 1990; Wallace 1987; Wallace and Naser 1995; Wallace et al. 1994). Marston and Shrivies (1991) argued that disclosure indices can be used to show compliance with regulations if the items in the index are so chosen. This study also uses disclosure indices to measure Jordanian companies' compliance with the disclosure requirements of IAS. The procedure followed to measure this disclosure is summarised as follows:

1. Construction of a disclosure-scoring sheet.
2. Selection of the period to be covered.
3. Identification of JIC listed on the ASE over the period under consideration (1995-2000).
4. Scoring the disclosure items.
5. Constructing the disclosure index.

However, there are issues in constructing a disclosure index, which should be explained. This study is using an "unweighted index" of compliance based upon the IAS requirements which is applied in earlier studies (Ahmed and Nicholls 1994; Al-Modahki 1996; Al-Mulhem 1997; Chow and Wong-Boren 1987; Cooke 1991; Cooke 1989a; Cooke 1992; Courtis 1979; Firth 1980; Giner 1997; Gray 1995; Haniffa 1998; Hossain et al. 1994; Meek et al. 1995; Raffournier 1995; Robbins and Austin 1986; Soh 1996; Wallace 1987; Wallace 1988; Wallace et al. 1994). According to Wallace (1988), the unweighted index is a ratio of the number of items a company disclosed divided by the total that it could have disclosed. Gray (1995) argued that the unweighted scoring approach assumes that each item is equally important. On the other hand, weighted disclosure index also have been used previously for measuring the extent of companies disclosure in both developed and developing countries (Belkaoui and Kahl 1978; Buzby 1975; Cerf 1961; Chow and Wong-Boren 1987; Firth 1979; Malone et al. 1993; Marston and Robson 1997; Singhvi 1968; Stanga 1976; Wallace and Naser 1995). However, the discussion regarding weighted and

unweighted issue will be extended later in section 5.2.1.4 to justify the approach used in this study for measuring the extent of disclosure in compliance with IAS.

#### **5.2.1.1 The Disclosure Scoring Sheet**

The first step in the development of a disclosure index to measure the extent of disclosure is the selection of items to be included on a disclosure-scoring sheet. Since there has been no general theory regarding the number and selection of the items, previous studies have used between 11 (Tai et al. 1990) and 289 (Spero 1979) items. This is because the scope of the selection of information items usually depends on the focus of the study.

As this study involves an examination of JIC' compliance with IAS disclosure requirements over six years (1995–2000), the primary task was to develop a list of information items that might be disclosed in the annual reports of JIC to enable the researcher to measure the extent of the disclosure according to the IAS over the selected six years. The steps followed to develop the disclosure-scoring sheet are discussed below:

Step 1: Construction of an initial form of scoring sheet. The objective at this stage in constructing an initial form of scoring sheet is to be reliable and relevant. Therefore, on the basis of a review of IAS and of previous disclosure studies, an initial disclosure-scoring sheet was constructed. The initial step in the construction of the indices of compliance was the selection of items which have been influenced by: 1) Relevant international accounting standards should exist in each of the years under study (1995-2000). Because of changes in the requirements regarding some standards, however, the number of individual points on which compliance could be estimated changed over the period as it is shown previously in Table 5.2. 2) The items had to be potentially relevant to a set of JIC that could be characterised in general as domestic manufacturing firms. 3) Each item had to be applicable to the generality of firms. 4) The items have been chosen so that it is easy to verify whether the company discloses



it or not. Although there are many other items that could be included, the difficulties in judging whether it has been disclosed was the reason for excluding it in order to be more objective in measuring the level of disclosure for each company. For example, initially, IAS 16 as issued in 1982 permitted either historical cost or re-valued amounts as the basis for reporting plant assets. As revised via the Comparability Project, the IAS 16 benchmark suggests that PPE be carried at cost less accumulated depreciation. The allowed alternative states that PPE may be carried after initial recognition at its revalued amount. As modified, IAS 16 requires that any revaluation be to fair value and that these be updated regularly (at least every three years). The IASC requires that revaluation be made with sufficient regularity and that revaluations are applied to the entire class of PPE. Revaluation associated with company law and tax regulations may make it difficult, if it is not impossible, to comply with these IASC requirements.

Street et al. (1999, P.36) has found that 12 companies from his sample electing to revalue certain items of PPE, six indicate that valuations are made with sufficient regularity, and 11 indicate the specific classes of PPE revalued. He argued that it is impossible to determine if the remaining companies are complying with the IASC guideline. Therefore, many items cannot be included for the reason that one cannot tell whether there is compliance or not.

One way of solving this problem is by relying on what has been said in the annual report for the company. But again this is can be a risky method as it have been mentioned by many researchers that the degree of compliance by companies claiming to comply with IAS is very mixed and somewhat selective (Cairns 1999; Cairns 1997; Street and Bryant 2000; Street and Gray 2001; Street et al. 1999; Taylor and Jones 1999) supporting criticism by the President of the International Federation of Accountants (IFAC) who has criticised auditors for asserting that financial statements comply with IAS when the accounting policies and other notes show otherwise (Cairns 1997). Therefore, it should be said that the study is looking at many aspects of the IAS rather than all of the IAS.

Step 2: Modification of the scoring sheet. To meet the objectives of being reliable and robust, items included in the initial disclosure-scoring sheet were reviewed by three Jordanian accountants, one of the Newcastle University staff specialists in the IAS from the Accounting and Finance Department and the researcher supervisor. The three Jordanian accountants are: a member of an audit firm, a member of the accounting profession, and a member of the Jordanian capital market. Therefore, taking into account the IAS requirements, an item of information was added if recommended, and eliminated if objected to by at least three members of the group. According to these procedures fifteen items were removed and seventeen items were added to the disclosure indices 1995-2000.

Step 3: Pilot study. Having developed the disclosure-scoring sheet by selecting the items as described in the previous steps, a pilot study was carried out. In this stage, six randomly selected listed JIC annual reports over the six years (1995-2000) were analysed, first to ensure that all important disclosure items likely to be disclosed by JIC were covered in the scoring sheet. The second purpose was to identify those items of information included in the scoring sheet, but whose applicability cannot be determined from published annual reports. In this final stage, those items whose applicability to companies could not be determined based on the annual reports were eliminated, which were thirty two items.

#### **5.2.1.2 Selecting of Period to be covered**

The main objectives of the study are:

- To test whether JIC listed on the ASE and with their shares traded during a selected period implemented fully IAS,
- Secondly, if those JIC do not comply fully with IAS, the study will explain the compliance level differences. In terms of company-specific factors that have been chosen, namely: company size, audit firm, profitability, structure, and industry type.



- On the other hand, the third objective, which might have not had that much attention, is the financial consequences (e.g. systematic risk, unsystematic risk, risk premium, cost of equity capital, and share price volatility) of IAS adoption as far as the ASE is concerned.

The period selected in this study, therefore, for analysing the disclosure practices of JIC to gather evidence to assess the immediate impact and beyond the immediate impact (short and long term impact) of IAS on disclosure practices, is three years before the mandatory enactment of IAS starting from 1 September 1998, through the Companies Act published in 1997 by the Jordanian Government and the Securities law published in 1997 by the Stock Exchange, and three years after that. It has to be mentioned, however, that Jordanian companies were asked voluntarily to implement IAS by the Jordanian Association of Certified Public Accountants (JACPA), which does not have any enforcement authority, starting from December 1990 as a result of the absence of national accounting standards, which is discussed in chapter three. The period fulfilling the study objective, therefore, will be from 1995 until 2000. This pre- and post- implementation period is considered to be enough for analysing the impact of the IAS on JIC, taking into account that the annual reports and the information needed for analysis could not be available longer than the period considered (the annual reports can not be later than the year 2000 because of its availability considering that collecting these annual reports took place in the beginning of the year 2001).

Furthermore, as the enactment of the IAS is one of the most important recent developments in the area of financial reporting in Jordan, and this regulation, which has been claimed to increase substantially the minimum disclosure requirements, the period surrounding the year that the IAS was enacted was considered to be one of the best periods to look at and assess the impact of IAS.

The reason for covering more than one year is that it would provide a better picture of the disclosure and compliance patterns of companies and their financial performance

before and after the IAS were introduced and also would provide useful information about what the impact of IAS is, if any, direct or indirect. Choosing the period 1995-2000, therefore, is clearly justified for achieving the study objectives, not only for measuring the impact for the IAS on JIC disclosure and its improvement, but also for assessing any impact on the ASE.

### **5.2.1.3 JIC Listed on ASE**

To the decision to limit this study to the industrial sector (mining and quarrying, manufacturing, and construction) was made in this study, because in Jordan this sector considered to be the main sector, which makes significant continuous increase to the contribution to GDP (Tables 2.4 and 2.10). Moreover, other sectors may include different items in the financial statements and in addition there are specific legal and regulatory requirements for specific sectors (e.g. financial and insurance sectors), which affect the comparability of accounts. In other words, financial firms cannot be included since they do not possess characteristics (such as having an item that can represent what 'annual sales' can for non-financial firms), which make them comparable with non-financial firms. Furthermore, other limited companies (non-listed) will not be examined because the company law did not force them to publish their financial reports, which are consequently not available. Finally, industrial companies included are those companies had existed for the six years period 1995-2000, they had to have a full set of company accounts and they had to have been continuously trading over the whole period. Any industrial company, therefore, its share price was fixed over any of the years under consideration has been excluded. However, many previous empirical studies, especially most recent, focused also only on the non-financial companies (Ahmed 1996; Ahmed and Nicholls 1994; Al-Mulhem 1997; Chow and Wong-Boren 1987; Cooke 1989a; Hossain et al. 1994; Inchausti 1997; Raffournier 1995; Stanga 1976; Street et al. 1999).

There was no readily available list showing the industrial companies listed on the ASE between 1995 and 2000 featured by the mentioned above limits. The only



published document lists all companies registered with the ASE between 1995 and 2000, classifying them into four sectors: Insurance, Banks, Industry and Services. Therefore, the research has to work out those industrial companies.

Therefore, Table 5.4 summarises total JIC listed on ASE in the Secondary Market (First and Second) and those considered in the study over the period under investigation.

**Table 5.4: JIC Listed on ASE and those Considered in the study 1995-2000**

Year	JIC Listed on ASE	JIC Considered	Proportion of JIC Considered %
1995	126	50	39.7
1996	132	50	37.9
1997	139	50	35.9
1998	150	50	33.3
1999	152	50	32.9
2000	163	50	30.7

Source: ASE, Yearly Statistical Series, Different Issues.

As it can be seen from the above table, the proportion of the industrial companies considered in this study was decreasing over the period 1995-2000. Out of those industrial listed companies, the number featured by the previous limits was 50 companies. These JIC were classified by the researcher into five types of industry as follow: Chemical 13, Food and other services 10, Textile 7, Mining and Building Equipment 11 and finally Machinery and Metal Industry 9 companies. All of the JIC featured by the previous limits were chosen for studying.<sup>2</sup> It has to be noted, however,

<sup>2</sup> As the annual reports of one listed company, belong to the Food and Other Services Sector, for certain years were not available from the company itself or from the ASE, and the share price for another company, belong to the Mining and Building Equipment Sector, for certain years were not provided, those companies were eliminated. It has to be mentioned, however, that banking sector representing the most of the ASE market capitalisation. For example, Arab Bank represents almost

with the exception of the study reported by Lang and Lundholm (1993) that covered 2319 total firm years (varying from one to five years per firm), most of the previous empirical studies focused only on one year per firm, and the number of firms in each study has varied from 33 to 527.

A full set of the annual reports for the six years were obtained from the companies through personal contact with the management of the company. All companies investigated in this study have their financial year ending on 31/12 for each year. Although there are other different sources of information, which could be used such as stockbrokers' advice, prospectuses, employees reports, announcements to the Stock Exchange, newspapers and magazines, interim and quarterly reports, personal visits, the annual reports are considered to be the most important source of information about companies used by previous researchers (Al-Basteki 1995; Botosan 1997; Cooke and Wallace 1989; Evans and Taylor 1982; Hossain et al. 1994; Nobes 1990; Patton and Zelenka 1997; Raffournier 1995; Singhvi and Desai 1971).

Compared with other sources of information, annual report information is viewed as more reliable and timely source (Foster 1986). On the other hand, Lang and Lundholm (1993) has found in their research that annual report disclosure levels are positively correlated with the amount of disclosure provided via other media, a result supported also by Botosan (1997). Moreover, Knutson (1992) states,

*“At the top of every analyst's list (of financial reports used by analysts) is the annual report to shareholders. It is the major reporting document and every other financial report is in some respect subsidiary or supplementary to it”* (P.7).

Ahmad (1988) argued that as other sources of information are generally very limited in developing countries, this would suggest that annual reports as a source of information occupy a more important role in developing countries than in developed countries. Thus, the methodology employed in this study used the annual reports to decide whether or not the company disclosed an item in line with IAS disclosure

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25% of the market capitalisation 'see [www.ase.com.jo](http://www.ase.com.jo)'.



requirements. Another source that could be used is the ASE publications, which are not only not less timely than corporate annual reports but also most of their information regarding individual companies is extracted from companies' annual reports. ASE publications include information about the share prices and the financial ratios for the companies listed on the market.

#### **5.2.1.4 Scoring the Disclosure Items**

There are different approaches to developing a scoring scheme to capture levels of disclosure. The most commonly used approach is a modified dichotomous procedure in which an item scores one if it is disclosed, zero if it is not disclosed and NA if it is not applicable (Ahmed and Nicholls 1994; Al-Modahki 1996; Chow and Wong-Boren 1987; Cooke 1991; Cooke 1989a; Cooke 1992; Dumontier and Raffournier 1998; Haniffa 1998; Firth 1980; Gray 1995; Inchausti 1997; Meek et al. 1995; Patton and Zelenka 1997; Robbins and Austin 1986; Soh 1996; Wallace 1988). This is called the unweighted approach. A similar approach was also adopted in this study, that is the contents of a company's annual report are checked against the items on the scoring sheet and coded as one for complied, zero for not complied and NA for not applicable, depending on whether the report contained the item of information which is relevant to the particular company.

The determination of whether an information item is not complied (0) or not applicable (NA) is not an easy task. For example, if there is not any contingent liabilities disclosed, does this mean that there are none or that the company is declining to disclose them? In order to overcome this problem the method suggested by Cooke (1989a); Cooke (1989b) is to scrutinise the entire corporate report before deciding whether a particular item is applicable or not. This helped to reduce the risk of penalising a company for not disclosing an item, which is not applicable. Another example is that if there is not development cost capitalised, especially by those JIC's in the Chemical and Mining and Building Equipment industries.

It should be clarified that not all the items were applicable to each company; thus, a company was not penalised for not disclosing a non-applicable item. To operationalise this, each annual report was extensively examined to determine the items which were applicable and therefore expected to be presented in the annual report, an approach has been used by previous empirical studies (Buzby 1972; Cooke 1989a; Wallace 1987). This yields two scores for each annual report. The first is the maximum number of items applicable to a certain company and the second is the number of items actually disclosed by the company. A relative disclosure index was calculated for each company by the ratio of the actual number of items disclosed by the company to the maximum number of items applicable to the company. Therefore, a company's extent of mandatory disclosure was expressed as a percentage ranging from 0% if the company did not disclose any item to 100% if the company disclosed all the items applicable to it. The following is the general formula used by Ahmed (1996); Cooke (1992); Firth (1979); Meek et al. (1995):

$$\text{Individual company degree of compliance} = \frac{\text{Total score for individual company}}{\text{maximum total applicable items}}$$

A compliance score was arrived at through a reading of the financial statements. Each annual report was studied to determine whether there had been compliance with the IAS. Information was taken from the financial statements; the balance sheet, profit and loss account, cash flow statement, auditor report, company explanations and notes to the statements.

The researcher coded the annual reports for the six periods under consideration in a consistent manner. After the entire individual companies' worksheets had been completed, the compliance scores were transferred to a master summary sheet. The summary sheet consisted of 6 columns (the number of years estimated), with 50 rows (one for each company) presented in Appendix 3.

As mentioned earlier briefly in this section there are two different approaches for



measuring the compliance; the weighted and the unweighted indexes. The main disadvantage for the weighted approach is that it gives weights may be predetermined subjectively (Cerf 1961; Singhvi and Desai 1971), or may be a replication of weights used in previous studies (Barret 1977; Barret 1976; Courtis 1979; Marston 1986), or may be based on average weighted derived from a questionnaire survey of users' perception of disclosure items (Buzby 1975; Firth 1979; Stanga 1974).

Clearly one class of user the financial statements will attach different weights to an item of disclosure than another class of user. For example, financial analysts will be more interested in disclosures relating to financial performance and earnings potential whereas employee groups will be interested in disclosures relating to employment conditions, remuneration and job prospects. However, the focus of this research is not on one particular user group but rather on all users of corporate annual reports. Support for not attaching weights can be found in Robbins and Austin (1986); Spero (1979). In addition, Marston and Shrivies (1991) argued that if there are a large number of items in the index, one might expect that the weighted and unweighted scores would give the same result. That is to say, a sample of companies would be ranked in the same way using the unweigthed index as they would be using the weighted index. Chow and Wong-Boren (1987) noted this in their study and subsequently restricted their statistical analysis to the weighted results. Firth (1980) also noted that unweighted and weighted scores showed similar results.

On the other hand, the unweighted approach gives equal weight for each item, which can be considered one of the main weaknesses for the approach since some of these standards will have more weight than others because the number of items needs to be estimated within each standard is varied among these standards. Therefore, it will appear like the standard, which have more items, are more important than others with fewer items. Despite the above argument, it has been provided some proof that there may be no significant difference between weighted and unweighted disclosure indexes (Choi 1973; Chow and Wong-Boren 1987; Firth 1980; Robbins and Austin 1986; Spero 1979).

The study objective is to test whether the JIC imply the standards in general (overall compliance) and therefore regardless to how the standards are used by other users when they estimated the compliance according to the items within each standard (unweighted approach). Accordingly, to achieve the study objective and in order to avoid the unweighted approach problem mentioned above, the researcher has developed a new method by calculating an index for each standard. This new approach is called the “*Partial Compliance (PC) unweighted*” approach. Therefore, the degree of compliance for each company is estimated by adding the degree of compliance for each standard. This implicitly gives equal weighting to each applicable standard and avoids the problem of unintentionally giving more weight to a standard with a larger number of items in the index. It gives equal weighting for each standard instead of equal weighting for each item as it is in the unweighted approach. For example, to explain, let us assume that the extent of disclosure regarding three IAS needs to be estimated for company X. The first standard has one item, the second standard has three items and the third standard has one item. Considering that Company X has disclosed the only item in standard number one and one item from the items in standard number two and the only item in standard number three, therefore, because the study using the “*Partial Compliance (PC) unweighted*” approach, the extent of disclosure will be  $(2^{1/3})/3 = 7/9$ . However, using the unweighted approach will give a result of  $3/5$ . It has to be argued in the same time that even this approach of treating all standards as of equal weight has the drawback of assuming all standards are equally important. However, given the problems of determining weightings, it is on balance the best approach.

In the disclosure model used in this study, the total disclosure score for a company is taken to be additive. The following is the general formula used:



$$PC = r_j \frac{\sum_{i=1} X_j}{\text{disclosed.}}$$

- $X_j$  = percentage for a standard disclosed.
- $r$  = number of relevant standards for  $j^{\text{th}}$  firm.

Therefore, the extent of disclosure in compliance with the IASC requirements for each company was calculated through the following general formula:

$$\text{Individual company percent extent of disclosure in compliance with IAS} = PC / r_j$$

#### 5.2.1.5 Constructing the Disclosure Index

Once a disclosure-scoring sheet for each company for each year was completed, IAS compliance disclosure indices were created to measure the extent of disclosure in compliance with IAS.

The choice of area of accounting practice to be covered in this study was based upon the fact that JIC are currently practising only the basics of accounting since its local, small in size and not complex. In addition, they are no major multinational, stock ownership is not widely spread, and a few key owners control a firm. Furthermore, IAS requirements concerning advanced accounting practices such as deferred tax, accounting for leases, inflation accounting, etc are not applicable. For example, as mentioned earlier in Table 5.3, JIC do not lease assets since finance leases are not used in Jordan (underdeveloped financial systems) therefore IAS 17 concerning the leasing standard is not an issue. Similarly for deferred tax – since the Jordanian tax system does not give rise to temporary difference (or timing differences) and permanent differences between the tax profit and accounting profit, and then the IAS 12 concerning deferred tax part is not an issue to be considered in developing the

disclosure indices. Consequently, the areas of accounting practice chosen in this research are relatively fundamental.

In conclusion, despite the above explored processes for developing as accurate indices as possible, it has to be noted that developing those indices are limited to items where compliance is visible and therefore the research inevitably end up testing disclosure more than measurement and accounting policy statements more than accounting practice. The index is therefore a proxy for compliance and in some ways a slightly biased proxy. In particular, in measuring the extent of disclosure in compliance with IAS, the study is reliant on the fact that companies making clear statements of accounting policies and making them honestly.

### **5.2.2 Data Analysis and Testing the Hypothesis**

For testing the significance of the change in the extent of disclosure in compliance with the IAS over the period 1995-2000, a number of statistical tests can be used. By taking into account the statistical test employed in previous similar studies (Al-Basteki 1995; Al-Modahki 1996; Doupnik and Taylor 1985; Emenyonu and Gray 1996; Soh 1996; Taylor et al. 1986) and the nature of the data used in this study,<sup>3</sup> it was decided to conduct “two related samples tests” to test the hypothesis set out in section 5.2.

There are two types of two-related-sample tests: parametric (e.g. the Paired-samples t-test) and non-parametric (e.g. the Wilcoxon matched-pairs signed-ranks test and Sign test).<sup>4</sup> The parametric t-test, which requires that the data must fulfil the normality assumption, is considered to be more powerful than its non-parametric alternatives (Siegel 1956). To be able to determine if the t-test can be used to test the hypothesis

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<sup>3</sup> Data used for testing the hypothesis set out in the previous section are two observations from the same sample (i.e. two scores obtained from the same sample) and the suggested statistical test for such data is the two-related-samples statistical test (Siegel 1956).

<sup>4</sup> The Wilcoxon test rather than the Sign test was conducted because the former considers the magnitude of the differences between the values in each matched pair, not just the direction of the



set out in section 5.2, normality tests of skewness and kurtosis and K-S Lilliefors<sup>5</sup> were undertaken. The results of normality tests indicated that data (extent of disclosure scores) for each year covered in this study appear to be normally distributed. Therefore, the paired-samples t-test was carried out to test the above hypothesis. A Wilcoxon test (the non-parametric alternative to the paired-samples t-test) was also run in testing the same hypothesis to check the results of parametric tests. Such a methodology have also employed by previous empirical studies (Curuk 1999; Leuz and Verrecchia 2000). The advantage of using two approaches is that the probability of incorrectly rejecting the hypothesis is reduced (Cooke 1989a). Triangulation, adopting multiple methods of analysis, has been recommended by Denzin (1970), who stated that “*no single method will ever permit an investigator to develop causal proportions free of rival interpretations*” (P.26).

For testing the significance different in means between a pair of sectors, years and interact between sectors and years over the period 1995-2000, Univariate Analysis of Variance has been employed by using General Linear Model (GLM)<sup>6</sup>. If the test shows that the difference in means is significant in general among sectors, years or interact between sectors and years, Tukey HSD has been employed for finding out among which pair of years, sectors or interact the difference in means was significant.

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differences, and is considered to be more powerful and sensitive than the Sign test (Siegel 1956).

<sup>5</sup> K-S Lilliefors (a non-parametric test) is a test of goodness of fit which means that it determines whether the sample can reasonably be assumed to come from a normal population (Siegel 1956). Where data are not normal, the significance level of K-S Lilliefors is expected to be large enough (Norusis 1995).

<sup>6</sup> The GLM Univariate procedure provides analysis of variance for one dependent variable by one or more factors and/or variables. The factor variables divide the population into groups. In such a model, one could investigate interactions between factors as well as the effects of individual factors. Additionally, after an overall F test has shown significance, post hoc tests can be used to evaluate differences among specific means, which is the concern of this study. In other words, once it is determined those differences exist among the means, post hoc range tests and pair-wise multiple comparisons can determine which means differ significantly. The Bonferroni and Tukey's honestly significant differences tests are commonly used multiple comparison tests. When testing a large number of pairs of means, Tukey's honestly significant difference test is more powerful than the Bonferroni test. For a small number of pairs, however, Bonferroni is more powerful. GLM procedures were used instead of two-way ANOVA because the number of observations among sectors is different (SPSS Manual Guide, 2000).

For testing whether there is a link between the enforcement of implementing the IAS by ASM dated in September 1998 and the change in the extent of disclosure, possible pooling of time series cross section has been employed for the period pre and the period post the mandatory action across all JIC. This is done by running Paired-Samples t-test as a parametric test and Wilcoxon Matched-Pairs Signed-Ranks Test as non-parametric for finding out whether the difference between the two groups (pre and post) is significant.

### **5.3 Methodology for Assessing the Impact of Company-Specific Factors on the Disclosure Practices of Jordanian Companies**

After assessing the extent of disclosure for the JIC, the second aim for this study is to assess the impact of company-specific factors to find whether these factors affect the disclosure practice in Jordan. In order to accomplish the second objective, this study, in line with the methodological approach adopted in previous studies reviewed in chapter three, examines the association between selected company-factors and the extent of disclosure in the annual reports of JIC. In this section a discussion for the identification of the company-specific factors (i.e. independent variables), developing the hypotheses to be tested and details of the data analysis procedure and testing the hypotheses will be explored.

#### **5.3.1 Company-Specific Factors and Development of Hypotheses**

When the extent of compliance is not fully achieved, an issue comes to mind that the reason for this result has to be explored. So, as it is reached by previous researchers in different countries (Ahmed and Nicholls 1994; Al-Modahki 1996; Chow and Wong-Boren 1987; Cooke 1991; Cooke 1993; Cooke 1989a; Cooke 1989b; Cooke 1992; Haniffa 1998; McNally et al. 1982; Raffournier 1995; Soh 1996; Wallace 1987), it is expected in this study as well that JIC will not comply fully with the IAS. Positive accounting theory such as political, agency and signalling theories were used to justify the influence of company-specific factors on disclosure as a theoretical approach



explored experimentally since 1961 by Cerf. Political process theories suggest hypotheses about the use of accounting data to fix prices in regulated industries, to fix tax policy or to decide policy on subsidies for companies. Companies which are politically visible and subject to high political costs, may employ financial information to avoid these risks, and also may execute accounting changes to reduce such risks or even costs (Holthausen and Leftwich 1983). Therefore, the existence of contracting costs – agency and political costs – may be used to explain the attitude of companies towards the disclosure of information and choice among different accounting procedures (Watts and Zimmerman 1983; Watts and Zimmerman 1990). Another mechanism for explaining the financial information policy followed by companies is signalling (Spence 1973). The existence of information asymmetry between the firms and investors may produce the problem of adverse selection (Akerlof 1970). Firms to indicate underlying reality and to influence external users when making decisions regarding them may use financial information. It may be argued that only good firms will use this instrument, because the quality of firms can be later observed without difficulty, and firms would be punished by the market if they sent wrong signals (Morris 1987). Therefore, the second objective of the study is to justify this result by looking at some company-specific factors trying to explain, if it is possible, the reason of the differences in the extent of disclosure in compliance with IAS.

Halbouni (2000) investigated the difference in the extent of disclosure for JIC regarding selected IAS (2, 4, 7, 13, 16, 18 and 21) by exploring some company-specific factors. Her finding was that there was no significant effect for these factors influencing the extent of disclosure. However, this study is not only investigating factors more popular as the review for the literature showed ‘see Chapter Four-Literature Review’ but also the difference in the period under consideration (1995-2000) and investigating all related IAS might significantly influence the results.

There exists empirical evidence in the literature that some company-specific factors are associated with corporate disclosure level. On the basis of such indication in the

literature, the following main hypothesis is formulated in the null form

*“H02: None of the company-specific factors are significant in explaining differences in complying IAS for JIC listed on ASE and their shares traded over the period 1995-2000”.*

The number of company-specific factors covered in previous studies varied considerably and there is no generally accepted single set of such factors. However, as mentioned before, the theoretical arguments and evidence from previous empirical studies reviewed in Chapter four suggested that company size, types of industry are amongst the most important ones. Factors related to companies' performance such as profitability and liquidity ratios as well as the auditor type and foreign ownership/investment in capital are other popular factors considered. Therefore, on the basis of consideration of previous empirical studies, theoretical arguments and availability of data and applicability to Jordanian companies, the following variables are selected for analysis in this study and a number of sub-hypotheses are formulated.

### **5.3.1.1 Company Size**

Although evidence from previous research provides overwhelming support for the hypothesis that there may be a positive relationship between firm size and level of disclosure, the theoretical basis for such a relationship is unclear. There are several reasons for expecting a positive/negative relationship between the company's size and its extent of disclosure.<sup>7</sup> The impact of large firm on an economy is quite considerable. For example, they account for a great proportion of the goods and services produced the number of persons employed, the quantity and value of raw materials consumed and the quantity and value of components imported into a country. Despite the conflicting views and a few inconsistent results, evidence from

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<sup>7</sup> The firms in this study are some of the largest in Jordan. Compared to other advanced democratic such as the UK and the U.S.A, firms in Jordan are local, small in size and not complex. There are no major multinational, stock ownership is not widely spread, and a few key owners control a firm in Jordan.



previous studies which have been done in developed countries provide a strong indication that there is a positive and significant relationship between company size, as estimated by total book value of assets, total market value of the firm, total revenue, turnover, current assets, total assets, or total number of shareholders and disclosure level suggesting that larger companies follow better disclosure practices (Ahmed and Courtis 1999; Belkaoui and Kahl 1978; Buzby 1975; Cerf 1961; Chow and Wong-Boren 1987; Cooke 1991; Cooke 1989a; Cooke 1989b; Cooke 1992; Courtis 1979; Depoers 2000; Dumontier and Raffournier 1998; Firth 1979; Hossain et al. 1995; Hossain et al. 1994; Inchausti 1997; McNally et al. 1982; Meek et al. 1995; Raffournier 1995; Singhvi and Desai 1971; Stanga 1976; Wallace and Naser 1995; Wallace et al. 1994). In developing countries, however, although a consistent significant positive association between company size and disclosure level has been reported, it is noted that a wide variation in results exists (Ahmed and Nicholls 1994; Chow and Wong-Boren 1987; Hossain et al. 1994; Marston and Robson 1997; Tai et al. 1990; Wallace 1987).

Several arguments may be advanced to justify such positive association between size and disclosure adequacy in annual reports (Buzby 1975; Choi 1973; Cooke 1989b; Firth 1979; Schipper 1981; Wallace and Naser 1995; Wallace et al. 1994). Among the most important reasons for this relationship are the following: 1) Larger firms can more easily afford the costs of collecting and disclosing more adequate information. 2) Larger firms may need even more funds from the capital markets in order to continue to expand their activities at a rate which might not be possible with internal sources only and hence these firms would be more likely to disclose more information so as to be able to obtain the needed funds at reasonable cost. 3) The competitive advantage of larger firms may be less endangered by more adequate disclosure than would be the case for small firms. 4) Larger firms tend to employ highly skilled individuals and sophisticated management reporting systems that can provide a wider array of corporate information. 5) The number of subsidiaries and areas of activity tends to grow with the size of the company, thus increasing the amount of information to be processed by managers. 6) There may also be greater demands on large firms to

provide information for analysts and the public. According to Watts and Zimmerman (1986); Watts and Zimmerman (1978), large firms are more sensitive to political costs, which force them to disclose more in order to allay public criticism or government intervention in their affairs. In contrast, the management of small firms may believe more strongly that the disclosure of more detail could endanger their competitive position (Mautz and May 1978; Singhvi and Desai 1971). 7) In the agency theory literature, Jensen and Meckling (1976) contend that agency costs increased with the amount of outside capital. Agency theory predicts that larger firms will disclose more information in their accounts to alleviate the potential for wealth transfers from suppliers of outside capital to managers.

To summarise, however, there is a demand for better disclosure by large firms and they are better placed to supply it. Therefore, company size is selected as one of the variables for the analysis. One problem, however, is how to decide what variable to use to represent the size, since size can be estimated in a number of ways.

Cooke (1992) has pointed out that there is no overwhelming theoretical reason to select one variable rather than another. Cooke (1989b) concluded that while size, as estimated by total assets, sales, and number of shareholders, is an important variable, it does not matter which of the three measures of size is selected. One of the size variables most commonly used by previous researchers is the book value of total assets (Cooke 1989b). According to Soh (1996) the book value of total assets may be considered to be a more robust measure of company size as it is less affected by external conditions. In this study, the book value of total assets was chosen as a measure of size. However, it has to be mentioned that companies might have intangible assets. This kind of asset is not fully included in the balance sheet. Therefore, using the book value of total assets is not considering the value of some intangible assets. But, because this study deals with companies where intangible assets are less likely to be important, using the book value of total assets is still an acceptable approach. Based on this variable, the following sub-hypothesis is formulated in the null form



*“H02 (a): There is no association between book value of total assets and the extent of disclosure in the annual reports of JIC listed on ASE and their shares traded during the period 1995-2000”.*

To test the above hypothesis, company size (total assets) for the years under consideration (1995-2000) for JIC included was calculated. Therefore, the study classified these companies into two groups as companies with total assets equal or more than the mean were called "large companies" and companies with total assets less than the mean were called "small companies". The total asset's means for JIC included in this study have been used to allow the internal environment and its effect in classifying the companies into large and small. This classification has been used for testing the above hypothesis using the univariate analysis (parametric and non-parametric tests). Following the robust approach, however, the actual values for the company size (total assets) have been employed for testing the above hypothesis using the multivariate analysis.

#### **5.3.1.2 Audit Firm**

Support for examining audit firm size as a determinant of disclosure level has come from several studies (DeAngelo 1981; Firth 1979; Singhvi and Desai 1971; Wallace et al. 1994). Empirical support for a positive relationship between audit firm size and disclosure level is inconclusive. Some studies have found that large audit firms show a significant association with higher disclosure levels (Ahmed 1996; Ahmed and Nicholls 1994; Al-Mulhem 1997; Cooke 1993; Cooke 1989a; Craswell and Taylor 1992; Dumontier and Raffournier 1998; Hossain et al. 1994; Inchausti 1997; Malone et al. 1993; Patton and Zelenka 1997; Raffournier 1995; Singhvi and Desai 1971). Similar results were obtained by other studies, but with lower significance levels (McNally et al. 1982; Tai et al. 1990). No relationship between size of audit firm and disclosure levels was found in other studies (Courtis 1979; Firth 1979; Hossain et al. 1995; Hossain et al. 1994; McNally et al. 1982; Singhvi 1968; Tong et al. 1990; Wallace et al. 1994). One study found that large audit firms show a significantly

negative association with mandatory disclosure compliance of Hong Kong listed companies (Wallace and Naser 1995).

Although the primary responsibility for preparing the annual report rests with the company's management, the audit firm of a company can influence significantly the amount of information disclosed in annual reports (Belkaoui and Kahl 1978; Benjamin et al. 1990). It is argued by Beaty (1989); DeAngelo (1981); Firth (1979) that the size of the auditing firm might affect auditing quality. The argument here is that to avoid any negative impact on their reputation, large audit firms are more likely to associate themselves with clients whose reporting policies are of higher quality. Therefore, larger firms have a greater incentive to discover and report a breach in the client's accounting system because client financial statements issued with errors and inadequate disclosures would diminish the reputation of larger audit firms more than that of smaller firms. This phenomenon called by DeAngelo "collateral aspect". Specifically, it is argued that larger, better-known audit firms exert more influence over the disclosure policies of companies than smaller and lesser-known audit firms.

In contrast, in their attempt to avoid the economic impact of losing a client, small audit firms are likely to be more sensitive to client demands for non-disclosure (Malone et al. 1993). Another explanation comes from signalling theory. Being audited by one of the Big Fix firms is a signal of high cash flow expectations. Good firms are likely to disclose more information to 'advertise' their performance (Bar-Yosef and Livnat 1984). In addition to the possible influence of the size of auditing firm on disclosure, one would argue that auditing firms which have professional contracts with international auditing firms more likely to be up-to-date with any international development in accounting and it might be expected that they influence their clients to present more information.

Size can be estimated by different criteria such as number of audit hours, total revenues, number of customers and number of personnel working for each firm which were unavailable in Jordan. Therefore, for this study audit firms in Jordan were



classified into two groups; the first group is for JIC whose annual reports are audited by one of the top five international audit firms and the second group is otherwise.<sup>8</sup>

Table 5.5 shows the big five international audit firms working in Jordan and the number of JIC included in this study audited by each of them:

**Table 5.5: Big five international audit firms working in Jordan and the number of JIC included in this study audited by each of them over the period 1995-2000**

	1995	1996	1997	1998	1999	2000
1) Saba & Co.	7	7	9	9	11	10
3) Allied Accountant	9	10	7	6	6	5
Total number of JIC audited by One of the Top Five international audit firms working in Jordan	16	17	16	15	17	15
JIC audited by one of the Top Five international audit firms working in Jordan %	32	34	32	30	34	30
8) Total number of JIC audited by one of the audit firms other than the big five	34	33	34	35	33	35
Total Number of JIC Included in the study	50	50	50	50	50	50

As it can be seen from the above table the big five international audit firms working

<sup>8</sup> The big five international audit firms are Arthur Anderson, Deloitte & Touche, Ernst & Young, KPMG and PricewaterhouseCoopers. Jordanian regulations asking companies to register their names in Arabic, therefore, there are two of the big five international audit firms working actively in Jordan under the names of Allied Accountants who is representing Arthur Anderson and Saba & Co. who is representing Deloitte & Touche.

actively in Jordan were Saba & Co and Allied Accountant. Table 5.5 shows that those big five international audit firms working in Jordan audited 32% of the annual reports for the JIC included in the study for the year 1995 and 1997, 34% for the years 1996 and 1999, 30% for the year 1998 and 2000. Therefore, it can be concluded that the big five international audit firms dealt almost with one third of the JIC annual reports included in this study over the period 1995-2000.

To determine whether or not audit firm has an impact on the extent of disclosure, the following sub-hypothesis is formulated

*“H02 (b): There is no association between audit firm and the extent of disclosure in the annual reports of JIC listed on ASE and their shares traded during the period 1995-2000”.*

For testing the above hypothesis, the big five international audit firms were given one and zero otherwise in both test approaches (univariate and multivariate).

### 5.3.1.3 Industry Type

It has been argued in the literature that the extent of disclosure in financial reports is not likely to be identical throughout all industries. Belkaoui and Kahl (1978); Cooke (1992); Cooke (1989c) argued that differences in industry classification may be used to justify differences in disclosure adequacy for the following reasons: 1) the use of different or industry related accounting techniques, policies and/or procedures will lead to differential disclosure in annual as well as other reports. In other words, for more complex industries, might be more IAS are relevant comparing with other less complex industries which making the industry effect, 2) many industries, especially those which are oligopolistic, tend to be dominated by one firm which the others follow in many ways, hence a particular industry may have similar disclosure policies because of this “follow the leader” effect, 3) some industries may be more interested in public relations or more concerned about their social responsibilities, hence may disclose information while others do not, 4) it may be customary for a particular



industry to communicate more with the environment than is the case with others, and 5) an industry or its leading firm may become the innovative leader in changing the existing status of reporting to investors.

A number of previous empirical studies investigated the relationship between disclosure and industry type (Al-Mulhem 1997; Belkaoui and Kahl 1978; Cooke 1989a; Cooke 1989b; Cooke 1992; Cooke 1989c; McNally et al. 1982; Stanga 1976; Wallace 1987; Wallace and Naser 1995; Wallace et al. 1994). A significant relationship was in some studies (Belkaoui and Kahl 1978; Cooke 1991; Cooke 1989a; Cooke 1989b; Cooke 1992; Stanga 1976; Wallace and Naser 1995), but not in others (Inchausti 1997; McNally et al. 1982; Wallace 1987; Wallace et al. 1994). An explanation for lack of consistency across these studies might be found in varying definitions of industry classifications.

Hence, the type of industry is also considered as one of the variables likely to be associated with the extent of disclosure and accordingly the following sub-hypothesis is formulated in the null form

*“H02 (c): There is no association between industry type and the extent of disclosure in the annual reports of JIC listed on ASE and their shares traded during the period 1995-2000”.*

It has to be mentioned that past researchers such as McNally et al. (1982) and Cooke (1992) have noted that a potential statistical problem may arise if the industry grouping contains a very small number of companies. The industry grouping used in this study done by the researcher as follows: 1) Machinery and metal industry (9); 2) Mining and building equipment (11); 3) Textiles (7); 4) Chemical (13); and 5) Food and other services (10).

#### **5.3.1.4 Profitability**

A firm's profitability has been hypothesised to be positively associated with its

disclosure level. When profitability is high, management may be motivated to disclose detailed information so that their continuation in their positions and their compensations are maintained and justified (Singhvi 1968). Singhvi and Desai (1971) argument for testing the variables profit margin and earnings return is that higher earnings motivates management to provide greater information because managers feel that greater disclosure provides assurance to investors of profitability and thus increase the compensation of management. In addition, firms with good news tend to disclose more detailed and precise information than firms with bad news, especially in a setting where more information allows investors: 1) to smooth earnings across periods (Imhoff 1992; Newman and Sansing 1992), and 2) to change the composition of firms in their investment portfolios.

It is argued, moreover, that a highly profitable firm is more likely to signal to the market its superior performance by disclosing more information in its annual report (Buzby 1975; Cooke 1989a; Cooke 1989b; Curtis 1979; Wallace and Naser 1995; Wallace et al. 1994). Signalling theory means that management of firms with information that implies a higher value than that established by the market will have incentives to disclose this information so that their values are adjusted upwards. In contrast, management of firm with information that implies a lower value than that established by the market may be tempted to suppress this information in order to avoid its negative effect on the firm's market value. This is consistent with the market efficiency, which is not surprising, as it has been proved by many previous studies (Bamber and Cheon 1995; Beaver 1968; Bonnier and Brunner 1989; Bottom 1998; Hoegh-Krohn and Knivsfla 2000; May 1971; Opong 1996; Porter et al. 1995). However, Lang and Lundholm (1993) argue that disclosures are likely to be related to a firm's profitability, only if perceived information asymmetry between managers and investors is high. They added, *"The results from the theoretical and empirical research suggest disclosure could be increasing, constant, or even decreasing in correspondence with firm performance"* (P.250).

The literature of the field of corporate finance has traditionally made a distinction



between the business risk of the firm, which is the result of the policy compromise the firm must make between the long term objective of profitability and the short run objective of liquidity, and the financial risk which is the result of another policy decision with respect to the optimal mix of debt and equity financing (Forsyth and Johnson 1974). These two accounting based risk measures can be considered as an indication of the firm's willingness to reduce the uncertainty in the capital market. Since it is generally assumed that the firm is managed in such a way as to increase the value of the stockholder's equity, or at least to prevent it from declining, it is reasonable to assume that the firm is interested in reducing the uncertainty of investors. It is, therefore, hypothesised that the greater the soundness estimated by the profitability and liquidity ratios is expected to be associated with greater disclosure. Further support for a positive relationship between profitability and disclosure comes from the earning management literature. A review of the earnings management literature and its implications for standard setting has been done by Healy and Wahlen (1999). The study concluded that the earnings management literature currently provides only modest insights for standard setters. Prior research has focused almost exclusively on understanding whether earnings management exists and why. The findings indicates that earnings management occurs for a variety of reasons, including to influence stock market perceptions, to increase management's compensation, to reduce the likelihood of violating lending agreements, and to avoid regulatory intervention (Beatty et al. 1995; Beaver and Engel 1996; Beaver and Engel 1989; Collins et al. 1995; DeAngelo 1988; Scholes et al. 1990; Wahlen 1994). This evidence of managerial incentives to create "good news" leads support to a view that disclosure will positively correlate with earnings.

Empirical evidence provides conflicting results. A significant positive relationship was found in some studies (Belkaoui and Kahl 1978; Singhvi 1968; Singhvi and Desai 1971; Wallace and Naser 1995; Wallace et al. 1994), while other studies found no such relationship (Cerf 1961; Dumontier and Raffournier 1998; Inchausti 1997; Lau 1992; McNally et al. 1982; Meek et al. 1995; Raffournier 1995). A significant negative association between profitability and disclosure level has also been reported

(Belkaoui and Kahl 1978; Wallace and Naser 1995). It has to be mentioned, however, that most of these researches have been done on developed countries such as USA, UK, New Zeland, and Spain.

Previous studies employed the following measures of profitability; rate of return and earnings margin (e.g. Singhvi and Desai (1971); Wallace et al. (1994)) and the ratio of net profits to total assets (e.g. Belkaoui and Kahl (1978)). However, clearly there are other measurement of profitability such as earning per share (EPS), earning per share growth, return on investment (ROI), dividend per share and earning before interest, tax, depreciation and amortisation (EBITDA). Most of these measures are current short-term measures of performance. Only growth in EPS can be interpreted as a long-term measure. There is an issue about whether disclosure follows profitability in which case we would lag the variable (consider the previous year profitability value). However, it could be argued that measurement can make disclosure decisions contemporaneously with profitability.

For this study current ROI has been employed for exploring the influence of profitability on the extent of disclosure. The following sub-hypothesis is formulated in the null form

*“H02 (d): There is no association between profitability and the extent of disclosure in the annual reports of JIC listed on ASE and their shares traded during the period 1995-2000”.*

There are many issues in calculating return on investment (ROI). For this study it is estimated by using the following formula (Holmes and Sugden 1999; Pendlebury and Grove 2001):

$$\text{ROI} = \text{Net Operating Profit after Tax} / \text{Capital Employed (Equity Book Value} + \text{All Borrowing Book Value)}^9.$$

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<sup>9</sup> For calculating the Net Operating Profit After Tax, the corporate tax rate used for industrial



To test the above hypothesis, returns on investment average for JIC included were calculated. Therefore, the study groups these companies into two kinds; companies with ROI equal or more than the average were called "high return on investment" and companies with ROI less than the average were called "low return on investment". The ROI average for JIC included in this study has been used to classify these companies. Therefore, by doing so, the internal environment and its effect in deciding the ROI has been taken into account. This classification has been used for testing the above hypothesis using the univariate analysis (parametric and non-parametric tests). Following the robust approach, however, the actual values for the profitability (ROI) have been employed for testing the above hypothesis using the multivariate analysis.

#### **5.3.1.5 Capital Structure**

Conflicting results have been reported by previous empirical studies. A positive association between leverage, as estimated by book value of debt to shareholders' equity, book value of total debt to total assets, long-term debt to equity, or long-term debt to total assets and disclosure level has been hypothesised (Courtis 1979; Hossain et al. 1995; Malone et al. 1993; Myers 1977; Schipper 1981; Wallace et al. 1994) while others did not find such significant influence (Ahmed and Nicholls 1994; Barber and Sen 1984; Chow 1987; Hossain et al. 1994; Ingram 1984; Meek et al. 1995; Raffournier 1995; Wallace and Naser 1995; Wallace et al. 1994). In contrast, Belkaoui and Kahl (1978) observed a significant negative relationship between the disclosure index and the leverage ratio.

Jensen and Meckling (1976) argued that because more highly levered firms incur more monitoring costs, they seek to reduce these costs by disclosing more information in annual reports. Since the firm's investment, dividend and financing decision are linked via its cash flows; creditors achieve indirect control by limiting

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companies was 15% over the period 1995-2000 according to the Income Tax Law No. 57 of 1985 and

the firm's financing policies and dividends (Smith and Warner 1979). Therefore, the higher the proportion of debt in the firm's capital structure, the higher the agency costs because a larger proportion of debt allows for greater potential wealth transfers from creditors to shareholders. By providing discretionary information, managers may contribute to reducing conflicts between shareholders and creditors and perceive a benefit through the reduction in agency costs.

According to the operating procedures of all the financial institutions, borrowing companies are required to comply with a number of requirements. Companies with large borrowing are monitored closely by financial institutions and may be required to furnish information more frequently than companies having small amounts of debt. Consequently, there is an a prior expectation that institutional financed companies carrying large amount of debt on their balance sheets are likely to provide more detailed information in their annual report than companies with small amount of debt. It could be argued, however, that debt management is an important issue and most debt contract contains restrictive covenants where these are often expressed as accounting variables. These accounting variables are general in terms of debt interest covered or debt equity ratio (D/E). However, the specification of this could be quite important. Maybe the D/E ratio does not offer any explanatory power in the variation of disclosure index until the critical boundary is reached. This would suggest using a dummy variable approach for the variable.

For the purpose of this study the D/E ratio average for JIC considered will be calculated using the following formula, which will be justified, in section 5.4.1.2:

$$D/E = \text{Book Value of All Borrowing} / (\text{Market Capitalisation} + \text{Book Value of All Borrowing})$$

So, the study groups these companies into two kinds; companies with D/E equal or

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its amendment No. 14 of 1995 (Article 17).



more than the average were called "high geared companies" and companies with D/E less than the average were called "low geared companies". The D/E average for JIC included in this study has been used to classify these companies. Therefore, doing so, the internal environment and its effect in deciding have taken the D/E into account in this classification (Healy and Wahlen 1999). The above classification has been used for testing the hypothesis using univariate analysis (parametric and non-parametric tests). Following the robust approach, however, the actual values for the capital structure (D/E) have been employed for testing the above hypothesis using the multivariate analysis. It has to be mentioned that the reason for inclusion of the absolute value of debt was to assess whether the financial institutions and banks have had a favourable influence on the financial reporting practices of Jordanian borrowing companies (Ahmed and Nicholls 1994).

The following sub-hypothesis is formulated in the null form

*"H02 (e): There is no association between capital structure and the extent of disclosure in the annual reports of JIC listed on ASE and their shares traded during the period 1995-2000".*

#### **5.3.1.6 Data Analysis and testing the Hypotheses**

In choosing an appropriate statistical test for assessing the relationship between the extent of disclosure (dependent variable) and company-specific factors, the researcher is usually faced with the problem of selecting between a parametric or non-parametric test. Parametric tests have certain conditions underlying their use. When these conditions are satisfied, parametric tests are considered to be the most powerful tests for rejecting the null hypothesis when it is false. On the other hand, non-parametric tests do not make assumptions about the parameters of the population from which a sample is drawn, and non-parametric tests apply to ordinal and nominal scales (Siegel 1956).

A review of the studies, which employed disclosure indexes, indicates that they used

both parametric and non-parametric tests (Cooke 1989b). The main analytical tools used in the early studies were univariate statistics (e.g. non-parametric Chi-square and Wilcoxon matched pairs signed rank tests or parametric ANOVA), most recent studies have used multivariate analysis (parametric test) by using multiple regression procedures (Al-Mulhem 1997; Cooke and Wallace 1989; Hossain et al. 1994; Patton and Zelenka 1997; Raffournier 1995; Wallace 1987). Therefore, this research not only carried out univariate analyses as a method in early studies but also multivariate analyses as a method adopted in most recent ones. In addition, Patton and Zelenka (1997) reported that a series of univariate analyses may overstate the apparent overall explanatory power of a set of independent variables, which force toward applying both approaches.

The univariate analysis involved both parametric and non-parametric tests. Since there are two categories of companies for the variables company size, audit firm, profitability and structure, it was decided to undertake a parametric two independent-samples t-test to examine the significance of association between these three variables and the dependent variable the extent of disclosure. Furthermore, a non-parametric Mann-Whitney U test for the same variables was run to check the results of the parametric test. On the other hand, it was considered better to use a parametric one-way ANOVA rather than undertake a multiple t-test for the variable industry type, because there were more than two categories of company for this variable. Kinnear and Gray (1995), noted that unlike ANOVA, the t-test cannot be used to evaluate a hypothesis about three or more population means. Again a triangulation approach was adopted and a Kruskal Wallis test (a non-parametric alternative one-way ANOVA) for variable industry type was also run to check the results of the parametric test.

Both the t-test and ANOVA are parametric tests and assume that the data are normally distributed and there is homogeneity of variance. In order to test whether the normality assumption is satisfied, tests in terms of skewness, kurtosis and K-S Lilliefors were undertaken. The equal variance assumption was also tested using the



Levene test for homogeneity of variance as suggested by Norusis (1995).<sup>10</sup>

The multivariate analysis carried out in this study is not only multiple regression routines but also stepwise regression technique in order to determine which explanatory variables are “best” in explaining extent of disclosure variation over the period under consideration. Multiple regression routines for each of the five six years covered in this study, however, were tested by using all variables using the actual values approach for the variables company size, profitability and structure and the dummy variable approach for the variables audit firm and industry type. The overall extent of disclosure was the dependent variable and the independent variables were natural logarithm of company size<sup>11</sup>, audit firm, industry type, profitability and structure.

One of the problems of undertaking any multiple analyses is that there may be multicollinearity between independent variables. The multiple regression model assumes that there is no linear relationships between the values of the independent variables. If the linear relationships exist then it becomes impossible to compute the estimators ( $\beta_i$ ) (Thomas 1997, P.237). It is stated that the variances and hence standard errors of the estimators (coefficients of the explanatory variables) will tend to be large (inflate standard errors) whenever there is a high degree of multicollinearity. Since there is no reason why multicollinearity should affect our estimators of these standard errors, their size will be reflected in any estimated standard errors that we compute. This is the major possible adverse factor when multicollinearity is present - large standard errors and hence large estimated standard errors. One consequence of this is that any confidence intervals for the true  $\beta_j$  parameters that we form may turn out to be very wide. That is, our estimates will lack precision and we will be very uncertain about true parameter values (Thomas 1997,

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<sup>10</sup> In Leven test, if the observed significance level (P) is small (not significant) you can reject the null hypothesis that the two population variances are equal (Norusis 1995).

<sup>11</sup> It has to be mentioned that the natural logarithm for company size has been employed because linearity assumption improved, which is one of the main assumptions for implementing the regression model, comparing with the actual values.



PP.238-239). Therefore, multicollinearity checked not only by testing for Pearson Correlation Coefficients as it has been adopted by previous empirical studies (Farrar and Glauber 1967; Judge et al. 1985; Malone et al. 1993; Street and Bryant 2000; Wallace and Naser 1995; Wallace et al. 1994)<sup>12</sup>, but also by running the stepwise regression technique (Malone et al. 1993; Neter and Kutner 1989). Malone et al. (1993) reported that an examination of the regression coefficients was made at each step of the stepwise procedures. This examination showed that as variables were removed from the model, the coefficients of these variables, their standard errors, and the mean-square error remained relatively stable. In the presence of multicollinearity, as variables were removed, one would expect these values to exhibit instability. A second problem is that since multiple regression analysis is to be used, each category of the independent variables audit firm and industry type requires dummy variables for every year covered in this study. Consequently, there are two dummy variables within the independent variable audit firm (JIC audited by one of the top five international audit firms, otherwise), five dummy variables within the independent variable industry type<sup>13</sup> are: 1) Machinery and Metal Industry; 2) Mining and Building Equipment; 3) Textile; 4) Food and other Services; and 5) Chemical. For the other independent variables, however, the actual values will be employed.

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<sup>12</sup> When we test for the multicollinearity, we look at the correlation coefficients, which should not be considered harmful until they exceed 0.80 as it is argued by Farrar and Glauber (1967) and Judge et al. (1985) while Street and Bryant (2000) argued that it should not exceed 0.90. Wallace et al. (1994), however, considered coefficient of correlation exceeding 0.77 high enough to cause multicollinearity concern.

<sup>13</sup> It is important to notice here that we must drop one dummy variable if we are using an intercept term when it comes to run the regression, otherwise we would produce a linear dependence in the data matrix which is called perfect collinearity (Johnston 1972, P.180; Gujarati 2003, P.315). Nie *et al.* (1975, P.374) discussed the problem by saying the inclusion of all dummies created from given nominal variable would render the normal equations unsolvable because the  $k$ th dummy variable is completely determined by the first  $k-1$  dummies entered into the regression equation. It is therefore necessary to exclude one of the dummies from the equation. The exclusion of one of the dummy variables, however, does not actually result in a loss of information since each category in the nominal variable concerned is presented by a unique combination of the five dummy variables in this study. In fact, the excluded category becomes a sort of reference point by which the effects of the other dummies are judged and interpreted and for this reason the excluded category is referred to as the *reference category*. Therefore, it has been decided in this study to exclude the Food and Other Services sector from the multiple regression equation because of the abroad definition for the Jordanian companies included in this sector and for avoiding the perfect collinearity effect. Concerning the audit firm, moreover, JIC audited by other than one of the top five international audit firm group were excluded from the regression equation.



The regression equation used is as follows:

$$Y_{(1-6)} = \alpha_0 + \beta_1 D_1 + \beta_2 D_2 + \beta_3 D_3 + \beta_4 D_4 + \beta_5 D_5 + \beta_6 D_6 + \beta_7 D_7 + \beta_8 D_8 + \beta_9 D_9 + \epsilon$$

Where:

Y = Disclosure indices (Y<sub>1</sub> for 1995, Y<sub>2</sub> for 1996, Y<sub>3</sub> for 1997, Y<sub>4</sub> for 1998, Y<sub>5</sub> for 1999, Y<sub>6</sub> for 2000)

D<sub>1</sub> = LN Company Size (total assets)

D<sub>2</sub> = Audited Firm

D<sub>3</sub> = Profitability (ROI)

D<sub>4</sub> = Structure (D/E)

D<sub>5</sub> = Machinery and Metal Industry

D<sub>6</sub> = Mining and Building Equipment

D<sub>7</sub> = Textile

D<sub>8</sub> = Food and Other Services

D<sub>9</sub> = Chemicals

$\epsilon$  = Error terms (disturbance)

$\alpha_0$  = Intercept (constant)

$\beta_i$  = Coefficients of the explanatory variables

The disturbance term represents two sets of factors. First, it represents the effect on the dependent variable (extent of disclosure) of all variables other than the ones included in the study. Second, even if the variable included were the only identifiable variable influencing the dependent variable, it should not be expected that the same level of dependent variable will stay year after year.  $\epsilon$ , therefore, is included to allow for the basic random unpredictability of human behaviour (Thomas 1997, P.78).

An important point to note is that, in order to undertake ordinary least-squares (OLS) multiple linear regression, the data must fulfil certain conditions, i.e. normality,

homogeneity (equal variance), uncorrelated<sup>14</sup> and linearity. The most commonly suggested approach to check whether or not the data fulfil these conditions is an analysis of the residuals (Norusis 1995; Kinnear and Gray 1995). In this study a Q-Q plot of residuals was analysed and formal tests of normality of residuals (skewness, kurtosis and K-S Lilliefors) were undertaken to check the normality assumption (Norusis 1995, PP.452-453). Furthermore, the linearity and homogeneity assumptions were checked by analysing the scatterplots of the regression standardised predicted values against the residuals (Kinnear and Gray 1995, P.174). Finally, a commonly used statistic for testing the existence of autocorrelation among residuals is the Durban-Watson (DW) statistic, which will be, employed (Maddala 2001, P.228; PP.242-245).

An important issue to discuss is that, in the case of the regression model, the dependent variable is the extent of disclosure. Since the dependent variable in the present model was expressed as a ratio (constrained to lie between zero and one), the application of the standard OLS regression was considered inappropriate because the OLS approach assumes an unconstrained (unbounded) dependent variable. For a constrained dependent variable the OLS technique cannot ensure that estimates of the dependent variables will lie between zero and one, that is, there is a problem that the model would give predictions of probabilities greater than one (Green 1991; Hanushek and Jackson 1977). In order to introduce the zero-one bounds into the model, transformations involving the dependent variable generally are required before the OLS regression could be applied (Hanushek and Jackson 1977). One such method is to transform the dependent variable logistically, that is taking the logarithm of the

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<sup>14</sup> Correlation between the error terms arising in time-series data which called autocorrelation or serial correlation. If autocorrelation exists, that means the error term  $u_t$  at time period  $t$  is correlated with error terms  $u_{t+1}$ ,  $u_{t+2}$ ,... and  $u_{t-1}$ ,  $u_{t-2}$ ,... and so on. Such correlation in the error terms often arises from the correlation of the omitted variables that the error term captures. The correlation between  $u_t$  and  $u_{t-k}$  is called an autocorrelation of order  $k$ . the correlation between  $u_t$  and  $u_{t-2}$  is called the second-order autocorrelation and is denoted by  $\rho_2$ , and so on. Hence, there are  $(n-1)$  such autocorrelations if we have  $n$  observations. The consequences of autocorrelation errors are: 1) the least squares estimators using the multiple regression are unbiased but are not efficient, and 2) the sampling variances are biased and sometimes likely to be seriously understated. Thus,  $R^2$  as well as  $t$  and  $f$  statistics tend to be exaggerated (Maddala, 2001, PP. 228-241).



odds ratio. Maddala (2001) argued that the log-odds ratio is a linear function of the explanatory variables. If  $P$  gives the probability of a firm disclosing a certain level of information, the logarithm of the odds ratio is given by

$$Y = \log (p/1-p)$$

Where  $Y$  = transformed extent of disclosure; and  $p$  = computed total extent of disclosure for each company. The reason for considering the odds ratio, however, is that for a particular value of  $Y$ ,  $P$  is guaranteed to lie in the range  $0 \leq P \leq 1$ , a requirement of all probability measures (Holmes and Nicholls 1989). The transformed extent of disclosure was then regressed on attributes discussed earlier by applying the OLS regression technique. Cooke (1998), however, argued that in most disclosure studies, prediction is not the purpose of the study, but rather an explanation of the variability of the disclosure scores is sought and so the problem is of limited importance.

#### **5.4 Methodology for Assessing the Financial Consequences of Adopting IAS**

As it is stated before the third objective of the study is to investigate the consequences of adopting IAS as far as the Jordanian financial market is concerned. For exploring this issue, the following aspects could be investigated: 1) to what extent IAS reduce the systematic risk estimated by beta, unsystematic risk estimated by residuals variance, risk premium estimated by the difference between market return and risk free rate, and cost of equity capital estimated by the expected return? It is conceivable, however, that the cost of equity capital has been influenced by other changes taking place over the period other than the change in the extent of disclosure in compliance with IAS. In particular, the firms may have been changing their business risk or their financial risk and this need to be controlled for in assessing the impact of the change in disclosure on the cost of equity capital. It is also conceivable that the firms have responded to the change in extent of disclosure in compliance with IAS by changing their business and financial risk., 2) overall, can IAS adoption be

associated with a reduction in JIC share price volatility?, 3) does bid-ask spread narrow as a result of complying with IAS?

The objective is based on the idea that a firm's disclosure policy is vital factor in determining its estimated systematic risk, unsystematic risk, risk premium, and cost of equity capital. Since Jordan experienced for long time loose and vague disclosure requirements, complying fully the IAS in 1998 could be seen as a remarkable change might has influenced the Jordanian companies' extent of disclosure and consequently its systematic risk, unsystematic risk, risk premium, and cost of equity capital. In this regard, Corporation (1982) stated,

*"S&P considers accounting quality as a factor in establishing the rating of an industrial bond issue. This practice suggests that firms that consistently make timely and informative disclosures are perceived to have a lower likelihood of withholding value-relevant unfavourable information. As a result these firms are charged a lower risk-premium" (P.25).*

Sengupta (1998) added that investors try to assess the default risk premium of a firm based on all available information and one of the factors likely to enter into the default risk calculations is the probability that the firm is withholding value-relevant unfavourable information defined as information would increase the default risk premium of the firm. The larger this probability, the larger the risk premium the company will be charged and consequently the higher the company cost of equity capital. Gibbins et al. (1990) argued that comprehensive and transparent disclosures of value-relevant information by firms reflected of the equity markets efficiency should benefits firms through lower cost of capital for two reasons. First, increased disclosure by firms reduces transaction costs for investors resulting in greater liquidity of the market and greater demand for the firm's securities (Diamond and Verrecchia 1991). Second, increased disclosure reduces the estimation risk or uncertainty regarding the distribution of returns (Clarkson et al. 1996). Botosan (1997), moreover, argued that financial disclosure could result in decreased cost of capital because expanded disclosure reduces estimation risk, decreasing the total risk in owning the equity security, or reduces the risk by decreasing information asymmetries and, hence,



adverse selection risk.

Foster (1986) summarised the influence of capital markets on financial reporting. Companies compete with each other in capital markets on the types of securities offered and on the terms and expected returns promised. There is also uncertainty about the quality of firms (e.g., in terms of the nature of their assets and their cash flows) and their securities. Investors, customers, employees, and regulatory agencies demand information to assess the timing and uncertainty of current and future cash flows. Companies satisfy this demand in part by supplying accounting information, thereby enabling them to raise capital on the best available terms. Supplying information, however, is affected by existing regulations and by the costs associated with disclosure, such as information collection and processing costs, litigation costs, and proprietary (i.e., competitive disadvantage and political) costs. To illustrate, Choi and Levich (1990) interviewed executive of multinational corporations. These executives reported that they balance the benefit of a lower cost of capital with the cost of providing and preparing information and the potential effects of disclosure on their competitive status.

Gary et al. (1995) argued that those companies competing for funds in international capital markets provide a wide variety of accounting information beyond that are required. Indeed, the availability of accounting information is necessary to gain access to international capital markets. Such information disclosed by European multinational companies listed on London Stock Exchange are documented by Gary and Gray (1989), who detect strong overriding investor orientation consistent with the desire to raise capital in competitive international capital markets. Moreover, Choi (1973) examined disclosures by firms entering the European capital market. His premise was that these firms increase the extent of financial disclosure in order to obtain capital at lower cost and also he found that the extent of disclosure by firms increased immediately prior to entering the European market.

Ideally, the bid-ask spread is an important approach to investigate since it is

commonly thought to measure information asymmetry explicitly and considered to be one of the cost of equity capital components (Sengupta 1998; Welker 1995). It is argued, however, that the bid-ask spread addresses the adverse selection problem that arises from transacting in firm shares in the presence of asymmetrically informed investors. Less information asymmetry implies less adverse selection, which, in turn, implies a smaller bid-ask spread (Leuz and Verrecchia 2000). Market-makers provide transaction immediacy in financial markets by standing ready to buy from sellers at a quoted bid price and to sell to buyers at a quoted ask price. The spread between the bid and ask spread quotes is the price that the dealer charges for providing this service, and the spread must be large enough to allow the market-maker to cover the operating costs and earn a reasonable profit.

The market-maker, however, incurs three types of costs: inventory holding costs (Amihud and Mendelson 1980; Ho and Stoll 1981; Stoll 1978a), order-processing costs (Demsetz 1968), and adverse selection costs (Copeland and Galai 1983; Easley and O'Hara 1987; Glosten and Milgrom 1985). The total magnitude of these three costs, together with the intensity of competitive pressure, determines the size of market-makers' quoted bid-ask spread. The inventory holding cost component compensates the dealer for assuming non-diversifiable risk from holding an inventory of securities. The order processing cost component compensates the dealer for the clerical costs of processing orders, and the adverse selection cost component compensates the dealer for the expected losses to informed traders.

Some traders may have better information about the true value of the firm than does the market-maker. These informed traders buy when they know that the true value of the firm is greater than the market-maker quoted ask price and sell when they know that the true value of the firm is less than the marker-maker's quoted bid price (Bagehot 1971). The market-maker, unable to identify informed traders and required to transact at quoted ask and bid prices, always loses to informed traders (O'Hara 1995). This loss to informed traders in the category of cost described above as adverse selection costs. The market-maker sets his or her spread wide enough so that



he or she will recoup his or her adverse selection costs from profits that he or she earns from transacting with uninformed traders (Bagehot 1971; Copeland and Galai 1983; Glosten and Milgrom 1985). Conditions of high information asymmetry create incentives for traders to discover undisclosed information in an effort to realise trading gains, leading to more informed trading and hence larger losses by market-maker to informed traders. Market-maker will respond to this informed trading by widening the bid-ask spread (Bagehot 1971). Expanded financial disclosure can reduce informed trading reducing incentives for investors to discover undisclosed information (Diamond 1985; King et al. 1990), leading to decreased informed trading which should enable the market-maker to narrow the bid-ask spread (Glosten and Milgrom 1985) empirically proved (Boone 1998; Greenstein and Sami 1994; Healy et al. 1999; Lee et al. 1993; Raman and Tripathy 1993; Welker 1995). In turn, the decrease bid-ask spread increase the liquidity of the security (Bloomfield and Wilks 2000), thereby increasing share price (Botosan 1997; Diamond and Verrecchia 1991), reducing the illiquidity premium demanded by shareholders (Amihud and Mendelson 1986), reducing cost of equity capital, reducing stock market risk (systematic and unsystematic), increasing trade volume, and generally enhancing social welfare by creating increased opportunities for trade and bid-sharing.

Diamond and Verrecchia (1991) argued that disclosing private information firms could reduce the adverse selection component of the bid-ask spread and reduce their cost of capital. They suggested that greater disclosure reduced the amount of information revealed by a large trade thereby reducing the adverse price impact associated with such trades. As a result, investors are willing to take larger positions in a particular firm's stock than they otherwise would. This increases demand for the firm's securities and arises the current price of the firm's stock, thus reducing the cost of capital. However, unfortunately, information needed for testing the bid-ask spread is not available from ASE, therefore, the third question will be avoided.

In spite of the regulatory and theoretical support for increased disclosure by firms, direct evidence of a negative empirical relation between disclosure levels and the cost



of capital is limited ((Botosan 1997; Botosan and Plumlee 2000; Richardson and Welker 2001) on the cost of equity capital, and on the cost of debt (Sengupta 1998)). It is argued that, in part, the lack of strong empirical findings on the relationship between disclosure and cost of capital may be an artefact of the markets and information set that are used in empirical tests. If there is little variation in the information disclosed due to effective regulatory interventions, or if analysts routinely generate information independently of the firms' own disclosures, then the power of empirical tests will be significantly reduced (Richardson and Welker 2001). For example, Botosan (1997) and Richardson and Welker (2001) documented a statistically significant negative relation between the level of financial disclosure and cost of equity capital for their samples of USA and Canadian firms, respectively. This relation, however, holds only for the subset of their sample characterised by limited analyst following. A stronger test of the relationship between corporate information disclosures and the cost of equity capital is possible by choosing markets and information sets where corporate disclosure plays a larger role in market valuations. In this study, therefore, such relationship will be tested in Jordan, a developing country, experienced for long time loose and vague financial reporting requirements before adopting fully the IAS in 1998. This situation created an ideal environment for testing the impact of disclosure on systematic, unsystematic, risk premium, cost of equity capital.

The first issue will be investigated, therefore, is that whether IAS adoption has reduced the systematic risk estimated by beta (Barry and Brown 1985; Botosan 1997; Brealey and Myers 2000; Coles and Loewenstein 1988; Diamond and Verrecchia 1991; Firth 1984; Handa and Linn 1993; Kane et al. 1984; Klein and Bawa 1976; Opong 1996; Opong 1993; Ruback 1982; Scholes and Williams 1977; Zivot 2000), unsystematic risk estimated by residuals variance (Firth 1984; Fisher 1959; Fung and Rudd 1986; Sengupta 1998), risk premium estimated by the difference between ASE market return and risk free rate , and cost of equity capital estimated by the expected return (Brealey and Myers 2000). In order to explain the methodology to be followed, this section will give a background for the models being used for estimating beta,



residuals variance, risk premium, and the expected return, the rationality for controlling other factors might influence the association between the cost of equity capital and the extent of disclosure in compliance with IAS, the methodology for measuring these other factors, and finally discussing how the hypotheses will be tested. For the second issue of the financial consequences of adopting IAS, the share price volatility estimated by standard deviation of logarithm weekly share returns (Botosan 1997; Lang and Lundholm 1993; Leuz and Verrecchia 2000; Sengupta 1998) methodology will be discussed in a separate section.

#### **5.4.1 Capital Asset Pricing Model and Market Model**

Basically there are two alternative models for measuring the cost of equity capital: the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT).<sup>15</sup> It can be said that Capital Asset Pricing Model (CAPM) is a financial theory that has dominated the academic literature and influenced greatly the practical world of finance and business for over three decades since it was first expounded by the Nobel prize-winner William Sharpe and other theoreticians which is an extension of Markowitz portfolio theory to encompass the risk-return trade off of capital assets in equilibrium (Markowitz 1952). At its heart the CAPM has an old and common observation – the return on a financial asset increases with risk, but what is new is the measure of risk.

Basically, the model divides the risk in an individual security into two parts. The first part - known as the systematic risk - is that part of the total risk, which arises from a correlation between returns from the individual security, and the returns from the securities market as a whole. It cannot be diversified away. The second part - known as the unsystematic risk - is unique to the particular security and can be diversified away.

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<sup>15</sup> For more discussion of various approaches used in practice to estimate cost of equity capital see (Ehrhardt 1994; Gitman and Merurio 1982).

It is perhaps worth stressing that using the CAPM in risk evaluation does assume that the company's sole objective is to maximise investors' wealth. Also, the CAPM itself involves a number of critical assumptions. It assumes that the market in securities is perfect, with information being freely available to all market participants (the market is efficient). It assumes no transaction costs for trading in securities and that the borrowing rate for all market participants is equal to the lending rate. Furthermore, it assumes that, in the event of bankruptcy, all the assets of a company can be sold at their economic value with no selling or legal costs. If some of these assumptions are relaxed then the total risk of a company as well as its systematic risk becomes of importance to the investor.

The CAPM model has been used and argued widely by many researchers for estimating the cost of equity capital (Amihud and Mendelson 1986; Barry and Brown 1985; Brennen 1970; Clarkson et al. 1996; Coles and Loewenstein 1988; Coles et al. 1995; Copeland and Galai 1983; Demsetz 1968; Diamond and Verrecchia 1991; Glosten and Milgrom 1985; Handa and Linn 1993; Klein and Bawa 1976; Levy and Sarnat 1978; Markowitz 1991; Scholes and Williams 1977). However, the model has been criticised in the 1980s and 1990s when researchers looked at the relationship between the CAPM's systematic risk measure, beta, and the returns on shares over the period since the mid-1960s. They discovered either that there was absolutely no relationship at all or that beta had only a weak influence on the return shares produced (Arnold 1998, P.307). They commented that there were other factors (macroeconomics movements such as economic growth, inflation, and exchange rate changes) determining the returns on shares. Therefore, academics began exploring models, which were based on a number of explanatory factors influencing the returns on shares, rather than the one solitary variable considered in the CAPM. The most prominent is the Arbitrage Pricing Theory (APT), which permits many factors other than beta to explain share returns introduced by Ross (1976).

The logic behind the APT is much the same as that behind the CAPM: investors are



rewarded for taking on non-diversified risk. In the CAPM, one factor (the sensitivity to the market portfolio) captures this non-diversifiable risk. In contrast, the measure of this non-diversified risk in the APT can come from multiple factors. The number and identity of the factors are determined by the data on historical returns.

The APT is built on the simple premise that investors take advantage of the arbitrage opportunities. In other words, if two portfolios have the same exposure to risk but offer different expected returns, investors will buy the portfolio that has the higher expected returns and, in the process, adjust the expected returns to equilibrium (Damodaran 1997).

Arnold (1998), however, argued that the systematic factors permissible under the APT are many and various, compared with the CAPM's single determined variable. On the same time, APT does not specify what will be a systematic risk factor, nor does it state the size or the sign (positive or negative) of the " $\beta_s$ ". Each share or portfolio will have a different set of risk factors and a different degree of sensitivity to each of them.

Researchers have tried to identify the most frequently encountered systematic risk factors. This turn out to be changes in the macroeconomics environment such as inflation, interest rates, industrial production levels, personal consumption and money supply. However, some firms will be more sensitive to changes in the factors than others - this is estimated by the " $\beta_s$ ". Each of these risk factors has a risk premium because investors will only accept the risk if they are adequately rewarded with a higher return. It is the sum of these risk premiums when added to the risk-free rate that creates the return on a particular share or portfolio.

The APT is used and argued by many researchers (Abeysekera and Mahjan 1987; Ariff and Johnson 1990; Beenstock and Chan 1988; Chamberlain and Rothschild 1983; Chen 1983; Chen et al. 1986; Clare et al. 1997; Clare and Thomas 1994; Connor and Korajczyk 1993; Dhrymes 1985; Dhrymes et al. 1984; Faff 1988; Garrett

and Priestley 1997; Grvenewold and Fraser 1997; Hudgins and Thurner 1995; Lehmann and Modest 1988; Priestley 1996; Roll and Ross 1980).

However, for those who decided to move on from the CAPM, the APT has emerged not strictly as a replacement, but more as an extension of the model (Sharp 1964). The difference between the two models shows that the APT can be viewed as a development of the CAPM, since it is less stringent in its assumptions. On the other hand, both models have been subjected to scrutiny and both models have been criticised as un-testable theories. Perhaps the main criticism of the CAPM was that of Roll (1977), where he argued that to test the model correctly the true (but unknown) market portfolio has to be used. Of course the return on the true market portfolio cannot be observed therefore, the CAPM is not-testable. On the other hand the main criticism of the APT is the empirical evidence that if the construction of portfolios is changed or the number of stocks in portfolios is changed, the number of priced factors changed accordingly.

For the purpose of this study, however, CAPM model will be employed in order to see whether the extent of disclosure in compliance with IAS has influenced the cost of equity capital estimated by expected return. To justify using CAPM in this study it has to be said that in the CAPM the estimate of beta comes from the association of the security's return with the market return which might making the model ideally good enough to achieve the study objective. However, it remains unexplained how the market assesses the beta of the security – it is clearly conditioned by the information that is available in the market. Accounting information or the fundamental analysis of accounting information represented in this study by the IAS applied to JIC remains the major source of information for investors. If this information changes then we expect investors to revise their views about the future share prices and hence returns of the securities. If the information change is sufficient to induce a behavioural change on the part of investors then we can expect to see the effect in beta and as a consequence in the cost of equity capital. A confounding event that may occur as a result of the implementation, however, is possible changes in capital structure. If JIC



were to borrow more as a result of improved disclosure, this will impact upon the equity beta. What it will do is increase equity betas at a time we hypothesise that equity betas may fall as a direct result of improved disclosure. The consequence of this is that we should control for the capital structure (financial risk) change, an issue will be explored in separate section.

The CAPM shows that it is only a security's systematic risk, which is of interest to a well-diversified shareholder. The value of  $\beta_j$  (beta) is, therefore, of key importance to the investor. Higher the systematic risk of a security, the higher the return required by the investor. The major conclusion of the CAPM is that the price of security  $j$  will adjust so that its expected return  $E(r_j)$  is given by:

$$E(r_j) = r_f + (E(r_m) - r_f) \beta_j$$

where  $r_f$  is the risk-free rate of interest obtained from the Central Bank of Jordan which supplied the prices of the '*Three Month Treasury Bill*' from which the yearly average returns on the treasury bill could be computed (this return is assumed to proxy for the risk free rate of return) where  $r_m$  is the logarithm weekly return for the '*FTSE All World Index*' from which the yearly average return could be computed for the same period. The expected depends linearly on the systematic risk ( $\beta_j$ ). When  $\beta_j = 0$ , the expected return is the risk-free rate. When  $\beta_j = 1$ , the expected return is the same as that for the market. The relationship between  $E(r_j)$  and  $\beta_j$  is known as the Security Market Line (SML). The beta of a security is the standardised covariance of a security's return with the market return on the market portfolio divided by the market return variance. Therefore:

$$\text{Beta of security } i = \text{Cov}(r_i, r_m) / \sigma^2(r_m)$$

For the purpose of this study, the systematic risk estimated by beta will be estimated using the *Market Model* based on the logarithm weekly stocks' and markets' returns,

a model has been adopted by previous empirical studies (Botosan 1997; Firth 1984; Kane et al. 1984; Opong 1996; Opong 1993; Scholes and Williams 1977). Estimating beta by using the *Market Model* been argued also by many researchers (Barry and Brown 1985; Brealey and Myers 2000; Coles and Loewenstein 1988; Diamond and Verrecchia 1991; Handa and Linn 1993; Klein and Bawa 1976; Ruback 1982; Zivot 2000).

The weekly return has been used, however, since it is believed that the more observations given, the more powerful the tests will be and the more accurate the results will be. Therefore, the logarithm weekly return on a specific stock after taking into account the declared dividends can be defined as follows:

$$R_t = \ln (P_t + d_t) - \ln (P_{t-1}) = \ln [(P_t + d_t) / P_{t-1}]$$

Where  $R_t$  is the stock rate of return in week  $t$ ,  $P_t$  is the last traded price in week  $t$ ,  $d_t$  is the dividend declared “ $x_d$ ” in week  $t$ <sup>16</sup> and  $P_{t-1}$  is the last traded price in week  $t-1$ . It has to be mentioned, however, when the ASE was closed for a bank holiday on last day of the week, the observation for the day after used as the closing price for that week. Table 5.6 shows Jordanian national holidays considered before calculating the share price and market returns for JIC included in this study.

**Table 5.6: Jordanian National Holidays**

Fixed Public Holidays	
1 January	New Year's Day
1 May	Labour Day
25 May	Independence Day
10 June	Army Day
11 August	Accession of HM King Hussein
14 November	Birthday of HM King Hussein

<sup>16</sup> It has to be mentioned that for most observations there were no dividends and  $R_t = \ln(P_t/P_{t-1})$ .



Table 5.6: Jordanian National Holidays

25 December	Christmas (Christians only)
31 December	New Year's Eve
Movable Public Holidays	
Islamic New Year	1 day 25 March 2000
Prophet's Birthday	1 day 3 Jun 2000
Lailat Al Miraj	1 day 14 October 2000
Eid Al Fitr	3 days 13 December 2000
Eid Al Adha	3 days 3 March 2000
Weekend	
Friday, Saturday	

Source: ASE Yearly Publications.

On the other hand, the logarithm weekly return on the market can be defined as follows:

$$R_m = \text{Ln} (P_t) - \text{Ln} (P_{t-1}) = \text{Ln} (P_t / P_{t-1})$$

Where  $R_m$  is the logarithm weekly market rate of return in week  $t$ ,  $P_t$  is the price in week  $t$ , and  $P_{t-1}$  is the price in week  $t-1$ .

The Market Model is a statistical model, which relates the return of any given security to the return of the market portfolio. The model's linear specification follows from the assumed joint normality of asset returns. For any security  $i$  we have:

$$R_{ij} = \alpha_{ij} + \beta_j r_{mt} + \varepsilon_{ij}$$

We assumed the  $\varepsilon_{ij}$  were uncorrelated random error terms with mean zero and constant variance  $\sigma^2$  (homoskedasticity and not hetroskedasticity)<sup>17</sup>. That is,

<sup>17</sup> For more details see (Hill et al. 2001, PP. 235-237).

$$E(\varepsilon_{ij}) = 0, \text{ Var}(\varepsilon_{ij}) = \sigma^2, \text{ Cov}(\varepsilon_i, \varepsilon_j) = 0$$

Where  $r_{ij}$  and  $r_{mt}$  are the period- $t$  returns on security  $i$  and the market portfolio, respectively, and  $\varepsilon_{ij}$  is the zero mean disturbance term, constant variance and not correlated with itself or with the market return.  $\alpha_{ij}$  and  $\beta_j$ , and  $\varepsilon_{ij}$  are the parameters of the market model. In application, FTSE All World Index is used for the market.<sup>18</sup> The FTSE All World Index was used since running the market model for each company for each year requires a market index or equivalently the index of the market portfolio that is assumed to be held by investors. If the market portfolio was the portfolio of Jordanian equities then the market beta is by definition equal to one regardless of any disclosure aspects. The portfolio would have to be much wider than this if we wish to attempt to identify any influence of IAS on the equity betas of Jordanian companies. The portfolio that has been chosen here is the US dollar denominated FTSE All World Index. So the hypothesis being tested is whether the change in disclosure to IAS impacted upon the betas of Jordanian companies as assessed within a world index. Of course in using a world index measured in US dollars there is the possibility of foreign exchange risk being captured within the beta estimate. However in this case the Jordanian Diner is tied directly to the US dollar so preventing this effect influencing the results. Moreover, if the ASE general index will be used, testing for the impact of adopting the IAS on systematic risk, unsystematic risk, risk premium, and on cost of equity capital wont be recognised since this effect, if it existed, will influence both: individual companies listed on ASE and ASE General Index itself, a reason required to employ an external reference point represented by the FTSE All World Index presented in American Dollars '\$'. The use of FTSE All World Index will be employed for estimating beta, residuals variance, and the expected returns. For estimating the risk premium, however, ASE general index will be employed since the

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<sup>18</sup> The FTSE All World Index aims to capture up to 90% of the investable equity market capitalization available in 49 countries classified into three groups: developed, advanced emerging and emerging segments. The study used the FTSE All World Index presented in U.S Dollars from the DataStream database ([www.fcaset.com](http://www.fcaset.com)).



study concern about whether such premium is falling over the years after the adoption of IAS in Jordan.

It has to be noted, however, that there is a problem reported by previous empirical studies that are caused by asynchronous prices in the calculation of returns. The importance of this problem becomes amplified with a shorter differencing intervals and infrequently traded securities which causing biased beta estimates (Fisher 1966; Opong 1996; Scholes and Williams 1977). Such a situation severely existed in ASE where some of the JIC selected in this study were thinly traded over the total period 1996-2000 'see Appendix 5'. The procedures for overcoming the problem of non-synchronous trading employed in this study to obtain unbiased *Market Model* estimators ( $\alpha$ ,  $\beta$ , and  $\epsilon$ ) is that a selected JIC were eliminated for a year considered in this study from the sample when its share price stayed fixed or its logarithm weekly returns movements lower than  $\pm 0.05$  over that year. Such procedures eliminated 24, 29, 22, 25, and 22 JIC and leaving 26, 21, 28, 25, and 28 JIC for the years 1996, 1997, 1998, 1999, and 2000, respectively, to be investigated. Since not all selected JIC will be included because of the thin trading problem and the shorter differencing intervals, it is decided to classify all JIC concerned into three groups, namely: actively traded companies those which their shares traded actively over the total period 1996-2000, less actively traded companies those which their share traded actively over some of the period 1996-2000, and the lowest actively traded companies those which their shares not traded actively over the total period 1996-2000 'see Appendix 6'. To be able to generalise the research results, however, the difference in means between the JIC average extent of disclosure actively traded group and JIC average extent of disclosure lowest actively traded group will be employed using Paired-Samples t-test. That is to see whether their means difference is significantly different or not since testing for the financial consequences of extent of disclosure in compliance with IAS on JIC actively traded group and JIC less actively traded groups could be generalised for the all 50 JIC selected in this study including those not actively traded over the total period 1996-2000 if the difference in means between the two groups not significant.

It is expected that after the mandatory action, the extent of disclosure in compliance with the IAS will increase which means reducing the systematic risk, unsystematic risk, risk premium, cost of equity capital for a security.<sup>19</sup> Therefore, the null hypotheses to be tested as follows

*“H03: There are no changes in the systematic risk regarding the adoption of the IAS for JIC listed on ASE and their shares traded over the period 1996-2000”.*

*“H04: There are no changes in the unsystematic risk regarding the adoption of the IAS for JIC listed on ASE and their shares traded over the period 1996-2000”.*

*“H05: There are no changes in the risk premium regarding the adoption of the IAS for JIC listed on ASE and their shares traded over the period 1996-2000”.*

*“H06: There are no changes in the cost of equity capital regarding the adoption of the IAS for JIC listed on ASE and their shares traded over the period 1996-2000”.*

To be able to test the above hypotheses, JIC’ beta, residuals variance, risk premium, and expected return over the five years (1996-2000) were estimated by employing the *Market Model* and the *CAPM*.

#### **5.4.1.1 Data Analysis and Testing the Hypothesis**

For testing the hypothesis concerning the impact of extent of disclosure in compliance with IAS on systematic risk estimated by beta, beta for each individual JIC included will be calculated to test whether the change in JIC beta over the period 1996-2000 was significant. It has to be noted, however, as long as we have a beta for each year, it

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<sup>19</sup> It should be noted that the IAS adoption might have reduced the systematic risk, unsystematic risk, risk premium, or cost of equity capital, or might the influence be mixed from two or more than one of these financial consequences components. Moreover, previous empirical and theoretical studies argued that there are other factors that could also influence such financial consequences such as macroeconomic factors (Chen et al. 1986; Fama and French 1989; Poon and Taylor 1991).



does not matter if beta for a given JIC not there for other years since the test for average JIC betas and not for individual JIC betas which means that JIC will be used for this test are both; those actively traded and less actively traded groups.

For testing the significance of the change in beta over the period 1996-2000, number of statistical tests can be used. By taking into account the statistical test employed in exploring the changes for the extent of disclosure over the period under consideration and the nature of the data used in this study, it was decided to conduct “two related samples tests” to test the hypothesis set out in section 5.4.1. More specifically, the paired-samples t-test was carried out to test the above hypothesis. A Wilcoxon test (the non-parametric alternative to the paired-samples t-test) was also run in testing the same hypothesis to check the results of parametric tests ‘see section 5.2.2’. For testing the significance different in beta means between pair of years over the period 1996-2000, moreover, Univariate Analysis of Variance has been employed by using General Linear Model (GLM). If the test shows that the difference in means is significant in general among years, Tukey HSD procedures will be employed for finding out among which pair of years, the difference in means was significant.<sup>20</sup>

In addition, since the impact of adopting IAS could influence the unsystematic risk estimated by residuals variance<sup>21</sup>, the study extends its investigation by testing whether the ratio from dividing a company residuals variance for the period  $t-1$  by the residuals variance for the period  $t$  is significantly different from one. The null hypothesis, therefore, is the hypothesis that the variance is constant (i.e.  $H_0: \sigma^2_{e_{t-1}} = \sigma^2_{e_t}$ ). In such a test, it does matter if residuals variance for a given JIC is there for each year considered (1996-2000) which means JIC will be used for this test are only those actively traded group. Therefore, the following equation is developed

$$\sigma^2_{e_{t-1}} / \sigma^2_{e_t} = 1, t = 1996, 1997, 1998, 1999, \text{ and } 2000$$

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<sup>20</sup> It has to be noted that running ANOVA test gives the same result since both tests concerning the analysis of variance among groups.

Where  $\sigma^2$  the variance,  $e_{t-1}$  JIC average residuals for the last year, and  $e_t$  JIC average residuals for the following year. As it is known, however,  $\sigma^2$  cannot be observed, and its value, therefore, were estimated by  $S^2$  changing the equation into the following

$$S^2 e_{t-1} / S^2 e_t = 1$$

The '*calculated value*', therefore, will be compared with the '*critical value*' using *F test* under  $N_1-1 = 1$  numerator degrees of freedom since there are two residual variance observations ( $t, t-1$ ) and  $N_2-1 = 51$  denominator degrees of freedom since there will be 52 logarithm weekly returns observations in each year for estimating the residuals variance. The critical or schedule value 4.00 (Gujarati 1995; Maddala 2001), therefore, will be compared with the actual value and if the actual value is higher than 4.00, that means the residuals variances for the period  $t$  and the period  $t-1$  is significantly different from one. Such a result means that there is a significant impact for the extent of disclosure in compliance with IAS on unsystematic risk.

Since it is argued that better disclosure means investors are more confident about the financial market, the equity risk premium (or market premium) will be reduced. Therefore, the study extended its investigation to test whether the adoption of IAS has reduced the average yearly ASE risk premium. Risk premium, therefore, will be estimated by deducting the average yearly risk free rate on Treasury Bills provided by Jordanian Central Bank from the average yearly ASE market return for the same year covering the period 1996, 1997, 1998, 1999, and 2000 since the changes for the premium over the period 1996-2000 could be influenced by the extent of disclosure in compliance with IAS.

As far as the cost of equity capital is concern, estimated by the expected return, however, clearly interpreting whether the cost of equity capital has changed, we have

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<sup>21</sup> The actual residuals were obtained from running the *Market Model*.



to control for those factors that may influence it, namely: business risk and financial risk (Belkaoui and Kahl 1978; Botosan 1997; Michael et al. 2001). Therefore, the following section will discuss those factors in details.

#### **5.4.1.2 Financial Risk and Business Risk**

It has been decided that business risk and financial risk are the major factors which should be controlled in exploring the issue whether there is an association between the cost of equity capital and the extent of disclosure (Botosan 1997; Michael et al. 2001).

Business risk is the variability of the firm's operating income that is the income before interest. This is can be found by examining the dispersion of returns for the all equity capital structure. This dispersion is caused purely by business related factors, such as the characteristics of the industry and the competitive advantage possessed by the firm within the industry. This risk will be influenced by factors such as the variability of sales volumes or prices over the business cycle, the variability of input costs, the degree of market power and the level of growth. Business risk is determined by general business and economic conditions (Botosan 1997; Michael et al. 2001). On the other hand, financial risk is the additional variability in returns to shareholders that arises because the financial structure contains debt. The increasing proportion of debt raises the firm's fixed financial costs. At high gearing levels there is an increased probability of the firm not only failing to make a return to shareholders, but also failing to meet the interest cost obligation, and thus raising the likelihood of insolvency (Arnold 1998, P.787).

Brealey and Myers (2000) argued that the cost of capital is a hurdle rate for capital budgeting decisions. It depends on the business risk of the firm's investments. The risk of a common stock reflects the business risk of the real assets held by the firm. But shareholders also bear financial risk to the extent that the firm issues debt to finance its real investments. The more a firm relies on debt financing, the riskier its

common stock is. Borrowing is said to create financial leverage or gearing. Financial leverage does not affect the risk or the expected return on the firm's assets, but it does push up the risk of the common stock and lead the stockholders to demand a correspondingly higher return.

Hamada (1972) originally showed that there is a linear relationship between a firm's beta and the leverage of the firm (the amount of debt in its capital structure). He discussed this relationship between the beta of the common stock and leverage of the firm in a world with and without taxes. His conclusion is that leverage increases the risk of equity in both cases. However, he added, it can be shown that leverage increases the equity beta less rapidly under corporate taxes. This occurs because, under taxes, the government shares in the risks of the firm through its claim on taxes.

Therefore, the study's second concern regarding the financial market in measuring how the cost of equity capital has responded to the move to IAS is taking into account the other factors; financial risk and business risk which should be controlled.

The following will discuss the factors considered to influence the risk premium and its association with the extent of disclosure.

### **Leverage**

Clearly it has to be distinguished between operating leverage and financial leverage. Operating leverage refers to the extent to which the firm's total costs are fixed. The profits of firms with a high operating leverage, such as car or steel manufacturers, are very sensitive to change in the sale level. Financial leverage is the focus of this study, which will be called leverage, and concerns the proportion of debt in the capital structure. Net income to shareholders in firms with high financial leverage is more sensitive to change in operating profits (Damodaran 1997, P.313); (Arnold 1998, P.777).

Financial risk can be estimated straightforwardly by using the leverage (D/E). In the



theoretical models, the debt to equity ratio is simply a parameter that will influence systematic risk estimated by beta (Hamad and Scholes 1985; Strong and Appleyard 1992). Strong and Appleyard (1992, P.11) argued that the estimated beta of the firm will reflect not only the operating risk (business risk) of the firm's cash flow but also the financial risk of the particular capital structure.

In practice, however, deciding the leverage is more difficult. For example, companies are financed out of a mixture of share capital, retained profits and borrowings. Borrowings may be long term such as debentures, or short term such as bank borrowing. In addition, the company may have set aside all sorts of provisions (e.g. for taxation) which it expects to meet sometimes in the future. These may also be regarded as borrowings. From an ordinary shareholder's point view, even preference share capital can be classed as borrowings, because the preference shareholders will have priority over ordinary shareholders, both in respect of dividends and upon liquidation (Arnold 1998).

If a company finances itself from a high level of borrowings, there is obviously a higher risk, could be called financial risk, in investing in it. This arises for two main reasons: 1) the higher the borrowings, the more interest that the company will have to pay, and that may affect the company's ability to pay ordinary dividend; 2) if the company cannot find the cash to repay its borrowing, the ordinary shareholders may not get any money back if the company goes into liquidation.

There are several ways of calculating leverage, the most common being as stated by Arnold (1998, PP.778-779) as the following:

1. Long-term debt / Shareholders' Funds.
2. Long-term debt / Long-term Debt + Shareholders Funds.
3. All Borrowing / All borrowing + Shareholders' Funds.
4. Long-term Debt / Total Market Capitalisation.

However, theory suggests that using the market value of the variable debt and equity

is preferable assuming that it could be observed (Raghuram and Zingales 1995). But, in reality the debt variable is not observable because it is not actively traded. Therefore, the book value for the debt, which will be close to market value if it is short-dated, will be employed using the following formula:

$$D/E = \text{Book Value of All Borrowing} / (\text{Total market Capitalisation} + \text{Book Value of All Borrowing})$$

All borrowing has been included because there is an issue of whether short-term debt is a revolving facility (constantly being renewed). Moreover, for calculating the total market capitalisation: a) the average market share price for each company for each year has been used (Holmes and Sugden 1999, P.221) taking into account any changes for the number of ordinary shares in issue over the period 1995-2000, and b) preference shares excluded because it is not an issue for JIC.

Previous studies have found that there is no specific level for leverage can be employed for all countries. Rutherford (1988) summarised previous studies and presented evidence from the Organisation for Economic Cooperation and Development (OECD) data suggesting that firms in France, Germany and Japan are more highly levered than firms in the United States and the United Kingdom. Borio (1990) has found that companies in Japan and Continental Europe are more highly levered than companies in the Anglo-American economies. A few years later, Raghuram and Zingales (1995) have found that firm leverage is fairly similar across the G-7 countries.

Many studies have been investigated the correlation between leverage and some factors. According to Milton and Raviv (1991), the consensus is that leverage increases with fixed assets, non-debt tax shields, investment opportunities, and firm size and decreases with volatility, advertising expenditure, the probability of bankruptcy, profitability and uniqueness of the product. Tangibility of assets, the market-to-book ratio (usually thought of as a proxy for investment opportunities),



firm size, and profitability have shown up most consistently as being correlated with leverage in previous studies (Long and Malitz 1985; Myers 1977; Myers and Majluf 1984). However, this study will investigate the association between leverage as a proxy for financial risk and the cost of equity capital, which might have not been considered in the context of disclosure by previous studies to the best knowledge of the researcher. The leverage ratio as a proxy for the financial risk of the firm has been adopted by previous empirical studies (Patton and Zelenka 1997).

It could be argued at this point that a positive association between cost of equity capital and leverage might be expected. The lower the cost of equity capital, the lower the leverage will be. This is because where the company has a lower cost of equity capital that means different sources of finance are available and as a consequence the company is not suffering from financial distress.

As it is mentioned before, financial risk estimated by leverage will be used as a control variable. For running the regression, leverage will be used as a continuous variable (the actual leverage ratios) assuming that there is a positive association between leverage and the cost of equity capital.

### **Company Size**

Company size has been employed by previous researchers for studying its association with factors such as leverage (Long and Malitz 1985; Milton and Raviv 1991). Damodaran (1997) used company size as a proxy for business risk where the association between company size and the cost of equity capital have been investigated before by different empirical studies (Botosan 1997; Michael et al. 2001). For this study, however, the association between company size as a proxy for business risk and the cost of equity capital will be explored since it could be argued that larger firms more likely to be diversified, have lower business risk and hence have a lower cost of equity capital.

It could be argued that net sales revenue is a proxy could be used since large size

firms will have less business risk as a result of diversified portfolio effects as well as contractual stability. Therefore, logarithm net sales revenue as a proxy for business risk will be employed in this study.

As it is mentioned before, company size as a proxy for business risk will be used as a control variable. For running the regression, company size will be used as a continuous variable estimated by logarithm net sales revenue assuming that there is a negative association between company size and the cost of equity capital.

#### **5.4.1.3 Data Analysis and Testing the Hypothesis**

To determine whether there is an association between the dependent variable (cost of equity capital) and the independent variable (extent of disclosure) after controlling for the variables financial risk and business risk, the multiple regression will be run for each year under consideration (1996-2000) to test the following hypothesis:

*“H07: There is no association between the cost of equity capital and the extent of disclosure, the financial risk, and the business risk for JIC listed on ASE and their shares traded during the total period 1996-2000”.*

The cost of equity capital was the dependent variable and the independent variables were business risk estimated by logarithm net sales revenue as a proxy for company size, financial risk estimated by leverage and company extent of disclosure in compliance with IAS.

One of the problems of undertaking any multiple analyses is that there may be multicollinearity between independent variables ‘see section 5.3.1.6’. Therefore, multicollinearity checked not only by testing for Pearson Correlation Coefficients as it has been adopted by previous empirical studies (Farrar and Glauber 1967; Judge et al. 1985; Malone et al. 1993; Street and Bryant 2000; Wallace and Naser 1995; Wallace



et al. 1994),<sup>22</sup> but also by running the stepwise regression technique (Malone et al. 1993; Neter and Kutner 1989). Moreover, a commonly used statistic for testing the existence of autocorrelation among residuals is the Durban-Watson (DW) statistic, which will be employed (Maddala 2001, P.228; PP.242-245).

The regression equation used is as follows:

$$Y_{(1-5)} = \alpha_0 + \beta_1 D_1 + \beta_2 D_2 + \beta_3 D_3 + \epsilon$$

Where:

$Y_{(1-5)}$  = Cost of equity capital ( $Y_1$  for 1996,  $Y_2$  for 1997,  $Y_3$  for 1998,  $Y_4$  for 1999,  $Y_5$  for 2000)

$D_1$  = Company Size (net sales revenue)

$D_2$  = Leverage (D/E)

$D_3$  = Extent of disclosure

$\epsilon$  = Error terms (disturbance)

$\alpha_0$  = Intercept (constant)

$\beta_i$  = Coefficients of the explanatory variables

The disturbance term represents two sets of factors. First, it represents the effect on the dependent variable (cost of equity capital) of all variables other than the ones included in the study. Second, even if the variable included were the only identifiable variable influencing the dependent variable, it should not be expected that the same level of dependent variable will stay year after year.  $\epsilon$ , therefore, is included to allow for the basic random unpredictability of human behaviour (Thomas 1997, P.78).

It is known that  $\epsilon$  (error terms or disturbance) are not observable and the true values

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<sup>22</sup> When we test for the multicollinearity, we look at the correlation coefficients, which should not be considered harmful until it exceeds 0.80 as it is argued by (Farrar and Glauber 1967; Judge et al. 1985) while (Street and Bryant 2000) argued that it should not exceed 0.90. (Wallace et al. 1994), however, considered coefficient of correlation exceeding 0.77 high enough to cause multicollinearity concern.

for  $\alpha$  and  $\beta$  (population parameters) are not known as well. Therefore, from running the multiple regression by using Ordinary Least Square (OLS), the population parameters estimated by estimators and the residuals which is treated as estimates of the unknown disturbances will be achieved. This means that the previous equation will be modified to what is called simple regression equation.

An important point to note is that, in order to undertake OLS multiple linear regression, the data must fulfil certain conditions, i.e. normality, homogeneity (equal variance), uncorrelated and linearity 'see section 5.3.1.6'.

#### **5.4.2 Share Price Volatility**

Following the third objective of this study which is that the consequences of IAS as far as the financial market is concerned in developing countries by exploring, overall, whether it can be seen any reduction for JIC share price volatility included in this study. Such an assumption comes to mind since it may be argued that in a situation where there is high market uncertainty about a firm's future, as reflected in the volatility in stock returns, increasing the extent of disclosure could reduce this volatility.

One likely implication of the quality of disclosure in corporate annual reports is the degree of price dispersion in the securities market. The more superior the quality of corporate disclosure of information, the lesser the scope for speculation, and the narrower will be the price fluctuations. When companies give adequate information, speculative activities are minimised and public confidence is developed in the securities market. Moreover, since prices of corporate securities are based on the estimated earnings and the earnings are estimated on the basis of the information available about corporate operations, the price fluctuations are likely to be less wide with the better disclosure of information (Amihud and Mendelson 1986; Bloomfield and Wilks 2000; Diamond and Verrecchia 1991; Knauss 1964; Sengupta 1998; Singhvi 1968; Singhvi and Desai 1971; Stigler 1961). More specifically, Singhvi and



Desai (1971) reasoned that:

*“With full disclosure of information, one would expect less drastic shifts in estimates of expected profitability of a given issue, a greater scope for scientific investment analysis, a diminished reliance on and use of rumours, a reduction in the scale of manipulation practices, and a narrower dispersion between the intrinsic value and market price of a security”.*

Share price volatility has been used by prior studies as a proxy for information asymmetry (Lang and Lundholm 1993; Leuz and Verrecchia 2000). To the extent that smooth transactions in share prices suggest the absence of information asymmetries between the firm and shareholders, or among investors, low levels of volatility suggest fewer information asymmetries.

It is argued, on the other hand, that volatility is influenced by many factors unrelated to information asymmetry and testing the effect of an international reporting strategy on volatility can be ambiguous – in particular for infrequently traded stocks (Leuz and Verrecchia 2000). Bushee and Noe (2000) demonstrated that the effect of disclosure on volatility is complex and may depend on the type of investors attracted to the firm. On the other hand, it could be argued that it is not necessary complying with the IAS will reduce the share price volatility as the company will enter new markets which contain extra risk beside the risk she is experiencing in its own market. But, it can be said that this is not a significant issue in Jordan where most companies are working within the national level. According to the efficient financial market theory, however, share price reflects all information available and hence implementing the IAS is just part of this information. In other words, share price many factors could affect share prices in the financial market such as not only microeconomic but also macroeconomic factors. For these reasons, as a measure of information asymmetry, volatility is likely to be the least reliable proxy among the others in exploring the financial consequences of adopting the IAS in Jordan.

Statistical or historical volatility is a measure of the movement in the underlying asset over a period of time. The measure is sometimes called historical volatility since it

takes into account movement in past prices. The most usual method, however, for calculating the historic volatility is the standard deviation of the share price returns – this procedure is fairly standard and can be found in most text books and applied by several previous empirical studies (Botosan 1997; Lang and Lundholm 1993; Leuz and Verrecchia 2000; Sengupta 1998). Krueger (2000, P.62) argued that volatility is many things; it is the relative rate at which the price of understanding security moves up or down, it measures the spread between the high and low of a contract. It is calculated by figuring the annualised standard deviation of daily changes in price. He added, while each of these measures calculates volatility a different way, they all are highly correlated – that is, when one records a high level of volatility, the others tend to do as well. Of these measures, the standard deviation provides a statistical indicator of volatility. A high standard deviation occurs when there are relatively large price changes and a low standard deviation occurs when prices are more stable. The Monetary Department in the Bank of Israel (199) reported that the average share price volatility in the financial market for advanced economies is 20 percent, whereas it is 54 percent in the emerging economies. They added that the lower the degree of volatility, the more efficient and important the stock market will become as an instrument through which private corporations will raise capital.

It could be argued that since the new Securities Law No.23 of 1997 forced Jordanian companies listed on the market to implement the IAS starting from the year 1998 in preparing and presenting their annual reports, the volatility for Jordanian companies share prices listed on ASE could be reduced. This might happen because of the fact that the more information disclosed by companies in their annual reports, the more confident investors are and as a consequence the less volatile the share prices will be. Therefore, the hypothesis that set out to assess the impact of the IAS on JIC share price volatility is:

*“H08: There is no change in the share price returns volatility regarding the compliance with the IAS in the annual reports of JIC listed on ASE and their shares traded over the period 1996-2000”.*



To be able to test the above hypothesis, the weekly JIC share price returns over the five years (1996-2000) were prepared using the data provided by ASE and share prices volatility changes over the period 1996-2000 estimated by standard deviation will be tested.

#### **5.4.2.1 Data Analysis and Testing the Hypothesis**

For testing the significance of the change in share price volatility returns over the period 1995-2000, number of statistical tests can be used. By taking into the nature of the data used in this study,<sup>23</sup> it was decided to conduct “two related samples tests” to test the hypothesis set out in section 5.4.2.

As it is mentioned in section 5.2.2, there are two types of two-related-sample tests: parametric (e.g. the Paired-samples t-test) and non-parametric (e.g. the Wilcoxon matched-pairs signed-ranks test and Sign test). To be able to determine whether the t-test can be used to test the hypothesis set out in section 5.4.2, normality tests of skewness and kurtosis and K-S Lilliefors were undertaken. The results of normality tests indicated that data (logarithm weekly share price returns volatility estimated by the standard deviation) for the period covered in this study appear to be normally distributed. Therefore, the paired-samples t-test was carried out to test the above hypothesis. A Wilcoxon test (the non-parametric alternative to the paired-samples t-test) was also run in testing the same hypothesis to check the results of parametric tests.

For testing the significance different in means between pair of years over the period 1995-2000, Univariate Analysis of Variance has been employed by using ANOVA and General Linear Model (GLM). If the test shows that the difference in means is significant in general among years, Tukey HSD procedures will be employed for

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<sup>23</sup> Data used for testing the hypothesis set out in the previous section are two observations from the same sample (i.e. two scores obtained from the same sample) and the suggested statistical test for such data is the two-related-samples statistical test (Siegel 1956).

finding out among which pair of years the difference in means was significant.

## **5.5 Summary**

This chapter provides details of the research methodology employed and the hypotheses developed in this study for achieving its objectives. The first objective needs to be achieved is that to test whether JIC listed on ASE and their shares traded during the period under consideration implement fully the IAS which has been estimated through disclosure indexes covering the period under consideration (1995-2000). The second objective is that where it has been found that JIC do not comply fully the IAS the research explains the compliance level differences among those companies by looking at company-specific factors that have been chosen. Moreover, the third objective, which might have not had that much attention, is the financial consequences of IAS as far as the financial market is concern in developing countries. Therefore, for exploring this issue, the following aspects will be investigated: 1) to what extent IAS adoption has reduced the systematic risk estimated by beta, unsystematic risk estimated by variance residuals, risk premium estimated by the difference between risk free rate and market return, and cost of equity capital estimated by the expected return? It is conceivable, however, that the cost of equity capital has been influenced by other changes taking place over the period other than the change in the extent of disclosure in compliance with IAS. In particular, the firms may have been changing their business risk or their financial risk and this need to be controlled for in assessing the impact of the change in disclosure on the cost of equity capital, 2) Overall, can it be seen any reduction in JIC share price volatility estimated by standard deviation?



## CHAPTER SIX

### EXTENT OF DISCLOSURE IN COMPLIANCE WITH IAS AND THE IMPACT OF COMPANY-SPECIFIC FACTORS

#### 6.1 Introduction

This chapter is presenting the results regarding the research hypothesis needs to be tested for achieving the study objectives. As introduced in Chapter 1, the first objective needs to be achieved is that to test whether Jordanian Industrial Companies (JIC) listed on Amman Stock Exchange (ASE) and their shares traded during the period 1995-2000 implement fully the IAS. That is not only by measuring the extent of disclosure through a disclosure index contains the IAS requirements during the period 1995-2000 but also by testing whether the change in the disclosure level, if it is founded, over the period were significant. More specifically, testing whether the change in the extent of disclosure in compliance with IAS after the enforcement of implying the IAS in September 1998 by the ASE for Jordanian companies listed on the financial market were significant compared with the period pre the IAS adoption. The second objective is that if those JIC do not comply fully the IAS the research will attempt to explain the compliance level differences, if it is found, among those companies by looking at company-specific factors that have been chosen. Therefore, the following sections will present the results, which help for testing those hypotheses and achieving the study first and second objectives.

#### 6.2 The Change in the Extent of Disclosure in Compliance with the IAS

The primary concern of this study is to assess the extent of disclosure in compliance with the IAS in Jordan. This section presents the results of examinations carried out to seek answers to the following question (originally set out in Chapter 1) to explore the extent of disclosure in compliance with the IAS:

*To what extent JIC listed on Amman Stock Exchange and their shares traded during the period under consideration complied with the mandatory requirement of adopting the IAS?*

In this study, a total of 50 JIC annual reports over the six years (1995, 1996, 1997, 1998, 1999, and 2000) were analysed. Each company's extent of disclosure in compliance with the IAS for each year was estimated by indexes 'see Appendix 1'. That was based on 137 items of information required to be disclosed by the IAS for the years 1995-1997, 186 items for the year 1998, 221 items for the year 1999, and 219 items for the year 2000. The extent of disclosure scores for each company in the sample and each year covered in this study are shown in Appendix 3. Table 6.1 shows the descriptive statistics of the extent of disclosure.

**Table 6.1: Descriptive statistics of the extent of disclosure over the six years**

	1995	1996	1997	1998	1999	2000
<b>Mean</b>	0.4521	0.4580	0.4703	0.5096	0.5409	0.5599
<b>Maximum</b>	0.6441	0.6441	0.6780	0.7462	0.8965	0.9138
<b>Minimum</b>	0.2712	0.2692	0.2878	0.3278	0.3333	0.1607
<b>Range</b>	0.3729	0.3749	0.3902	0.4184	0.5632	0.7531
<b>Standard Deviation</b>	0.0822	0.0838	0.0800	0.0958	0.1084	0.1344
<b>Standardised Kurt.</b>	-1.91	-0.206	0.043	-0.336	1.485	1.529
<b>Standardised Skew.</b>	0.017	-0.181	0.202	0.177	0.773	0.030
<b>K-S (Lilliefors)</b>	0.064	0.069	0.064	0.084	0.077	0.075

The table above shows that none of the companies in the sample fully complied the IAS requirements which is a fact has been confirmed by the International Accounting Standards Board Secretariat in published annual reports for fiscal years ending 2000 excluding any of Jordanian companies as fully adopted the IAS (IASB, Annual Report, 2000).

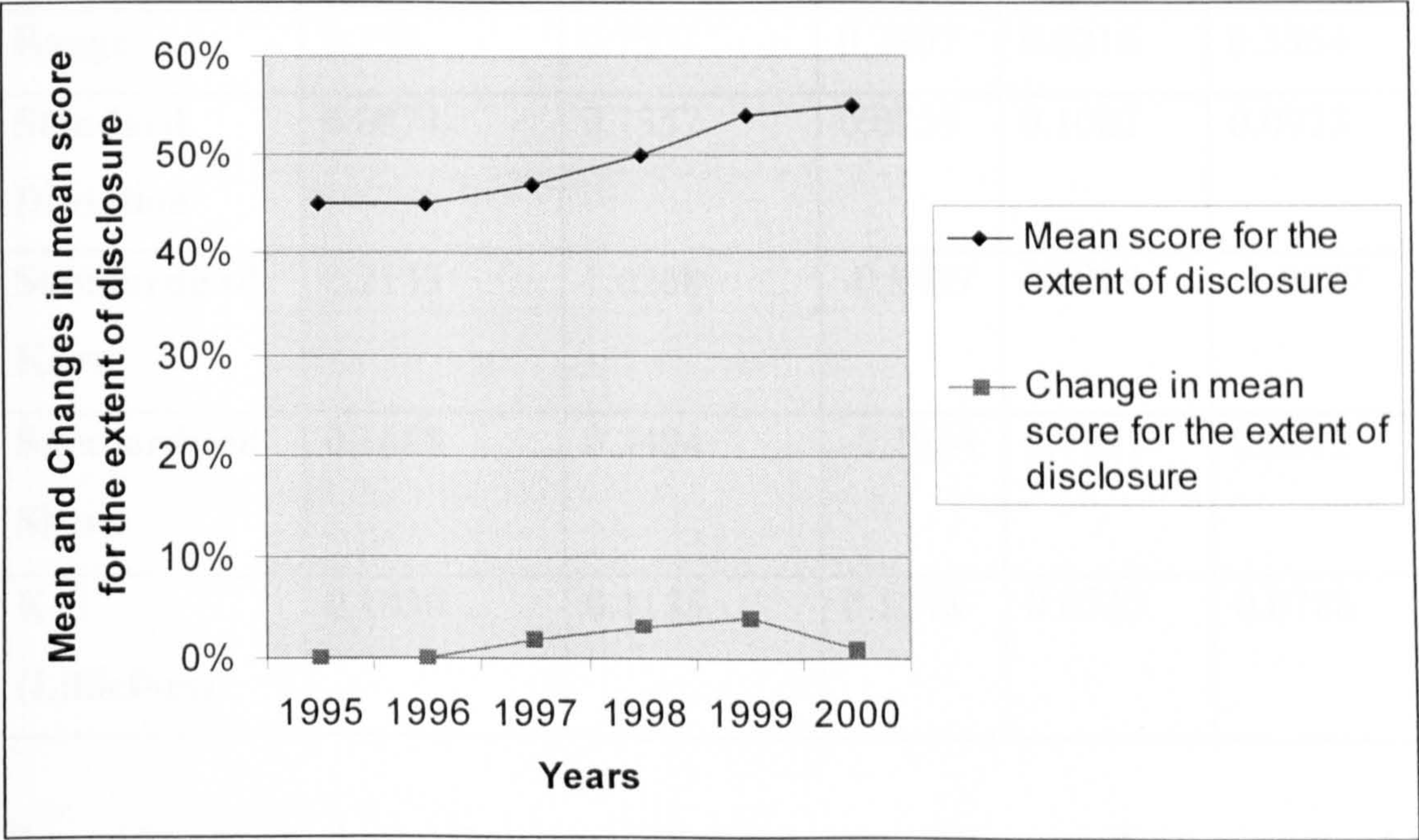
The extent of disclosure scores of Jordanian companies, as it can be seen from Table 6.1, varied within the range of 16% to 91% over the period 1995-2000. The proportion of the companies whose the extent of disclosure scores were more than



50% was 34%, 32%, 34%, 56%, 68%, and 72% in 1995, 1996, 1997, 1998, 1999, and 2000, respectively, and the rest of the companies' scores were within the range of 16% to 50% over the period 1995-2000. In addition, the mean score of the extent of disclosure is just over 45% in 1995 and 1996; 47% in 1997; 51% in 1998; 54% in 1999; and 56% in the most recent year (2000).

As indicated by the above analysis and as can be seen from Figure 6.1 which was developed on the basis of the mean score and changes in the mean score of the extent of disclosure that JIC included in the study were not fully implementing the IAS. In the same time there were a drift up (steady increase) in the level of disclosure over the years considered.

**Figure 6.1: The extent and changes in the extent of disclosure in compliance with IAS (Average across all JIC)**



In brief, the above analysis indicates that the sampled JIC extent of disclosure in compliance with the IAS increased over the period 1995-2000 where the change in means was positive for the total period. Moreover, although there were a drift up in the level of disclosure over the period 1995-2000 as it can be seen from Table 6.1, the degree of the increase for the period post the mandatory action (1998-2000) of the IAS were higher than 50% comparing with the period pre the mandatory action (1995-1997). This might gives an indication that the mandatory



action played a vital role in increasing the level of disclosure regarding the IAS.

For Jordanian Industrial Sectors, however, Table 6.2 shows the descriptive statistics of the extent of disclosure.

**Table 6.2: Descriptive statistics of the extent of disclosure for sectors for the total period 1995-2000**

	<b>Machinery and Metal Industry</b>	<b>Mining and Building Equipment</b>	<b>Textile</b>	<b>Food and other Services</b>	<b>Chemical</b>
<b>Mean</b>	0.4655	0.5409	0.4802	0.4775	0.5113
<b>Maximum</b>	0.6717	0.9138	0.614	0.8928	0.6964
<b>Minimum</b>	0.2727	0.1607	0.3333	0.2712	0.34
<b>Range</b>	0.399	0.7531	0.2807	0.6216	0.3564
<b>Standard Deviation</b>	0.0874	0.1357	0.0755	0.1082	0.0923
<b>Standardised Kurt.</b>	0.2133	1.0268	-0.8467	2.3064	-1.0077
<b>Standardised Skew.</b>	0.1688	0.3494	-0.1924	0.7901	0.0012
<b>K-S (Lilliefors)</b>	0.1030	0.1135	0.1018	0.0745	0.0788

The table above shows that none of the sectors fully complied with the IAS requirements and the extent of disclosure scores of sectors varied within the range of 16% to 91%. The only sectors having a mean score of the extent of disclosure over 50% are Mining and Building Equipment (54%) and Chemical (51%). However, the rest of sectors their mean score of disclosure is less than 50%. The higher degree of disclosure for Mining and Building Equipment and Chemical sectors comparing with other sectors might be justified by linking it to the need for international investments as it is the case in Jordan.



It can be concluded from Table 6.1 and 6.2 that the level of disclosure is quite low over not only pre but also post the mandatory action for implementing the IAS suggesting that the government and the ASE systems regarding the financial reporting in Jordan are loose. Therefore, it could be suggested that to increase the degree of compliance, the accounting profession in Jordan should strengthen its monitoring and enforcement mechanisms after giving it more power through the Companies Act and the Securities Law increase awareness about the existing mandatory provisions by conducting training programs for its members on a regular basis working side by side with the ASE on a cooperative basis. In this regard, Ahmed (1994) argued that in developing countries while there are considerable incentives for voluntary disclosure in corporate annual reports, there are also reasons for not complying with mandatory disclosure regulations, including inadequate regulatory framework and enforcement mechanisms, and a lack of both an effective capital market and an accounting profession. Therefore, the assumption that all companies will disclose all mandatory information may not be true in these countries. Empirically, Wallace (1988) examined 47 Stock Exchange listed companies in Nigeria and concluded that many companies in that country publish annual reports that do not adequately comply with minimum disclosure regulation.

The following section will test the significance of the changes in the extent of disclosure in compliance with the IAS over the period 1995-2000 across all JIC and across sectors (H01).

### **Test of Hypothesis 1 (H01)**

In order to test H01 *“there are no changes in the extent of disclosure in compliance with the IAS in the annual reports of JIC listed on ASE and their shares traded over the period 1995-2000”* across all companies, the extent of disclosure scores were grouped into five pairs (1995-1996; 1996-1997; 1997-1998; 1998-1999, 1999-2000, 1995-2000 and before/after the mandatory action),

and the parametric paired t-test was run.<sup>1</sup> To be able to use the parametric t statistic, the assumption that the sample is drawn from a normally distributed population must be satisfied. As indicated by the Kurtosis and Skewness statistics and confirmed by the K-S Lilliefors tests of normality, the extent of disclosure scores for the total period appear to be normally distributed having a value for the normality tests between the range of +/-1.96 'see Table 6.1'.

The test results are summarised in Table 6.3.

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<sup>1</sup> The Wilcoxon Matched-Pairs Signed-Ranks test was also run and its results are presented together with the t-test results.





As can be seen from the above table, the null hypothesis was rejected for all of the pairs, except 1995-1996. However, there was a conflicting result for accepting or rejecting the null hypothesis for the pairs 1999-2000 between t-test and Wilcoxon test (the null hypothesis has been rejected by Wilcoxon while it has been accepted by t-test - although still near the boundary suggesting that to reject the hypothesis). As the changes in the extent of disclosure scores from one year to another were positive 'see Figure 6.1', the above results show that the sampled companies' extent of disclosure in compliance with the IAS increased significantly over the period 1996 to 1999 (changes in these time intervals were significant at the 5% significance level). An important point to note is that even though an increase in the companies' extent of disclosure in compliance with the IAS was for most of the pairs of years, except the pair between 1995-1996 and 1999-2000, over 76% of the observe overall increase<sup>2</sup> occurred during the years 1997 to 1999, which was the period that surrounds the year that the IAS were mandatory adopted.

Given that there are indications as regards to the impact of the ASE law No.23 of 1997, the significant increase in the extent of disclosure in compliance with the IAS could be attributed mainly to the enactment of the ASE law No.23 of 1997 which required from all Jordanian companies listed on the financial market to comply the IAS in preparing their annual reports. This is clearly obvious from the result presented in Table 6.3 for both tests for the pair Before/After the mandatory action which shows a significant difference. An important point has to be mentioned, moreover, is that although the implementation for the IAS started in the year 1998 but the significant change started in the extent of disclosure before that year. This results could be attributable to many factors such as Jordanian Association of Certified Public Accountants (JACPA) who decided in its Ordinance No.54 that IAS to be followed compulsory by the Jordanian public accountants during their course of examination of financial statements of the Jordanian Shareholding Companies (JSC) starting by December 1990 'see Chapter Three— section 3.5.1.1', pressure from companies liked with the international

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<sup>2</sup> As can be seen from Table 6.1 (see mean, which shows changes in the mean score of the extent of disclosure) the total change in the mean score of the extent of disclosure between 1995 and 2000 was 10.7%, and 8.96% of this total change occurred during the years from 1998 to 2000.



market to implement early the IAS, the absence of national accounting standards, researchers and experts recommendations of implementing the IAS. As a consequence, it can be seen that there was a drift up in the extent of disclosure regarding the mandatory action in 1998 for implementing the IAS and not a jump up as expected to be seen 'see Table 6.1 and Figure 6.1'.

For supporting the above argument, General Linear Model (GLM) has been used by running the Univariate Analysis of Variance for testing whether the extent of disclosure scores over the period 1995-2000 were significantly different. The test shows that the difference among means over the period 1995-2000 is significant (F Ratio = 10.418 and F Prob. = 0.000). For showing between which pair of years the mean difference is significant, however, Tukey HSD has been used and its results summarised in Table 6.4.

**Table 6.4: Summary for the mean difference in the extent of disclosure between each pair of years**

	1996	1997	1998	1999	2000
1995	0.0059	0.0182	0.0575*	0.0888*	-0.1078*
1996		0.0122	0.0515	0.0828*	-0.1018*
1997			0.0393	0.0706*	0.0895*
1998				0.0313	0.0502
1999					0.0189

\* = Significant at 0.05 level (two-tailed)

As can be seen from the above table, the null hypothesis was rejected for the pairs 1995-1998; 1995-1999; 1995-2000; 1996-1999; 1996-2000; 1997-1999 and 1997-2000. On the other hand, the null hypothesis was accepted for the pairs 1995-1996; 1995-1997; 1996-1997; 1996-1998; 1997-1998; 1998-1999; 1998-2000 and 1999-2000. Therefore, it can be concluded that the null hypothesis was rejected when the Tukey HSD used to test the significance in mean difference between pair of years one of them before the mandatory action which is 1995 until 1997 and another after the mandatory action which is 1998, 1999 and 2000. This result indicates that the mean difference significance could be attributed mainly to the

enactment of the Securities Law No.23 of 1997 argued earlier. Moreover, for the years after the mandatory action, the more recent the year is the more significant difference in means is with the years before the mandatory action confirming the above conclusion ‘see Table 6.3’.

In order to test the null hypothesis across sectors, the Univariate Analysis of Variance employed which shows that the difference is significant among industrial sectors (F Ratio = 5.287 and F Prob. = 0.000). For showing between which sectors the mean difference is significant, however, Tukey HSD has been used and its results summarised in Table 6.5.

**Table 6.5: Summary for the mean difference in the extent of disclosure between each pair of sectors**

	<b>Mining and Building Equipment</b>	<b>Textile</b>	<b>Food and other Services</b>	<b>Chemical</b>
<b>Machinery and Metal Industry</b>	-0.0712*	-0.0148	-0.00965	-0.0439
<b>Mining and Building Equipment</b>		0.0564*	0.0616*	0.0273
<b>Textile</b>			0.00517	-0.0291
<b>Food and other Services</b>				-0.0343

\* = Significant at 0.05 level (two-tailed)

As can be seen from the above table, the difference is significant between the Mining and Building Equipment sector and the other sectors except the Chemical sector where it is found not significant. One possible explanation for this result could be due to the fact that companies in this industry category relying heavily on the foreign investments particularly those large companies who are considered as the



biggest companies in the country such as Jordan Phosphate Mines, Jordan Cement Factories, Arab Potash, and Jordan Cement Factories. These companies, therefore, relatively faced higher pressure from the foreign investors and the outside world to disclose more information in comparison with other domestic and smaller size companies in the other industries.

Finally it has to be mentioned that interact between sectors and years is not significantly different according to the Univariate Analysis of Variance test ( $F$  Ratio = 0.195 and  $F$  Prob. = 1.000).

### **6.3 Company-Specific Factors and the Change in the Extent of Disclosure in Compliance with the IAS in Jordan**

As introduced in Chapter 1, the secondary objective of this study is to assess the impact of company-specific factors on the extent of disclosure in compliance with the IAS for JIC listed on ASE and their shares traded over the period 1995-2000. In order to accomplish such an objective, the study looks at the association between selected five company-specific factors and the extent of disclosure in compliance with the IAS in the annual reports of JIC for six years: 1995, 1996, 1997, 1998, 1999 and 2000.

Five company-specific factors (independent variables) were selected on the basis of theoretical arguments, literature review and applicability to Jordanian Companies, are company size, audit firm, industry type, profitability and structure. As details were provided in Chapter Five (Research Methodology and Hypotheses Chapter), the extent of disclosure (dependent variable) was estimated by an index on the basis of 137 items for the years 1995-1997 of information representing the IAS applicable to JIC, 186 items for the year 1998, 221 items for the year 1999 and 219 items for the year 2000.

The possible link between the selected five company-specific factors and the extent of disclosure were discussed and accordingly one main hypothesis and five sub hypothesis were formulated in Chapter Five (Research Methodology and Hypotheses Chapter). This section reports the results of the univariate and

multivariate tests that were conducted to examine the association between the five variables and the extent of disclosure.<sup>3</sup>

### 6.3.1 Univariate Analysis

As presented in the Research Methodology and Hypotheses chapter, to measure the association between selected variables and the extent of disclosure for each of the six years separately, two independent-sample t-test (for variables company size, audit firm, profitability and structure), and one-way ANOVA test (for variable industry type) were undertaken. The Kruskal Wallis test (a non-parametric alternative to ANOVA) for variable industry type and Mann-Whitney U test (a non-parametric alternative to t-test) for variables company size, audit firm, profitability and structure were also run to check the results of the parametric tests. The results with respect to each variable are discussed below.

#### 6.3.1.1 Association between company size -total assets- and the extent of disclosure

A two independent-sample t-test was undertaken to test the null hypothesis "*There is no association between company size -total assets- and the extent of disclosure in the annual reports of JIC listed on ASE and their shares traded during the period 1995-2000*". In order to use this test, the distribution of data (the extent of disclosure scores) for the two groups (the study classified these companies into two groups as companies with total assets equal or more than the mean were called "large companies" which is given one and companies with total assets less than the mean were called "small companies" which is given zero) must be approximately normal. The skewness, kurtosis and K-S Lilliefors normality tests were carried out separately on the basis of the extent of disclosure scores of the two groups for each of the six years covered in this study and the results did not indicate extreme normality. Table 6.6 shows the descriptive statistics of the extent of disclosure for the large companies.

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<sup>3</sup> The extent of disclosure scores for each company selected in this study over the period 1995-2000 was provided in Appendix 3.



**Table 6.6: Descriptive statistics of the extent of disclosure for large JIC over the six years**

	1995	1996	1997	1998	1999	2000
<b>Mean</b>	0.4869	0.4979	0.5650	0.6209	0.6758	0.6763
<b>Maximum</b>	0.6441	0.6441	0.678	0.7462	0.8965	0.9138
<b>Minimum</b>	0.3333	0.3333	0.4324	0.4127	0.4193	0.4516
<b>Range</b>	0.3108	0.3108	0.2456	0.3335	0.4772	0.4622
<b>Standard Deviation</b>	0.1129	0.1104	0.0961	0.1227	0.1736	0.1331
<b>Standardised Kurt.</b>	-0.9264	-0.4126	-0.8061	0.5763	-0.6207	0.6783
<b>Standardised Skew.</b>	0.0308	-0.3041	-0.4245	-1.1164	-0.3564	0.1972
<b>K-S (Lilliefors)</b>	0.1758	0.1987	0.1915	0.2450	0.1715	0.1722

The table above shows that none of the large companies estimated by total assets fully complied with the IAS requirements and the extent of disclosure scores of those companies varied within the range of 33% to 91% over the period 1995-2000. The proportion of the companies which the extent of disclosure scores were more than 50% was 50%, 60%, 83%, and 89% in 1995 and 1996, 1997, 1998 and 1999, and 2000, respectively. In addition, the mean score of the extent of disclosure is just over 48% in 1995, 49% in 1996. However, the mean score of the extent of disclosure for those companies changed considerably to 56% in 1997, 62% in 1998; 67% in 1999 and 2000. It can be recognised that the mean score of the extent of disclosure for the most recent year (2000) is significantly different from the mean score in 1995 (the beginning of the period under consideration).

For small companies, however, Table 6.7 shows the descriptive statistics of the extent of disclosure.

**Table 6.7: Descriptive statistics of the extent of disclosure for small JIC over the six years**

	1995	1996	1997	1998	1999	2000
<b>Mean</b>	0.4473	0.4526	0.4598	0.4944	0.5225	0.5343
<b>Maximum</b>	0.5968	0.606	0.6094	0.629	0.6666	0.8928
<b>Minimum</b>	0.2712	0.2692	0.2878	0.3278	0.3333	0.1607
<b>Range</b>	0.3256	0.3368	0.3216	0.3012	0.3333	0.7321
<b>Standard Deviation</b>	0.0775	0.0795	0.0717	0.0821	0.0837	0.1220
<b>Standardised Kurt.</b>	-0.1866	-0.1761	-0.2971	-0.9491	-0.7292	2.2900
<b>Standardised Skew.</b>	-0.1531	-0.3327	-0.1144	-0.3656	-0.2587	-0.2425
<b>K-S (Lilliefors)</b>	0.0694	0.0645	0.0494	0.1349	0.0955	0.0814

The table above shows that the proportion of the companies whose the extent of disclosure scores were more than 50% was 32%, 29%, 52%, 66%, and 68% in 1995, 1996 and 1997, 1998, 1999, and 2000, respectively. In addition, the mean score of the extent of disclosure is just over 44% and 45% in 1995, 1996 and 1997 respectively. However, the mean score of the extent of disclosure for those companies changed gradually to just over 49%, 52% and 53% in 1998, 1999 and 2000 respectively.

The two independent-sample t-test was run using SPSS for windows and in the output the SPSS produces two different versions of the t-test. One of them (Equal variance of t-test) assumes that the variance in the two populations are equal and the other (Unequal variance t-test) does not. In order to identify which one of these two tests is more appropriate to test the null hypothesis, the Levene test for homogeneity of variance was undertaken. The Levene test was found not to be significant at the 0.05 level for each of the six years except for the year 1999 and for the total period together (1995-2000). Thus, it was decided to use the equal variance t-test to test the above hypothesis when the homogeneity of variance achieved and use the unequal



variance t-test when the homogeneity of variance was not achieved. The t-test results together with descriptive statistics, Levene test and Mann Whitney U test as a non-parametric test for checking the parametric test results are shown in Table 6.8.

Table 6.8: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Company size and the extent of disclosure

Year	Company size	No. of cases	Mean	Mean Difference	Standard Deviation	t-test results		Mann Whitney U		Levene's test for equality of variance	
						t value	2-tail sig.	Z	2-tailed P	F Ratio	F Prob.
1995	1	6	0.48	0.039608	0.1129	1.11(e)	0.27(e)	-0.89	0.37	2.2	0.13
	0	44	0.44		0.0775						
1996	1	6	0.49	0.045302	0.1104	1.25(e)	0.21(e)	-1.13	0.25	1.2	0.26
	0	44	0.45		0.0795						
1997	1	5	0.56	0.105231	0.0961	3.01(e)	0.00(e)	-2.26	0.02	0.8	0.36
	0	45	0.46		0.0717						
1998	1	6	0.62	0.126479	0.1227	3.33(e)	0.00(e)	-2.41	0.01	1.7	0.19
	0	44	0.49		0.0821						
1999	1	6	0.67	0.153285	0.1736	2.12(u)	0.00(u)	-2.23	0.02	6.6	0.01
	0	44	0.52		0.0837						
2000	1	9	0.67	0.142009	0.1331	3.11(e)	0.00(e)	-2.86	0.00	0.0	0.91
	0	41	0.53		0.1220						



Table 6.8: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Company size and the extent of disclosure

Year	Company size	No. of cases	Mean	Mean Difference	Standard Deviation	t-test results		Mann Whitney U		Levene's test for equality of variance	
1995-2000	1	38	0.59	0.11027	0.1436	4.59(u)	0.00(u)	-4.65	0.00	16.	0.00
	0	262	0.09		0.0928						

(e) = Equal variance t-test results                      (u) = Unequal variance t-test results

Table 6.8 shows that the mean of disclosure level for large JIC was greater than small JIC in each of the six years covered in this study. By looking at the mean difference between the two groups over the period 1995-2000 it can be recognised from the Table above that the mean difference was increasing until 1999 (the mean difference was the highest in 1999) when the mean difference between the two groups decreased slightly down in 2000 from 0.15 to 0.14.

As can be seen from Table 6.8 the observed two-tail significance from the equal/unequal variance t-test and Mann Whitney U was not significant at the 0.05 level for the years 1995 and 1996. Therefore, the test results accept the null hypothesis for the years 1995 and 1996. For the years 1997 until 2000 and for the total period together (1995-2000), however, the tests results were significant at the level 0.05 recommending rejecting the null hypothesis. Therefore, it can be concluded in general that there is no association between company size -total assets- and the extent of disclosure for the JIC concerned for the years 1995 and 1996, while there is association between the company size –total assets- and the extent of disclosure for the years 1997, 1998, 1999, 2000, and for the total period together (1995-2000).

One thing has to be mentioned that, large and small size for companies is arguable issue. In other words, what might be considered as large company in developing countries such as Jordan it might be not in a developed country like USA or UK. This fact might influence the testing hypothesis results in different countries. Table 6.9 shows JIC size considered in this study according to their book value of total assets over the period 1995-2000.



Table 6.9: JIC Size (Total Assets in JD) over the period 1995-2000

Company Name	1995	1996	1997	1998	1999	2000	Average
Arab Aluminium Industry / ARAL	16836339	17682177	17858534	16733850	16067783	15134966	16718941.5
National Steel Industry	11785597	8537456	8601302	5744548	6635962	6122322	7904531.167
The Jordan Pipes Manufacturing	9075316	8778070	9740549	10202482	9135619	8858056	9298348.667
Aladdin Industries	4370952	4332077	5081708	3752166	4125840	3052652	4119232.5
National Cable and Wire Manufacturing	23162467	22393346	23897090	22523410	18825997	18101104	21483902.33
Jordan New Cable Company	12000582	10678300	11524347	11896325	16749730	18324090	13528895.67
Jordan Steel	17893237	24727935	24362375	28713916	28432219	22606080	24455960.33
Arab Electrical Industries	8100449	7636020	7585155	7537512	7286936	7832507	7663096.5
RUM Metal Manufacturing	10101339	9743124	8646344	8029669	7482891	6936113	8489913.333
The Public Mining	2360816	2009046	1900759	1862351	1931132	2591401	2109250.833
Jordan Ceramic Industries	11872266	12558736	17489311	16102237	15518459	14595595	14689434
Jordan Phosphate Mines	387537179	390773547	463054597	455471938	447123878	404502091	424743871.7
National Industries	7687054	8378474	9085689	9416552	8836956	9507753	8818746.333
RAFIA Industries	3418849	4647345	4265041	4371307	3657374	3081152	3906844.667

Table 6.9: JIC Size (Total Assets in JD) over the period 1995-2000

Company Name	1995	1996	1997	1998	1999	2000	Average
Attanqeeb Construction Material	6038366	5807119	5972498	5939800	5585091	5558174	5816841.333
Jordan Cement Factories	187907440	189933948	182345227	176592034	164599941	164591348	177661656.3
Jordan Industrial Resources Co.	15208308	14583562	13292368	15418947	14446804	15975986	14820995.83
Jordan Petroleum Refinery	330537538	380391696	401671916	399378068	247320442	240377769	333279571.5
Arab Potash	296704628	313426073	340847000	376914000	414724000	39702000	297052950.2
International Ceramic Industries	7394677	8812811	9001596	8460597	8073535	7785869	8254847.5
The Jordan Worsted Mills	33324858	33222363	34738834	41004674	41810700	43695762	37966198.5
The Jordan Tanning	7323397	5885620	5932404	5797756	6047495	5863802	6141745.667
Woollen Industries	1848807	1922313	1937492	2053412	1866790	1644372	1878864.333
Jordan Rock Wool Industry	4282700	3879494	3444506	2898742	2767710	2619686	3315473
EL-ZAY Ready Wear Manufacturing	10732403	13209751	13209751	17193183	19256182	19510456	15518621
International Textile Manufacturing	1927781	2055010	1885015	2251541	1974269	1737286	1971817
National Textile and Plastic Industries	4106890	3630861	3196273	3262217	3167070	2738852	3350360.5



Table 6.9: JIC Size (Total Assets in JD) over the period 1995-2000

Company Name	1995	1996	1997	1998	1999	2000	Average
Jordan Dairy	3207691	3599300	4173207	4386352	4489369	4968124	4137340.5
General Investment	9377390	10500833	11531836	12238840	12863962	13252647	11627584.67
International Tobacco and Cigarettes	17381323	18384312	24891569	28273493	24897460	42810155	26106385.33
Arab Food and Medical Appliances	5292670	7706456	7854930	7801081	7445866	8391745	7415458
Universal Modern Industries Co. for Edible Oil	12969078	13411452	15570042	11287196	11406468	10229907	12479023.83
Kawther Investment	5727194	5699978	5671585	5849343	5462053	6059178	5744888.5
Arab Investment and International Trade	4706993	4864714	5661907	4454859	4147230	3088168	4487311.833
Livestock and Poultry	4572508	4437955	4672108	4679612	4472355	4037386	4478654
The Union Tobacco and Cigarettes Industries	3853033	6394877	9394082	11386545	18743813	21658327	11905112.83
Pearl Sanitary Paper Converting	4485070	7810295	7602045	6834088	6115783	5657727	6417501.333
The Arab Pharmaceutical	42329697	43134606	44634316	48176050	46845120	50670858	45965107.83

Table 6.9: JIC Size (Total Assets in JD) over the period 1995-2000

Company Name	1995	1996	1997	1998	1999	2000	Average
Manufacturing							
The Industrial, Commercial and Agricultural	23002172	21825572	20577969	19660543	30944414	30174299	24364161.5
The Arab Chemical Detergents Industries	4633664	4535811	5650010	5967860	5442640	5555771	5297626
Dar Al-Dawa Development and Investment	26316550	24966786	30225896	33432904	34568295	37736960	31207898.5
Intermediate PetroChemicals Industries	8873946	7952386	7914055	7314928	7055357	6137471	7541357.167
Arab Center for Pharmaceuticals and Chemicals	7495453	7491799	7750729	7469336	7152337	7621925	7496929.833
Jordan Chemical Industries	3050006	2927524	2913263	3083672	3225819	3062609	3043815.5
Universal Chemical Industries	3781644	3518479	3841873	4340724	4162180	3833669	3913094.833
Jordan Industries and Match / JIMCO	2417702	1898380	1948410	1714504	1762959	1658010	1899994.167
Jordan Sulpha Chemicals	9621571	9279464	8756809	8597468	7395811	6763113	8402372.667



Table 6.9: JIC Size (Total Assets in JD) over the period 1995-2000

Company Name	1995	1996	1997	1998	1999	2000	Average
Middle East Pharmaceuticals and Chemical Med. Appliances	6081504	7317899	8677551	9923498	10004870	10400018	8734223.333
AL-RAZI Pharmaceutical Industries	4895550	7215443	12648643	15236977	15454745	15125887	11762874.17
Union Chemical and Vegetable Oil Industries	5950631	8955513	10510822	12251752	13233719	9312974	10035901.83
Average Total Assets	33071265.5	34869322.2	37872826.8	38677697.2	36214868.6	28025083.4	34788510.61

### 6.3.1.2 Association between audit firm and the extent of disclosure

A two independent-sample t-test was undertaken to test the null hypothesis “*There is no association between audit firm and the extent of disclosure in the annual reports of JIC listed on ASE and their shares traded during the period 1995-2000*”. In order to use this test, the distribution of data (the extent of disclosure scores) for the two groups (JIC their annual reports audited by one of the top five international audit firms which is given one and the second group is otherwise which is given zero) must be approximately normal. The skewness, kurtosis and K-S Lilliefors normality tests were carried out separately on the basis of the extent of disclosure scores of the two groups for each of the six years covered in this study and the results did not indicate extreme normality problems. Table 6.10 shows the descriptive statistics of the extent of disclosure for JIC their annual reports audited by one of the top five international audit firms.

**Table 6.10: Descriptive statistics of the extent of disclosure for JIC their annual reports audited by one of the top five international audit firms over the six years**

	1995	1996	1997	1998	1999	2000
<b>Mean</b>	0.4870	0.4985	0.5106	0.5723	0.6097	0.6154
<b>Maximum</b>	0.6441	0.6441	0.678	0.7462	0.8965	0.9138
<b>Minimum</b>	0.361	0.377	0.3968	0.4255	0.4255	0.1607
<b>Range</b>	0.2831	0.2671	0.2812	0.3207	0.471	0.7531
<b>Standard Deviation</b>	0.0800	0.0761	0.0826	0.0910	0.1215	0.1697
<b>Standardised Kurt.</b>	-0.6771	-0.7577	-0.6782	-0.5259	0.7732	3.2814
<b>Standardised Skew.</b>	0.2261	0.1487	0.4996	0.3772	0.7604	-1.0973
<b>K-S (Lilliefors)</b>	0.1268	0.1258	0.1379	0.1494	0.1378	0.2073



The table above shows that none of the companies their annual report audited by one of the top five international audit firms in the sample fully complied the IAS requirements and the extent of disclosure scores of those companies varied within the range of 16% to 91% over the period 1995-2000. The proportion of the companies whose the extent of disclosure scores were more than 50% was 56%, 56%, 50%, 80%, 88% and 87% in 1995, 1996, 1997, 1998, 1999, and 2000, respectively. In addition, the mean score of the extent of disclosure is just over 48% in 1995; 49% in 1996 and 51% in 1997. However, the mean score of the extent of disclosure for those companies changed considerably to 57% in 1998; 60% in 1999; and 61% in the most recent year (2000). In addition, the standard deviation within each year increased starting from 8% in the beginning of the period covered (1995) to almost 17% in the most recent year (2000) suggesting that the extent of disclosure variation within the group increased over the period to reach its highest in 2000.

For other companies their annual reports not audited by one of the big five international audit firms, however, Table 6.11 shows the descriptive statistics of the extent of disclosure.

**Table 6.11: Descriptive statistics of the extent of disclosure for JIC their annual reports not audited by one of the big five international audit firms**

	1995	1996	1997	1998	1999	2000
<b>Mean</b>	0.4357	0.4372	0.4513	0.4827	0.5055	0.5361
<b>Maximum</b>	0.591	0.5692	0.5738	0.6225	0.644	0.8928
<b>Minimum</b>	0.2712	0.2692	0.2878	0.3278	0.3333	0.3333
<b>Range</b>	0.3198	0.3	0.286	0.2947	0.3107	0.5595
<b>Standard Deviation</b>	0.0789	0.0807	0.0723	0.0856	0.0825	0.1107
<b>Standardised Kurt.</b>	-0.2093	-0.4404	-0.4558	-1.2563	-0.8743	1.8285
<b>Standardised Skew.</b>	-0.0999	-0.3113	-0.1869	-0.1667	-0.1510	0.6675
<b>K-S (Lilliefors)</b>	0.0646	0.0702	0.0498	0.1490	0.1298	0.0818

The proportion of the companies whose the extent of disclosure scores were more than 50% was 23%, 21%, 26%, 46%, 58%, and 66% in 1995, 1996, 1997, 1998, 1999, and 2000, respectively. In addition, the mean score of the extent of disclosure is just over 43%, 43% and 45% in 1995, 1996 and 1997 respectively. However, the mean score of the extent of disclosure for those companies changed gradually to just over 48%, 50% and 53% in 1998, 1999 and 2000 respectively. It can be recognised that the mean score of the extent of disclosure for the most recent year (2000) quite different from the mean score in 1995 (the beginning of the period under consideration).

For testing the null hypothesis, the methodology followed in section 6.3.1.1 will be employed. Therefore, Levene test was found not to be significant at the 0.05 level for each of the six years and also for the total period together (1995-2000). Thus, it was decided to use the equal variance t-test to test the above hypothesis since the homogeneity of variance achieved. The t-test results together with descriptive statistics, Levene test and Mann Whitney U test as a non-parametric test for checking the parametric test results are shown in Table 6.12.



Table 6.12: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Audit firm and the extent of disclosure

Year	Audit firm	No. of Com.	Mean	Mean difference	Standard Deviation	Equal t-test results		Variance		Mann Whitney U		Levene's test for equality of variance	
						t value	2-tail sig.	Z	2-tailed P	F Ratio	F Prob.		
1995	1	16	0.487	0.0513	0.08	-2.13	0.04	-1.924	0.054	0.07	0.79		
	0	34	0.435		0.08								
1996	1	17	0.498	0.0613	0.07	-2.588	0.01	-2.335	0.02	0.02	0.88		
	0	33	0.437		0.08								
1997	1	16	0.511	0.0603	0.08	-2.583	0.01	-2.111	0.035	0.54	0.465		
	0	34	0.451		0.07								
1998	1	15	0.572	0.0896	0.09	-3.328	0.002	-2.594	0.009	0.003	0.955		
	0	35	0.483		0.08								
1999	1	17	0.609	0.1042	0.12	-3.587	0.001	-2.929	0.003	2.22	0.142		
	0	33	0.505		0.08								
2000	1	15	0.615	0.0793	0.17	-1.966	0.055	-2.520	0.12	0.798	0.376		
	0	35	0.536		0.11								

Table 6.12: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Audit firm and the extent of disclosure

Year	Audit firm	No. of Com.	Mean	Mean difference	Standard Deviation	Equal t-test results		Mann Whitney U		Levene's test for equality of variance	
						t value	2-tail sig.	Z	2-tailed P	F Ratio	F Prob.
1995-2000	1	96	0.548	0.0730	0.014	-5.812	0.000	-5.273	0.000	3.648	0.057
	0	204	0.475		0.013						



Table 6.12 shows that the mean of disclosure level for JIC their annual reports audited by one of the big five international audit firms was greater than the JIC their annual reports not audited by one of the big five audit firms in each of the six years covered in this study. Although the mean of disclosure scores for both groups has increased from one year to another, the increase in mean score for the first group was greater than the second group before and after the mandatory action except for the pairs 1996/1997 and 1999/2000 (it was 0.011, 0.013, 0.061, 0.037 and 0.006 for the first group for the years 1995, 1996, 1997, 1998, 1999 and 2000 respectively, while it was 0.002, 0.014, 0.031, 0.023, and 0.031 for the second group). After the mandatory action, however, it can be seen that there was a drift up in the mean of disclosure for both groups; although it was expected to jump up as a consequence of implementing the IAS 'see section 6.2'. By looking at the mean difference between the two groups over the period 1995-2000 it can be seen from the Table above that the difference in means between the two groups was increasing until the year 1999 when it reached its peak and then decreased for the pairs 1999/2000 (the most recent pair).

As can be seen from Table 6.12 the observed two-tail significance from the equal t-test and Mann Whitney U was significant at the 0.05 level not only for each year separately but also for the total period together except for the year 2000. Therefore, the test results reject the null hypothesis for each year and also for the total period together except for the year 2000. One possible explanation for not being able to reject the null hypothesis for the year 2000 (the most recent year) is that the effort from Auditors, ASE (Securities Law) and the Jordanian Government (Companies Act) toward the implementation of the IAS and consequently the increase in the level of disclosure for both groups. Generally speaking, it can be said, therefore, that there is an association between audit firm and the extent of disclosure for the JIC included in this study.

### **6.3.1.3 Association between industry type and the extent of disclosure**

As there were more than two industry groupings, a one-way ANOVA was undertaken to test the null hypothesis "*There is no association between industry*

*type and the extent of disclosure in the annual reports of JIC listed on Amman Stock Market and their shares traded during the period 1995-2000”.*

As discussed in the Research Methodology and Hypotheses Chapter, in order to undertake the one-way ANOVA procedures, the data (the extent of disclosure scores) must fulfil two conditions. Firstly, each of the groups must be a random sample from a normal distribution and secondly, the variance of all groups must be equal. In order to check the normality assumption for industry type groups, Skewness, Kurtosis and K-S Lilliefors normality tests were carried out for each of the six years covered in this study. Both the Skewness and Kurtosis were found to be within the range of +/- 1.96 and the K-S Lilliefors test were found to be greater than the 0.05 level for most of the industry type groups in each year indicating the normality assumption was approximately met. Furthermore, in order to determine whether the equal-variance assumption was met, the “Levene test for homogeneity of variance” (Norusis 1995, PP. 261-262) was run for each of the six years separately and also for the total period together (1995-2000). The Levene test results, which were not significant at the 0.05 significant level, indicate that the equal variance assumption for the industry type groups is approximately met for the all years except for the total period together (1995-2000). However, using the Kruskal Wallis test as a non-parametric for confirmation will reduce the error of rejecting or accepting the null hypothesis when it is not. The one-way ANOVA statistics together with some descriptive statistics, Levene test and Kruskal Wallis results are shown in Table 6.13.



Table 6.13: One-way ANOVA test, descriptive statistics, Levene test and Kruskal Wallis test results: industry type and the extent of disclosure

Year	Industry Type <sup>4</sup>	No. of companies	Mean	Standard Deviation	One-way ANOVA		Kruskal Wallis		Test for homogeneity of variances	
					F Ratio	F Prob.	Chi-Square	2-tailed P	Levene Statistic	Sig.
1995	1	9	0.426	0.086	1.779	0.149	5.72	0.2202	0.25546	0.90
	2	11	0.494	0.086						
	3	7	0.445	0.085						
	4	10	0.412	0.074						
	5	13	0.469	0.07						
1996	1	9	0.424	0.076	0.959	0.439	4.18	0.3818	0.35456	0.83
	2	11	0.484	0.103						
	3	7	0.454	0.084						
	4	10	0.438	0.075						

<sup>4</sup> Industry types has been given numbers, where 1 for Machinery and Metal industry, 2 for Mining and Building Equipment, 3 for Textile, 4 for Food and other Services, and 5 for Chemical sector.

Table 6.13: One-way ANOVA test, descriptive statistics, Levene test and Kruskal Wallis test results: industry type and the extent of disclosure

Year	Industry Type <sup>4</sup>	No. of companies	Mean	Standard Deviation	One-way ANOVA		Kruskal Wallis		Test for homogeneity of variances		
					F Ratio	F Prob.	Chi-Square	2-tailed P	Levene Statistic	Sig.	
	5	13	0.477	0.078							
1997	1	9	0.425	0.064	1.902	0.126	5.67	0.2244	0.58244	0.67	
	2	11	0.51	0.086							
	3	7	0.454	0.073							
	4	10	0.454	0.072							
	5	13	0.49	0.083							
1998	1	9	0.467	0.076	1.57	0.198	4.69	0.3205	0.73266	0.57	
	2	11	0.563	0.112							
	3	7	0.5	0.063							
	4	10	0.486	0.098							
	5	13	0.517	0.097							
1999	1	9	0.503	0.074	1.67	0.173	4.78	0.3098	1.99928	0.11	



Table 6.13: One-way ANOVA test, descriptive statistics, Levene test and Kruskal Wallis test results: industry type and the extent of disclosure

Year	Industry Type <sup>4</sup>	No. of companies	Mean	Standard Deviation	One-way ANOVA		Kruskal Wallis		Test for homogeneity of variances	
					F Ratio	F Prob.	Chi-Square	2-tailed P	Levene Statistic	Sig.
	2	11	0.608	0.153						
	3	7	0.507	0.065						
	4	10	0.521	0.102						
	5	13	0.545	0.093						
2000	1	9	0.548	0.086	0.26	0.902	2.21	0.6955	2.09413	0.09
	2	11	0.587	0.208						
	3	7	0.523	0.07						
	4	10	0.555	0.156						
	5	13	0.569	0.102						
1995-2000	1	54	0.466	0.087	5.334	0.000	17.4	0.0015	3.09859	0.01
	2	66	0.541	0.136						

Table 6.13: One-way ANOVA test, descriptive statistics, Levene test and Kruskal Wallis test results: industry type and the extent of disclosure

Year	Industry Type <sup>4</sup>	No. of companies	Mean	Standard Deviation	One-way ANOVA		Kruskal Wallis		Test for homogeneity of variances	
					F Ratio	F Prob.	Chi-Square	2-tailed P	Levene Statistic	Sig.
	3	42	0.48	0.076						
	4	60	0.478	0.108						
	5	78	0.511	0.092						



As shown in Table 6.13 five industry groupings are used in this study to examine the relationship between industry type and the extent and disclosure. The differences in mean for the extent of disclosure between industry group with a highest score and that with the lowest score were 0.08 in 1995, 0.06 in 1996, 0.085 in 1997, 0.096 in 1998, 0.105 in 1999, and 0.06 in 2000. The industry group with the highest mean of disclosure score was the Mining and Building Equipment industry over the period under consideration. The Food and other Services industry, however, had the lowest mean of disclosure in 1995, while the Machinery and Metal industry had the lowest mean of disclosure in 1996, 1997, 1998, and 1999. In the most recent year (2000), moreover, the Textile industry had the lowest mean of disclosure. The average extent of disclosure of companies in Mining and Building Equipment and Chemical industries were greater than that of companies in Machinery and Metal industry, Textile, and Food and other Services over the six years.

As Table 6.13 shows, the F ratios were 1.779 in 1995, 0.959 in 1996, 1.902 in 1997, 1.57 in 1998, 1.67 in 1999 and 0.26 in 2000, and the observed significant level (F Prob.) was not significant at the 0.05 level for the all years under consideration (1995-2000). However, it was found that for the total period together the F ratio was 5.334 and the observed significant level was significant (F Prob. =0.0001). Thus, the test results accept the null hypothesis which says there is no association between industry type and the extent of disclosure for each year separately, but the null hypothesis was rejected for the total period together suggesting that there is such association.

In order to establish which of the five industry types are significantly different from each other for the total period together which caused the rejection of the null hypothesis, however, multiple comparison Tukey HSD procedure was carried out and its results summarised in Table 6.14.

**Table 6.14: Summary for the mean difference in the extent of disclosure between each pair of sectors**

<b>1995-2000</b>	<b>Mining and Building Equipment</b>	<b>Textile</b>	<b>Food and other Services</b>	<b>Chemical</b>
<b>Machinery and Metal Industry</b>	-0.07532*	-0.01466	-0.01201	-0.04579
<b>Mining and Building Equipment</b>		0.060656*	0.06331*	0.029527
<b>Textile</b>			0.002654	-0.03113
<b>Food and other Services</b>				-0.03378

\* = Significant at 0.05 level (two-tailed)

As can be seen from the above table, this procedure showed significant differences at the 0.05 level between the Mining and Building Equipment sector and the other sectors except the Chemical sector where it is found not to be significant. As the mean of disclosure score for the Mining and Building Equipment was higher than that of other industries over the years<sup>5</sup>, it can be concluded that the extent of disclosure of companies operating in the Mining and Building Equipment sector taking into account the total period together was significantly greater than that of companies operating other sectors except Chemical sector. Van Wolferen (1989) argued that economy prospers because areas of industry that show promise are stimulated by fiscal policies favouring investments. Since Mining and Building Equipment is of fundamental importance to Jordan, it is possible that levels of disclosure in their corporate annual reports may differ from those in other business sectors.



### 6.3.1.4 Association between profitability -return on investment- and the extent of disclosure

A two independent-sample t-test was undertaken to test the null hypothesis "*There is no association between profitability –return on investment- and the extent of disclosure in the annual reports of JIC listed on ASE and their shares traded during the period 1995-2000*". In order to use this test, the distribution of data (the extent of disclosure scores) for the two groups (companies with ROI equal or more than the average were called "high return on investment" which is given one and companies with ROI less than the average were called "low return on investment" which is given zero) must be approximately normal. The skewness, kurtosis and K-S Lilliefors normality tests were carried out separately on the basis of the extent of disclosure scores of the two groups for each of the six years covered in this study and the results did not indicate extreme normality problems. Table 6.15 shows the descriptive statistics of the extent of disclosure for the JIC their profitability (ROI) is equal or above the average ROI.

**Table 6.15: Descriptive statistics of the extent of disclosure for high ROI JIC over the six years**

	1995	1996	1997	1998	1999	2000
<b>Mean</b>	0.4602	0.4619	0.4950	0.5444	0.5857	0.5881
<b>Maximum</b>	0.6441	0.5556	0.678	0.6949	0.807	0.8928
<b>Minimum</b>	0.2727	0.2727	0.2878	0.3485	0.4	0.3729
<b>Range</b>	0.3714	0.2829	0.3902	0.3464	0.407	0.5199
<b>Standard Deviation</b>	0.0909	0.0878	0.0881	0.0871	0.0977	0.1133
<b>Standardised Kurt.</b>	0.4532	0.0576	0.6821	0.5256	0.5926	0.7098
<b>Standardised Skew.</b>	-0.1455	-0.8901	-0.2749	-0.3379	0.1072	0.3506

<sup>5</sup> The mean difference between Mining and Building Equipment sector and Chemical sector was the smallest over the period 1995-2000.

**Table 6.15: Descriptive statistics of the extent of disclosure for high ROI JIC over the six years**

	1995	1996	1997	1998	1999	2000
<b>K-S (Lilliefors)</b>	0.1023	0.2007	0.1250	0.1368	0.0978	0.0759

The table above shows that none of the high return on investment companies fully complied with the IAS requirements and the extent of disclosure scores of those companies varied within the range of 27% to 89% over the period 1995-2000. The proportion of the companies whose the extent of disclosure scores were more than 50% was 37.5%, 35.7%, 45%, 72%, 84%, and 81% in 1995, 1996, 1997, 1998, 1999, and 2000, respectively. In addition, the mean score of the extent of disclosure is just over 46% in 1995 and 1996; 49.5% in 1997. However, the mean score of the extent of disclosure for those companies changed considerably to just over 54% in 1998; 58.5% in 1999; and 58.8% in the most recent year (2000).

For low return on investment companies, however, Table 6.16 shows the descriptive statistics of the extent of disclosure.

**Table 6.16: Descriptive statistics of the extent of disclosure for low ROI JIC over the six years**

	1995	1996	1997	1998	1999	2000
<b>Mean</b>	0.4483	0.4565	0.4509	0.4900	0.5135	0.5097
<b>Maximum</b>	0.5968	0.6441	0.6094	0.7462	0.8965	0.9138
<b>Minimum</b>	0.2712	0.2692	0.3279	0.3278	0.3333	0.1607
<b>Range</b>	0.3256	0.3749	0.2815	0.4184	0.5632	0.7531
<b>Standard Deviation</b>	0.0788	0.0833	0.0684	0.0961	0.1069	0.1567
<b>Standardised Kurt.</b>	-0.4050	-0.058	-0.1585	0.0289	4.3154	2.489
<b>Standardised Skew.</b>	0.0789	0.0868	0.4477	0.4277	1.4229	0.3328
<b>K-S</b>	0.1022	0.0904	0.1134	0.1122	0.1332	0.1356



**Table 6.16: Descriptive statistics of the extent of disclosure for low ROI JIC over the six years**

	1995	1996	1997	1998	1999	2000
(Lilliefors)						

The table above shows that the proportion of the companies whose the extent of disclosure scores were more than 50% was 32%, 30%, 25%, 46.8%, 58%, and 55.5% in 1995, 1996, 1997, 1998, 1999, and 2000, respectively. In addition, the mean score of the extent of disclosure is just over 44% in 1995 and 45% in 1996 and 1997. However, the mean score of the extent of disclosure for those companies changed gradually to 49%, 51% in 1998 and 1999 respectively where in the most recent year (2000) the mean score of the extent of disclosure decreased to just over 50%.

For testing the null hypothesis “*There is no association between profitability (ROI) and the extent of disclosure in the annual reports of JIC listed on Amman Stock Market and their shares traded during the period 1995-2000*”, the methodology followed in section 6.3.1.1 will be employed. Therefore, Levene test was found not to be significant at the 0.05 level for each of the six years and also for the total period together (1995-2000), suggesting that the equal variance assumption is approximately met. Thus, it was decided to use the equal variance t-test to test the above hypothesis. The t-test results together with descriptive statistics, Levene test and Mann Whitney U test as a non-parametric test for checking the parametric test results for each year are shown in Table 6.17.

Table 6.17: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Profitability firm and the extent of disclosure

Year	Profitability	No. of cases	Mean	Mean difference	Standard Deviation	Equal variance t-test results		Mann Whitney U		Levene's test for equality of variance	
						t value	2-tail sig.	Z	2-tailed P	F Ratio	F Prob.
1995	1	16	0.46	0.011953	0.0909	0.4761	0.63	-0.54	0.58	0.066	0.799
	0	34	0.4483		0.0788						
1996	1	14	0.462	0.005419	0.0878	0.2034	0.83	-0.50	0.61	0.009	0.924
	0	36	0.4566		0.0833						
1997	1	22	0.495	0.044123	0.0881	1.9944	0.05	-2.20	0.02	0.651	0.424
	0	28	0.4509		0.0684						
1998	1	18	0.5445	0.05442	0.0872	1.9844	0.05	-2.03	0.04	0.713	0.403
	0	32	0.49		0.0962						
1999	1	19	0.5858	0.072229	0.0978	2.3932	0.02	-2.70	0.00	0.049	0.825
	0	31	0.5135		0.1069						
2000	1	32	0.5882	0.078432	0.1133	2.0422	0.04	-2.30	0.02	0.707	0.405



Table 6.17: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Profitability firm and the extent of disclosure

Year	Profitability	No. of cases	Mean	Mean difference	Standard Deviation	Equal variance t-test results		Mann Whitney U	Levene's test for equality of variance	
						t value	2-tail sig.	Z	F Ratio	F Prob.
	0	18	0.5097		0.1567					
1995-2000	1	121	0.5328	0.0575	0.1090	4.7343	0.00	-4.95	1.184	0.277
	0	179	0.4753		0.0991					

Table 6.17 shows that the mean of disclosure level for high ROI was greater than the low ROI in each of the six years covered in this study. It is interesting to note that the mean of disclosure scores for both groups has increased from one year to another especially around the mandatory action where the increase was obvious comparing with the rest of the period under consideration.

By looking at the mean difference between the two groups over the period 1995-2000, however, it can be seen from the Table above that the difference was increasing over the total period (it increased from 0.012 in 1995 to 0.078 in 2000). It could be argued that the cost argument rather than the IAS pressure caused the increase in the disclosure level which is an issue will be clarified in the following sections when using the multivariate analysis (regression model) for testing the influence for the extent of disclosure in compliance with the IAS on the cost of equity capital after controlling for the variables business risk and financial risk.

As can be seen from the above Table the observed two-tail significance from the equal variance t-test and Mann Whitney U was not significant at the 0.05 level for the years 1995 and 1996. Therefore, the test results accept the null hypothesis *“There is no association between profitability and the extent of disclosure in the annual reports of JIC listed on ASE and their shares traded during the period 1995-2000”* for those two years. For the years 1997 and 1998 there were conflicting results. The null hypothesis can be accepted according to the equal variance t-test but it has to be rejected according to Whitney U the 0.05 level of significant. For the years 1999, 2000 and for the total period together (1995-2000), however, the tests results were significant at the 0.05 for the null hypothesis to be rejected. Therefore, it can be concluded in general that there is no association between profitability estimated by ROI and the extent of disclosure for the JIC concerned over the period 1995 until 1998. For the years 1999, 2000 and also for the total period together, however, there was an association between the profitability estimated by ROI and the extent of disclosure according to both tests equal variance t-test and Mann Whitney U.

#### **6.3.1.5 Association between capital structure -leverage- and the extent of disclosure**



A two independent-sample t-test was undertaken to test the null hypothesis “*There is no association between capital structure and the extent of disclosure in the annual reports of JIC listed on ASE and their shares traded during the period 1995-2000*”. In order to use this test, the distribution of data (the extent of disclosure scores) for the two groups (companies with D/E equal or more than the average were called “high geared companies” which is given one and companies with D/E less than the average were called “low geared companies” which is given zero) must be approximately normal. The skewness, kurtosis and K-S Lilliefors normality tests were carried out separately on the basis of the extent of disclosure scores of the two groups for each of the six years covered in this study and the results did not indicate extreme normality problems. Table 6.18 shows the descriptive statistics of the extent of disclosure for the high geared JIC.

**Table 6.18: Descriptive statistics of the extent of disclosure for high geared JIC over the six years**

	1995	1996	1997	1998	1999	2000
<b>Mean</b>	0.4507	0.4529	0.4646	0.4989	0.5262	0.5282
<b>Maximum</b>	0.6441	0.6441	0.6094	0.7462	0.8965	0.9138
<b>Minimum</b>	0.2712	0.2692	0.3279	0.3278	0.3333	0.1607
<b>Range</b>	0.3729	0.3749	0.2815	0.4184	0.5632	0.7531
<b>Standard Deviation</b>	0.0879	0.0952	0.0729	0.1001	0.1080	0.1471
<b>Standardised Kurt.</b>	0.0084	-0.3551	-0.5103	0.0629	4.3299	1.9332
<b>Standardised Skew.</b>	0.2891	0.1518	0.1350	0.2963	1.3578	0.0692
<b>K-S (Lilliefors)</b>	0.1090	0.1226	0.1074	0.0988	0.1326	0.1098

The table above shows that none of the high geared companies fully complied with the IAS requirements and the extent of disclosure scores of those companies varied within the range of 16% to 91% over the period 1995-2000. The proportion of the

companies whose the extent of disclosure scores were more than 50% was 32%, 30%, 35%, 56%, 67%, and 62% in 1995, 1996, 1997, 1998, 1999, and 2000, respectively. In addition, the mean score of the extent of disclosure is just over 45% in 1995 and 1996; 46% in 1997. However, the mean score of the extent of disclosure for those companies changed considerably to 50% in 1998; 53% in 1999 and 2000. In addition, the standard deviation within each year increased starting from 8% in the beginning of the period covered (1995) to almost 15% in the most recent year (2000).

For other companies their gearing is low, however, Table 6.19 shows the descriptive statistics of the extent of disclosure over the six years.

**Table 6.19: Descriptive statistics of the extent of disclosure for low geared over the six years**

	1995	1996	1997	1998	1999	2000
<b>Mean</b>	0.4534	0.4624	0.4751	0.5202	0.5582	0.5891
<b>Maximum</b>	0.589	0.5625	0.678	0.6949	0.807	0.8928
<b>Minimum</b>	0.2727	0.2727	0.2878	0.3485	0.3729	0.3548
<b>Range</b>	0.3163	0.2898	0.3902	0.3464	0.4341	0.538
<b>Standard Deviation</b>	0.0777	0.0741	0.0865	0.0921	0.1088	0.1170
<b>Standardised Kurt.</b>	-0.2746	0.1714	0.2893	-0.5063	-0.2010	1.0440
<b>Standardised Skew.</b>	-0.3607	-0.6541	0.1902	-0.0315	0.1952	0.4369
<b>K-S (Lilliefors)</b>	0.0852	0.0921	0.0903	0.1288	0.0874	0.1182

The table above shows that the proportion of the companies whose the extent of disclosure scores were more than 50% was 36%, 33%, 33%, 56%, 69%, and 81% in 1995, 1996, 1997, 1998, 1999, and 2000, respectively. In addition, the mean score of the extent of disclosure is just over 45%, 46% and 47% in 1995, 1996 and 1997 respectively. However, the mean score of the extent of disclosure for those



companies changed gradually to 52%, 56% and 60% in 1998, 1999 and 2000 respectively. It can be recognised that the mean score of the extent of disclosure for the most recent year (2000) is significantly different from the mean score in 1995 (the beginning of the period under consideration).

The two independent-sample t-test was run using SPSS for windows and in the output the SPSS produces two different versions of the t-test. One of them (Equal variance of t-test) assumes that the variance in the two populations are equal and the other (Unequal variance t-test) does not. In order to identify which one of these two tests is more appropriate to test the null hypothesis "*There is no association between structure and the extent of disclosure in the annual reports of JIC listed on Amman Stock Market and their shares traded during the period 1995-2000*", the Levene test for homogeneity of variance was undertaken. The Levene test was found not to be significant at the 0.05 level for each of the six years, suggesting that the equal variance assumption is approximately met. Thus, it was decided to use the equal variance t-test to test the above hypothesis. The t-test results together with descriptive statistics, Levene test and Mann Whitney U test as a non-parametric test for checking the parametric test results for each year are shown in Table 6.20.

Table 6.20: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Structure and the extent of disclosure

Year	Structure	No. of cases	Mean	Mean difference	Standard Deviation	Equal variance t-test results		Mann Whitney U		Levene's test for equality of variance	
						t value	2-tail sig.	Z	2-tailed P	F Ratio	F Prob.
1995	1	25	0.450	-0.00271	0.08	-0.11	0.90	-0.36	0.71	0.28	0.59
	0	25	0.453		0.07						
1996	1	23	0.453	-0.0095	0.09	-0.39	0.69	-0.62	0.53	1.70	0.19
	0	27	0.462		0.07						
1997	1	23	0.464	-0.01045	0.07	-0.45	0.65	-0.50	0.61	0.16	0.68
	0	27	0.475		0.08						
1998	1	25	0.499	-0.02132	0.10	-0.78	0.43	-0.78	0.43	0.04	0.83
	0	25	0.520		0.09						
1999	1	27	0.526	-0.03207	0.10	-1.04	0.30	-1.33	0.18	0.33	0.56
	0	23	0.558		0.10						



Table 6.20: Two independent-samples t-test, Mann Whitney U test, Levene test results and descriptive statistics – Structure and the extent of disclosure

Year	Structure	No. of cases	Mean	Mean difference	Standard Deviation	Equal variance t-test results		Mann Whitney U		Levene's test for equality of variance	
						t value	2-tail sig.	Z	2-tailed P	F Ratio	F Prob.
2000	1	24	0.528	-0.06087	0.14	-1.62	0.11	-1.54	0.12	0.99	0.32
	0	26	0.589		0.11						
1995-2000	1	147	0.488	-0.02	0.11	-1.67	0.09	-1.73	0.08	0.01	0.94
	0	153	0.508		0.10						

Table 6.20 shows that the mean of disclosure level for low geared JIC was greater than high geared JIC in each of the six years covered in this study. By looking at the mean difference between the two groups over the period 1995-2000 it can be recognised from the Table above that the difference was increasing (it was 0.0027 in 1995 to 0.061 in 2000).

As can be seen from Table 6.20 the observed two-tail significance from the equal variance t-test and Mann Whitney U was not significant at the 0.05 level for the total period under consideration. The test results accept the null hypothesis *“There is no association between structure and the extent of disclosure in the annual reports of JIC listed on ASE and their shares traded during the period 1995-2000”*. Therefore, it can be concluded that there was not an association between structure and the extent of disclosure for JIC over the period 1995-2000, each year separately and all the period together.

Concerning this unexpected result that capital structure (leverage) is generally insignificant, this may be due, in part, to the role that banks play in Jordan. Specifically, JIC leverage over the period 1995-2000 was often linked to bank loans. As a result, more leverage would imply greater monitoring. Given that banks usually have direct access to information, such leverage needs not to imply a greater need for extensive external annual report disclosure in compliance with IAS.

### 6.3.2 Multivariate Analysis

The multivariate analysis carried out in this study is multiple regression routines and stepwise regression technique. Multiple regression routines were conducted for each year using the extent of disclosure as the dependent and company size (as estimated by total assets), audit firm, industry type (based on five industry grouping), profitability and structure as independent variables. Such cross-sectional regressions allows us to identify not only if there is a significant association between selected company-specific factors and the extent of disclosure for each year, but also if such a relationship is consistent over time. On the other hand, stepwise regression was conducted in order to determine which independent variables were “best” in explaining extent of disclosure variation over the years 1995-2000.



One of the problems of undertaking any multiple regression analysis is that there may be multicollinearity between independent variables. The possible occurrence of multicollinearity was checked by testing the Person Correlation Coefficient suggested by Farrar (1967); Judge (1985); Street (2000); Wahlen (1994); Wallace (1994); Wallace (1995) which indicates that Person Correlation Coefficient was less than 0.80 confirming that a major multicollinearity problem was not observed among the independent variables in any of the six years covered in this study ‘see Appendix 4’. Moreover, stepwise regression has been employed for confirming such results regarding multicollinearity concern as suggested by Malone (1993); Neter (1989) which suggested that “harmful” multicollinearity did not pose a problem. As the variables were removed from the model, the coefficients of these variables, their standard errors, and the mean-square error remained relatively stable ‘see Appendix 4’.

A second problem is that since multiple regressions analysis is to be used, each category of the two independent variables audit firm and industry type requires dummy variables for every year covered in this study. Consequently, there are two dummy variables within the independent variable audit firm (JIC audited by one of big five international audit firms, otherwise). The five dummy variables within the independent variable industry type are: 1) Machinery and Metal industry; 2) Mining and Building Equipment; 3) Textile; 4) Food and other Services; and 5) Chemical. It should be noted that for each independent variable with dummies, one of the dummies is left out of the equation to avoid perfect collinearity ‘see Chapter Five-section 5.3.1.6’. Therefore, it has been decided to exclude the Food and other Services sector from the multiple regression equation for the variable industry type because of the abroad definition for the Jordanian companies included in this sector and for avoiding the perfect collinearity effect while for the variable audit firm, JIC audited by other than the big five left outside the equation (Johnston 1972, P.180).

In order to undertake multiple linear regression, the data must fulfil certain conditions (i.e. normality, homoscedasticity (equal variance), uncorrelated and linearity). An examination of the scatterplots of the regression standardised predicted values against the residuals for each year did not indicate any relationship.



Hence, the conditions of linearity and homoscedasticity were not violated (Kinnear 1995, P.174). Furthermore, an examination of Q-Q plot of residuals for each regression model indicates that the distribution of residuals is approximately normal. The standard skewness, kurtosis and K-S Lilliefors tests of normality of residuals also confirmed that the distributions of residuals are approximately normal.<sup>6</sup> Thus, the assumption of normality was also satisfied (Norusis 1995, Chapters 22 and 24). Finally, for checking that the residuals are uncorrelated, it is suggested by Maddala (2001, P.244) to employ Durbin-Watson statistic by using its upper bound as the true significant point. The inconclusive region treated as a rejection region (Gujarati 1995, P.422). The D-W statistic results, however, shows that the residuals are uncorrelated (DW around 2) for each year separately and also for the total period together 1995-2000 'see Table 6.20'.

The OLS regression models for each of the six years as well as for the total period together were conducted using the "enter all variables" routine. A summary of results is shown in Table 6.21.

As can be seen in Table 6.21, presented below, the results of the multiple regression routines for 1995, 1996, 1997, 1998, 1999, 2000 and the total period together (1995-2000) yielded F values of 1.3933, 1.2693, 1.7310, 2.7341, 4.4554, 2.5291, and 9.2307 respectively. The observed significance level (sig. F) was found to be higher than the 0.05 level for each of the years 1995, 1996 and 1997 which means that collectively five independent variables can not significantly explain the variation in the extent of disclosure at 0.05 significance level for those years. Thus, the results accept the main null hypothesis suggesting that there is no significant association between a number of company-specific factors and the extent of disclosure in the annual reports of JIC for each of the years mentioned above. For the years 1998, 1999 and for the total period together (1995-2000), however, the observed significance level (sig. F) was found to be less than the 0.05 significance level which means that collectively five independent variables significantly explain the variation in the extent of disclosure at 0.05 significance

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<sup>6</sup> For each of the six years, skewness and kurtosis were between +/- 1.96 ranges, and significance level of K-S Lilliefors was not significant at 0.05 level.



level for those periods. Thus, the results reject the main null hypothesis suggesting that there is significant association between a number of company-specific factors and the extent of disclosure in the annual reports of JIC for years 1998, 1999, 2000, which is the period representing post the mandatory action for implementing the IAS, and for the total period together (1995-2000).<sup>7</sup>

Beside the fact that the association between the extent of disclosure and the five variables (collectively) was found to be significant at the 0.05 level for the years 1998, 1999, 2000 and for the total period together (1995-2000) which represents the period post the mandatory action for complying the IAS forced by ASE law No.23 of 1997, Table 6.21 reveals that the degree of explanation by the independent variables selected was different over the period under consideration. In terms of  $R^2$ , the 1995 model explains 21.4 per cent of the variability in disclosure index, the 1996 model 19.8 per cent (the lowest), the 1997 model 25 per cent, the 1998 model 34.8 per cent, the 1999 model 46.5 per cent (the highest), the 2000 model 33 per cent and the total period model (1995-2000) 20 per cent. An interesting point to note is that while there was a slight decrease in the  $R^2$  in 1996 compared to 1995, there was a considerable increase in the years followed starting from 1998 and till the peak in 1999 when the  $R^2$  decreased again in the year 2000. A possible explanation for the shift in the explanatory power for the model used estimated by  $R^2$  is the macroeconomic effect for a country depending heavily on its neighbours 'see Chapter Two– Jordanian Economy Development', especially on Iraq which is the biggest trade partner for Jordan. Moreover, the region is suffering from a continuous conflict between Palestinian and Israelis because of the occupation for Palestinian lands, beside the continuous tension between Iraq and the USA and the UK since the Second Gulf War in 1991 and also between Iraq and Gulf Countries. The shifts in explanatory power of the independent variables over the years were also reported in similar previous longitudinal studies by Al-Modahki (1996); Amernic (1981); Soh (1996).

**Table 6.21: Results of multiple regression routines**

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<sup>7</sup> It can be recognised that the strongest rejection for the null hypothesis is for the total period together (1995-2000) where the sig. F is 0.0001.

	1995	1996	1997	1998	1999	2000	1995-2000
Multiple R	0.4623	0.4455	0.5024	0.5898	0.6819	0.5748	0.4498
R <sup>2</sup>	0.2137	0.1985	0.2524	0.3478	0.4650	0.3304	0.2024
Adjusted R <sup>2</sup>	0.0603	0.0421	0.1066	0.2206	0.3606	0.1997	0.1804
Standard Error	0.0796	0.0819	0.0755	0.0845	0.0867	0.1203	0.0967
Durbin-Watson	2.1002	1.9128	2.2247	2.2299	2.3918	2.4956	1.7868
F value	1.3933	1.2693	1.7310	2.7341	4.4554	2.5291	9.2307
Sig. F	0.2283	0.2858	0.1201	0.0163	0.0006	0.0245	0.0001

Table 6.21: Results of multiple regression routines

Variables	Year	Coefficient (b)	SE β	T	Sig. T
Company size	1995	0.0046	0.0122	0.3810	0.7051
	1996	0.0062	0.0125	0.5015	0.6186
	1997	0.0068	0.0108	0.6309	0.5315
	1998	0.0203	0.0122	1.6580	0.1049
	1999	0.0323	0.0114	2.8349	0.0070
	2000	0.0537	0.0161	3.3299	0.0018
	1995-2000	0.0213	0.0055	3.8722	0.0001
Audit firm	1995	0.0396	0.0284	1.3912	0.1716
	1996	0.0535	0.0284	1.8827	0.0668
	1997	0.0444	0.0259	1.7098	0.0948
	1998	0.0530	0.0318	1.6651	0.1035
	1999	0.0529	0.0305	1.7322	0.0907
	2000	0.0303	0.0444	0.6818	0.4991
	1995-2000	0.0450	0.0137	3.2725	0.0011
Machinery and Metal industry	1995	0.0086	0.0372	0.2326	0.8171
	1996	-0.0250	0.0390	-0.6418	0.5245



**Table 6.21: Results of multiple regression routines**

<b>Variables</b>	<b>Year</b>	<b>Coefficient (b)</b>	<b>SE <math>\beta</math></b>	<b>T</b>	<b>Sig. T</b>
	1997	-0.0306	0.0362	-0.8466	0.4021
	1998	-0.0280	0.0412	-0.6797	0.5004
	1999	-0.0162	0.0406	-0.4011	0.6904
	2000	-0.0148	0.0555	-0.2672	0.7906
	1995-2000	-0.0194	0.0184	-1.0532	0.2931
<b>Mining and Building Equipment</b>	1995	0.0629	0.0382	1.6426	0.1080
	1996	0.0165	0.0397	0.4173	0.6786
	1997	0.0335	0.0372	0.9013	0.3726
	1998	0.0323	0.0409	0.7906	0.4336
	1999	0.0334	0.0422	0.7914	0.4332
	2000	-0.0229	0.0587	-0.3905	0.6981
	1995-2000	0.0203	0.0188	1.0778	0.2819
<b>Textile</b>	1995	0.0167	0.0417	0.4012	0.6903
	1996	-0.0149	0.0449	-0.3329	0.7408
	1997	-0.0107	0.0405	-0.2652	0.7921
	1998	0.0043	0.0435	0.1004	0.9205
	1999	0.0025	0.0447	0.0576	0.9543
	2000	-0.0075	0.0637	-0.1188	0.9059
	1995-2000	-0.0014	0.0205	-0.0711	0.9433
<b>Chemical</b>	1995	0.0499	0.0341	1.4611	0.1515
	1996	0.0240	0.0372	0.6451	0.5224
	1997	0.0329	0.0319	1.0295	0.3092
	1998	0.0222	0.0357	0.6219	0.5373
	1999	0.0331	0.0378	0.8751	0.3865
	2000	0.0060	0.0512	0.1176	0.9069
	1995-2000	0.0276	0.0168	1.6411	0.1018
<b>Profitability</b>	1995	0.0689	0.1600	0.4308	0.6688
	1996	0.0060	0.1737	0.0348	0.9723
	1997	0.0370	0.1816	0.2038	0.8394

**Table 6.21: Results of multiple regression routines**

<b>Variables</b>	<b>Year</b>	<b>Coefficient (b)</b>	<b>SE <math>\beta</math></b>	<b>T</b>	<b>Sig. T</b>
	1998	0.0736	0.1784	0.4128	0.6818
	1999	0.2626	0.1453	1.8071	0.0780
	2000	0.1237	0.1564	0.7907	0.4336
	1995-2000	0.0925	0.0680	1.3594	0.1750
<b>Structure</b>	1995	-0.0642	0.1000	-0.6421	0.5243
	1996	-0.0639	0.0866	-0.7371	0.4652
	1997	-0.0256	0.0701	-0.3661	0.7161
	1998	-0.0479	0.0691	-0.6929	0.4922
	1999	0.0539	0.0616	0.8742	0.3870
	2000	-0.0668	0.0782	-0.8536	0.3982
	1995-2000	-0.0004	0.0308	-0.015	0.9880
<b>Constant</b>	1995	0.3423	0.1853	1.8470	0.0719
	1996	0.3507	0.1887	1.8579	0.0703
	1997	0.3420	0.1662	2.0572	0.0460
	1998	0.1679	0.1884	0.8913	0.3779
	1999	-0.0344	0.1796	-0.1916	0.8489
	2000	-0.2881	0.2578	-1.1174	0.2703
	1995-2000	0.1287	0.0856	1.5025	0.1340

An examination of regression statistics (i.e. T statistics and sig.), the independent company size variable shows that total assets size was significantly associated with the extent of disclosure at the 0.05 level only in 1999, 2000 and in the total period together (1995-2000). As the size variable has positive partial regression coefficient ( $\beta$ ) for each year, which means that the extent of disclosure increases with increasing assets size. Therefore, it can be concluded that there is a positive significant association between assets size and the extent of disclosure in the annual reports of JIC listed on ASE for 1999, 2000 and for the total period together (1995-2000). An important point to note is that unlike the univariate test results, which indicate that assets size was significantly associated with the extent of disclosure for 1997, 1998, 1999, 2000 and for the total period together (1995-2000), the regression model indicates significant association between the assets size and the extent of disclosure



for 1999, 2000 and for the total period (1995-2000). This may be partially due to minor multicollinearity effects among the independent variables.<sup>8</sup> Another possible reason for this is that the JIC concerned were classified into groups on the basis of the means of yearly total assets and the univariate t-test was undertaken on the basis of such grouping, whereas multiple regression were conducted by using the actual value of total assets. Such different results between the univariate and multivariate analysis was also reported by Al-Mulhem (1997); Dumontier (1998); Hossain (1994); Raffournier (1995); Singhvi (1971). For instance, in the study by Singhvi (1971), while the univariate chi square test revealed a significant relationship between assets size and the extent of disclosure, the regression coefficient for this variable was not significant. Thus, when the size variable was considered alone it was found to be significant related with the extent of disclosure for 1997, 1998, 1999, 2000 and for the total period (1995-2000), but the multivariate results indicate significant association only for 1999, 2000 and for the period (1995-2000). In developing countries, however, although a consistent significant positive association between company size and disclosure level has been reported, it is noted that a wide variation in results exists (Ahmed 1994; Chow 1987; Hossain 1994; Marston 1997; Tai 1990; Raghuram and Zingales 1995).

An important point to note is that, there was an increase in the  $\beta$ , t value and sig. T of the company size variable from one year to another, suggesting that there was an increase in explanatory power of the independent variable company size over the years. In other words, the higher the size of the JIC estimated by the total assets, the higher the extent of disclosure will be. Indeed, the univariate T-test results also indicate a similar trend (as discussed in section 6.3.1.1 differences in means of the extent of disclosure scores of large and small companies as well as the t values increased over the years suggesting that differences in the extent of disclosure between large and small companies have widen over the years).

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<sup>8</sup> In multiple regression, conclusions about particular independent variables depend on the relationship of that variable both to the independent variable and other independent variables in the model (Norusis 1995, P. 480).



Furthermore, an examination of T statistics and its observed significance level of the independent variable audit firm 'see Table 6.21' showed that, audit firm was not significantly associated with the extent of disclosure at the 0.05 level for each year concerned separately except for the total period together which showed a positive significant association. The results are not in line with the results of univariate tests.<sup>9</sup>

Such conflicting results reported also by Raffournier (1995) who used both approached univariate and multivariate analyses for testing the hypotheses. Since companies audited by one of the big five international audit firms were coded (1) and (0) otherwise when the dummy variable for audit firm was constructed, the later category which is left out of the equations is the yardstick against which the other (companies audited by one of the big six) is estimated. Since the  $\beta$  (partial regression coefficient) for the audit firm variable is positive for each of the years, it can be concluded that there is not significant positive higher disclosure in the first group when compared with the later group for each year concerned separately. For the total period together (1995-2000), however, it can be said that there is significantly higher disclosure in the first group (companies audited by one of the big five) when compared with the second group.

As far as industry type is concerned, the regression statistics indicated that none of the industry categories were significantly associated with the extent of disclosure at the 0.05 level not only for each year separately but also for the total period together (1995-2000) which consist in general with the univariate result 'see section 6.3.1.3'.

Conflicting results, however, for the profitability variable has been reported. An examination of T statistics and its observed significance level of the independent variable profitability 'see Table 6.21' showed that, profitability was not significantly associated with the extent of disclosure at the 0.05 level for each year concerned separately and also for the total period together except for the year 1999 which showed a positive significant association. Since the  $\beta$  (partial regression coefficient)

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<sup>9</sup> Unlike multiple regression, the univariate analysis indicates significant association between audit firm and the extent of disclosure for each year separately and for the total period together (1995-2000) except for the year 2000. For explanation see discussion mentioned before regarding the different in univariate and multivariate results for company size.



for the profitability variable is positive for each separately and for the total period together (1995-2000), it can be concluded that there is not significant positive between JIC profitability estimated by ROI and extent of disclosure in compliance with IAS. For the years 1997, 1998, 2000 and the total period together (1995-2000), however, univariate tests show significant association between profitability and the extent of disclosure whereas multivariate tests shows that the association was not significant. As with the size variable noted above, this may be due to minor multicollinearity effects between the independent variables and also because of the different approaches have been employed in univariate and multivariate tests for testing the association between profitability and the extent of disclosure (dummy variable approach in univariate tests and actual values in multivariate tests). Such conflicting results reported by also Raffournier (1995) who used both approached univariate and multivariate analyses for testing the hypotheses.

Like the univariate test results, the multiple regression results also not only did not show any significant association between the independent variable structure and the extent of disclosure at the 0.05 significance level in any of the years under consideration and also for the total period together (1995-2000) but also the association between capital structure and the extent of disclosure were negative since the  $\beta$  (partial regression coefficient) is negative. That is, a high geared company was of no negative significance in explaining the variability in the disclosure indexes in any of the six years covered in this study and also for the total period together ‘see section 6.3.1.5’.

For supporting the above results, stepwise regression technique was adopted and its results presented in Table 6.22 According to this method, the independent variable that is the most correlated with the dependent one is introduced first in the model. Subsequently, the other exogenous variables are included on the basis of the partial correlation coefficients.

**Table 6.22: Stepwise Regression Results 1995-2000**

Variable	Coefficient	Standard error	t ratio
Company Size	0.361	0.005	6.683

**Table 6.22: Stepwise Regression Results 1995-2000**

Variable	Coefficient	Standard error	t ratio
Audit Firm	0.212	0.013	3.715
Industry Type	0.125	0.015	2.357
R <sup>2</sup>	18.4	Adjusted R <sup>2</sup>	17.6
Standard error	0.097	Sum of squares	3.415

The value of the  $t$  statistic gives the decision rule about including or not a new variable in the model. A new variable is included in the model only when its  $t$  statistic is not smaller than a critical value, and the  $t$  statistics of the other variables that are already in the model do not diminish below that value after the inclusion of the new variable. Following that process, the stepwise regression gives satisfactory results for the variables; company size, audit firm and industry type. The coefficients of all these variables are significant at the 0.05 level. Together they explain only 18.4% of the total variance of the extent of disclosure in compliance with IAS over the all period 1995-2000. The addition of more variables does not improve the explanatory power of the model. Therefore, the “best” explanatory variables in explaining the extent of disclosure variation in compliance with IAS among JIC over the period 1995-2000 were company size and, to a lesser extent, audit firm and industry type confirming the conclusion reached by running the multiple regression routines.

### 6.3.3 Conclusion and Evaluation

This chapter has reported on the results of the investigation of the extent of disclosure in regard of IAS and of the impact of five company-specific factors on the extent of disclosure in the annual reports of 50 JIC listed on ASE for six years 1995 until 2000 and also for the total period together 1995-2000. The extent of disclosure was estimated by an indexes consisting of 137 items of information for the years 1995-1997, 197 items for the year 1998, 221 items for the year 1999, and 219 items for the year 2000. Over 76% of the observe overall increase in the extent of disclosure in compliance with IAS occurred during the years 1997 to 1999, which was the period that surrounds the year that the IAS required to be followed. Given



that there are indications as regards to the impact of the ASE law No.23 of 1997, the significant increase in the extent of disclosure in compliance with the IAS could be attributed mainly to the enactment of the ASE law No.23 of 1997 which required from all Jordanian companies listed on the financial market to comply the IAS in preparing their annual reports. Moreover, the implementation for the IAS started in the year 1998 but the significant change started in the extent of disclosure before that year. This results could be attributable to many factors such as Jordanian Association of Certified Public Accountants (JACPA) who decided in its Ordinance No.54 that IAS to be followed compulsory by the Jordanian public accountants during their course of examination of financial statements of the Jordanian Shareholding Companies (JSC) starting by December, 1990, pressure from companies liked with the international market to implement early the IAS, the absence of national accounting standards, researchers and experts recommendations of implementing the IAS. As a consequence, it can be seen that there was a drift up in the extent of disclosure regarding the mandatory action in 1998 for implementing the IAS and not a jump up as expected to be seen.

For testing whether a chosen company specific factors might explain the variation in the extent of disclosure, both univariate analysis (t-tests for variables company size, audit firm, profitability and structure and ANOVA for the variable industry type) and multivariate analysis (OLS multiple regression) were carried out not only for each of the six years but also for the total period together (1995-2000). It can be seen that there is a conflicting results using both tests (univariate and multivariate analyses). Such different results between the univariate and multivariate analyses were also reported by Al-Mulhem (1997); Dumontier (1998); Hossain (1994); Raffournier (1995); Singhvi (1971). The results are summarised in Table 6.23.

**Table 6.23: Summary of results**

Year	Type of analysis	Variables found to be significant				
		Company size	Audit firm	Industry type	Profitability	Structure
1995	Univariate	-	*	1.393362	-	-

Table 6.23: Summary of results

Year	Type of analysis	Variables found to be significant				
		Company size	Audit firm	Industry type	Profitability	Structure
	Multivariate Sig. 0.23 F =1.39 R <sup>2</sup> = 0.214	-	-	0.228301	-	-
1996	Univariate	-	*	-	-	-
	Multivariate Sig. 0.285 F = 1.27 R <sup>2</sup> = 0.198	-	-	-	-	-
1997	Univariate	*	*	-	-	-
	Multivariate Sig. 0.12 F = 1.73 R <sup>2</sup> = 0.25	-	-	-	-	-
1998	Univariate	*	*	-	-	-
	Multivariate Sig. 0.016 F = 2.73 R <sup>2</sup> = 0.348	-	-	-	-	-
1999	Univariate	*	*	-	*	-
	Multivariate Sig. 0.0006 F = 4.45 R <sup>2</sup> = 0.465	*	-	-	-	-
2000	Univariate	*	-	-	*	-
	Multivariate Sig. 0.024 F = 2.53	*	-	-	-	-



Table 6.23: Summary of results

Year	Type of analysis	Variables found to be significant				
		Company size	Audit firm	Industry type	Profitability	Structure
	$R^2 = 0.33$					
1995 - 2000	Univariate	*	*	*(Mining and Building Equipment Industry)	*	-
	Multivariate Sig. 0.0001 F = 9.23 $R^2 = 0.20$	*	*	-	-	-

\* = Significant at 0.05 level

- = Not significant at 0.05 level

The results of the multiple regression routines (sig. F), which revealed that collectively five independent variables significantly explain the variations in the extent of disclosure for the years 1998, 1999, 2000 and the total period together (1995-2000), reject the main hypothesis H02 concerning the years 1998, 1999, and 2000. For the years 1995, 1996 and 1997, however, the null hypothesis cannot be rejected.

As far as the individual variables are concerned, both univariate and multivariate analysis results revealed a significant positive relationship between asset size and the extent of disclosure for the years 1999, 2000 and for the total period together (1995-2000). However, the univariate and multivariate tests produced contradictory results for the size variable for 1997 and 1998. For these two years, the univariate t-test results for the size variable were statistically significant, whereas the multivariate OLS model revealed otherwise. The test results also revealed that the extent of

disclosure by large companies was significantly higher than for small companies and differences in the extent of disclosure between large and small companies widened over the years. Such a result could be attributed to the fact that probably larger firms may need even more funds from the capital markets in order to continue to expand their activities at a rate which might not be possible with internal sources only and hence these firms would be more likely to disclose more information so as to be able to obtain the needed funds at reasonable cost.

Audit firm was found to be significantly associated with the extent of disclosure for only the total period together (1995-2000) from both univariate and multivariate analysis. For each year separately, however, audit firm was found not to be significantly associated with the extent of disclosure multivariate OLS model (multiple regression) whereas it was found to be significantly associated according to the univariate t-tests except for the year 2000. Furthermore, industry type has been revealed to be significantly associated with the extent of disclosure for the total period together by only univariate analysis showing that Mining and Building Equipment Industry was found to disclose higher information than the other types of industries. For each year separately, however, both kind of analysis have not revealed any significant association. Moreover, profitability has revealed to be significantly associated with the extent of disclosure by only univariate analysis for the years 1999, 2000 and for the total period together. Finally, neither univariate nor multivariate analysis showed a significant association relationship between structure and the extent of disclosure not only in any of the six years covered in this study but also for the total period together.

An important point to note is that there were shifts in explanatory power of the independent variables over the years. For example, as indicated by the multiple regression results, the variation in the extent of disclosure that was explained collectively by the selected five variables in terms of  $R^2$  was about 0.214 in 1995, 0.198 in 1996, 0.25 in 1997, 0.348 in 1998, 0.465 in 1999, 0.33 in 2000 and 0.20 for the total period together (1995-2000). In addition, generally speaking, while company size was the most significant variable in 1998, 1999, 2000, and for the total period together (1995-2000), audit firm, profitability and industry type can be ranked as a second in the degree of significance for explaining the variation in the



extent of disclosure. The shifts in explanatory power of the independent variables over the years were also reported in similar previous longitudinal studies by Al-Modahki (1996); Amernic (1981); Soh (1996).

In conclusion, the results discussed in this chapter suggest that there are considerable variations in the extent of disclosure by JIC for each of the six years covered in this study. Company size and, to a lesser extent, audit firm and industry type appear to be important in explaining differences in the extent of annual reports disclosure between the JIC over the period 1995-2000. Hence, the above results tend to suggest that these four company-specific factors are amongst the factors affecting disclosure practices of JIC, a result supported by running stepwise regression technique.

Regarding the mandatory implementation for the IAS, however, it can be concluded that there was a drift up and not a jump up, as it is expected, around the mandatory date in the extent of disclosure level which could be explained by company-specific factors mentioned considered in this study. The drift up could be attributable not only to macroeconomic effect for a country depending heavily on its neighbours 'see Chapter Two— Jordanian Economy Development', but also to other factors such as Jordanian Association of Certified Public Accountants (JACPA) who decided in its Ordinance No.54 that IAS to be followed compulsory by the Jordanian public accountants during their course of examination of financial statements of the Jordanian Shareholding Companies (JSC) starting by December 1990 'see Chapter Three— section 3.5.1.1', pressure from companies liked with the international market to implement early the IAS, the absence and clearly defined national GAAP, researchers and experts recommendations of implementing the IAS.

#### **6.4 Summary**

This chapter presenting the results regarding the research hypothesis needs to be tested for achieving the study first and second objectives. As introduced in Chapter 1, the first objective needs to be achieved is that to test whether JIC listed on ASE and their shares traded during the period under consideration implemented fully the IAS. That is not only by measuring the extent of disclosure through a disclosure index contains the IAS requirements during the period 1995-2000 but also by testing

whether the change in the disclosure level, if it is founded, over the period were significant. More specifically, after the enforcement of implying the IAS in September 1998 by the ASE for Jordanian companies listed on the financial market were significant. The second objective is that if those JIC do not comply fully the IAS the research will attempt to explain the compliance level differences, if it is found, among those companies by looking at company-specific factors that have been chosen.

As long as the extent of disclosure in compliance with IAS is concern, although the adoption for the IAS started in the year 1998, the study found that the significant change in the extent of disclosure started before that year. As a consequence, it can be seen that there was a drift up in the extent of disclosure regarding the mandatory action in 1998 for implementing the IAS and not a jump up as it expected to be seen

The study has found that JIC are not fully adopting the IAS, which have been found also by other similar empirical studies (Street 1999; Street 2000; Street 2001). Chosen company specific factors (company size, audit firm, industry type, profitability and structure), therefore, were tested for possible explanation of the variation in the extent of disclosure in compliance with IAS. The results revealed that there are considerable variations in the extent of disclosure by JIC for each of the six years covered in this study. Company size and, to a lesser extent, audit firm and industry type appear to be the best explanatory variables in explaining differences in the extent of disclosure in compliance with IAS among JIC included in this study over the period 1995-2000, a result reached not only by running the multiple regression routines but also by running the stepwise regression technique. Hence, the above results tend to suggest that these three company-specific factors are amongst the most important factors affecting disclosure practices of JIC in compliance with IAS.

Concerning the adoption of the IAS, however, it can be concluded that there was a drift up and not a jump up, as it is expected, around the mandatory action date in the extent of disclosure which could be explained by company-specific factors mentioned above. Since  $R^2$  which explain the percentage of variation in the extent of



disclosure, therefore, ranged only between 46.5% and 19.8%, it might be argued that there are also macroeconomic factors influencing such extent (Chen et al. 1986; Fama and French 1989; Poon and Taylor 1991).

## CHAPTER SEVEN

### FINANCIAL CONSEQUENCES OF IAS ADOPTION

#### 7.1 Introduction

This chapter presents the results regarding the research hypotheses that need to be tested for achieving the third study objective concerning the financial consequences of adopting the IAS in Jordan. The objective is to assess the change in the systematic risk, unsystematic risk, risk premium, cost of equity capital, and share price volatility in relation with the IAS compliance in Jordan. As far as the cost of equity capital is concern, estimated by the expected return, however, clearly interpreting whether the cost of equity capital has changed, we have to control for those factors that may influence it, namely: business risk and financial risk. Therefore, the following sections will present the results, which help for testing those hypotheses and achieving the study third objective.

#### 7.2 The Change in Systematic Risk, Unsystematic Risk, Risk Premium, Cost of Equity Capital, and Share Price Volatility

As it is explained earlier ‘see Chapter Five- section 5.4.1’, the difference in means between the JIC average extent of disclosure actively traded group and JIC average extent of disclosure lowest actively traded group were employed using Paired-Samples t-test to see whether testing for the financial consequences of extent of disclosure in compliance with IAS on JIC actively traded group and JIC less actively traded groups could be generalised for the all 50 JIC selected in this study. The test showed that the difference in means between the two groups is not significant ( $t$  value = -1.08, 2-tailed sig. = 0.296) confirming the fact that investigating the financial consequences of adopting IAS could be generalised for all 50 JIC selected originally in this study and not just for those companies within the actively traded group and the less actively group.

This section presents the results of examinations carried out to seek answers to the following question (originally set out in Chapter 1) to explore the change in relation with the IAS compliance:



*To what extent JIC listed on ASE and their shares traded during the period under consideration their systematic risk, unsystematic risk, risk premium, cost of equity capital, share price volatility influenced by its level of disclosure in compliance with IAS.*

It is expected that after the mandatory action, the systematic, unsystematic risk, risk premium, cost of equity capital, and share price volatility has reduced.<sup>1</sup> Therefore, the null hypotheses to be tested are as follows:

*H03: There are no changes in the systematic risk regarding the adoption of the IAS for JIC listed on ASE and their shares traded over the period 1996-2000.*

*H04: There are no changes in the unsystematic risk regarding the adoption of the IAS for JIC listed on ASE and their shares traded over the period 1996-2000.*

*H05: There are no changes in the risk premium regarding the adoption of the IAS for JIC listed on ASE and their shares traded over the period 1996-2000.*

*H06: There are no changes in the cost of equity capital regarding the adoption of the IAS for JIC listed on ASE and their shares traded over the period 1996-2000.*

*H07: There are no changes in the share price volatility regarding the adoption of the IAS for JIC listed on ASE and their shares traded over the period 1996-2000.*

To be able to test the above hypotheses, betas, residuals variances, risk premiums, expected returns, and standard deviations for the selected JIC (i.e. actively traded and less actively traded groups) over the five years (1996-2000) as estimates for the systematic risk, unsystematic risk, risk premium, cost of equity capital, and share price volatility, respectively, were estimated by employing the *Market Model* and the *CAPM*.

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<sup>1</sup> It should be noted that investigating the influence of the increase in the extent of disclosure in compliance with IAS on systematic risk, unsystematic risk, risk premium, cost of equity capital, and share price volatility could be ambiguous. In this regards, it has been strongly argued that macroeconomic factors are among the factors influencing the expected return (Chen et al. 1986; Fama and French 1989; Poon and Taylor 1991).

The CAPM is only one of several models of asset pricing/cost of capital estimation. However it has been chosen here because it is the dominant model in the literature and is now widely used in the business community. Moreover there is much disagreement about the factors in the arbitrage pricing theory or APT model with some authors preferring macroeconomic factors while others prefer a modified CAPM with size and book to market value as additional factors to the market.

The CAPM can be written as:

$$E(r_e) = r_f + (E(r_m) - r_f) \beta_e$$

Where  $r_f$  = the risk free rate

$(E(r_m) - r_f)$  = the market risk premium

$\beta_e$  = beta, the systematic risk of the equity

In an integrated world economy it is unlikely that disclosure will influence the risk free rate. This will be established by world market trading. However it is conceivable that disclosure can reduce the risk premium either by affecting the market risk premium or the beta or both. There is much controversy over the market risk premium with historical evidence showing that on average it is approximately 5-7%. Some authors feel that this historical evidence or ex post evidence is not what investors expect or a measure as the ex ante market risk premium, and feel that equities are showing these risk premia as a result of “good luck”. However it has proved difficult to evaluate this measure for Jordan over the period concerned because the Jordanian economy has not issued sufficient Treasury Bills – there are no Treasury Bonds – to obtain a reliable measure of the risk free rate. Moreover, the stock market has been declining over some of the years. The results will be presented but since they do not constitute good evidence about the market risk premium in Jordan, the world risk premium as a proxy will be used, as will be explained in section 7.2.3. As a result the focus becomes beta for the impact of disclosure on the cost of equity capital within a CAPM framework.

### **7.2.1 The Change in Systematic Risk in Relation with the Extent of Disclosure in Compliance with IAS**



In this study, a total of 50 JIC weekly share price returns over the five years (1996, 1997, 1998, 1999, and 2000) were analysed. Such an analysis showed that a thin trading problem in ASE existed and therefore the 50 JIC has been classified into three groups, namely: actively traded, less actively traded, and the lowest actively traded 'see Appendices 5 and 6'. Since thin trading problems influence the estimated beta 'see Chapter Five– section 5.4.1', systematic risk estimated by beta was investigated only for those JIC actively traded and less actively traded over the period 1996-2000 by employing the *Market Model* for each year considered in this study. The beta for each JIC included in the study is shown in Appendix 7 for each year considered.

To run the market model for each company for each year requires a market index or equivalently the index of the market portfolio that is assumed to be held by investors. If the market portfolio was the portfolio of Jordanian equities then the market beta is by definition equal to one regardless of any disclosure aspects. The portfolio would have to be much wider than this if we wish to attempt to identify any influence of IAS on the equity betas of Jordanian companies. The portfolio that has been chosen here is the US dollar denominated FTSE All World Index. So the hypothesis being tested is whether the change in disclosure to IAS impacted upon the betas of Jordanian companies as assessed within a world index. Of course in using a world index measured in US dollars there is the possibility of foreign exchange risk being captured within the beta estimate. However in this case the Jordanian Diner is tied directly to the US dollar so preventing this effect influencing the results.

A descriptive analysis for estimated beta presented in Table 7.1 which shows that the systematic risk estimated by beta of companies varied within the range of 0.999 to -2.64 over the period 1996-2000.

<b>Table 7.1: Descriptive statistics of the systematic risk estimated by beta 1996-2000</b>					
	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>
<b>Mean</b>	0.24984	-0.0485	0.00789	0.11028	-0.1672
<b>Maximum</b>	1.08232	0.588	0.54365	0.85889	0.26193
<b>Minimum</b>	-1.5547	-0.681	-0.4557	-0.484	-1.1779

<b>Table 7.1: Descriptive statistics of the systematic risk estimated by beta 1996-2000</b>					
	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>
<b>Range</b>	2.637059	1.269041	0.99932	1.342844	1.439824
<b>Standard Deviation</b>	0.577	0.34962	0.22903	0.29829	0.33747
<b>Standardised Kurt.</b>	2.735047	-0.60943	0.211336	0.59844	2.068655
<b>Standardised Skew.</b>	-1.27417	0.181909	0.439511	0.317452	-1.34326
<b>K-S (Lilliefors)</b>	0.141735	0.072434	0.106774	0.099239	0.142869

Moreover, although the minimum scores for each year considered in this study were negative as it is shown in the above table, these values were not statistically significant at the 5% level of significant for the years 1996 and 1997, but it is significant for the years 1998, 1999, and 2000. The t values were -2.0011, -1.892, -2.434, -3.089 and -3.03 for the years 1996, 1997, 1998, 1999 and 2000 respectively. The significant values were 0.0512, 0.064, 0.018, 0.003 and 0.0038, respectively. In addition, the mean score of the systematic risk estimated by beta is 0.25 in 1996; -0.05 in 1997; 0.008 in 1998; 0.11 in 1999; and -0.17 in the most recent year (2000). These results are not surprising. Given the use of a world index the degree of correlation can be expected to be much lower than against a domestic index. We would not expect the average beta to be approximately one.

There are numerous negative betas. Where these are insignificantly different from zero it can be concluded in a statistical sense that the beta is zero. In an economic context it is difficult to conclude that the appropriate cost of equity is the risk free rate; there is just too much variation in the rates of return. Therefore it should be concluded that for both cases of significance and non-significance from zero that this evidence is not indicative of the future correlation between the company's rate of return and the FTSE All Share World Index. This time period has been a difficult one for the world economy with the index showing an overall negative growth and many periods of falling stock markets. It is unsurprising that the betas are negative. For the purposes of this objective of the thesis these betas will be



used as the benchmark for assessing the impact of disclosure because all that is required is the relative change.

In brief, the above analysis indicates that the actively traded and the less actively traded JIC groups systematic risk decreased over the period 1996-2000 except for the year 1999 when it increased, which could be as a result of macroeconomic factors indicated previously. For the most recent year, however, it can be seen that the systematic risk was the lowest among the other years.

The following section will test the significance of the changes in the systematic risk estimated by beta over the period 1996-2000 across actively traded and the less actively traded JIC groups.

### **Test of Hypothesis 3 (H03)**

In order to test H03 “*there are no changes in the systematic risk of JIC listed on ASE and their shares traded over the period 1996-2000*” across all companies within both groups: actively traded and less actively traded, the systematic risk estimated by beta values were grouped into five pairs (1996-1997; 1997-1998; 1998-1999, 1999-2000, and 1996-2000), and the parametric paired t-test was run.<sup>2</sup> To be able to use the parametric t statistic, the assumption that the sample is drawn from a normally distributed population must be satisfied. As indicated by the Kurtosis and Skewness statistics and confirmed by the K-S Lilliefors tests of normality, the systematic risk estimated by beta scores for the total period appear to be normally distributed having a value for the normality tests between the ranges of +/-1.96 ‘see Table 7.1’. The test results are summarised in Table 7.2.

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<sup>2</sup> The Wilcoxon Matched-Pairs Signed-Ranks test was also run and its results are presented together with the t-test results.

Table 7.2: Summary of the results of the Paired-Samples t-test and the Wilcoxon Matched-Pairs Signed-Ranks Test on beta values 1996-2000									
Paired-samples t-test				Wilcoxon test					
Differences between:	Paired diff. Mean	SD	t value	2-tail sig.	Accept H01	Z	2-tailed P	Accept H01	
1996-1997	0.287601	0.729482	1.806694	0.08588	Yes	-2.3461	0.018969	Yes	
1997-1998	-0.03004	0.351163	-0.39203	0.699183	Yes	-0.0173	0.986134	Yes	
1998-1999	-0.0818	0.368684	-1.10932	0.278283	Yes	-0.955	0.339479	Yes	
1999-2000	0.276738	0.449074	3.081205	0.005113*	No	-2.7579	0.0058168*	No	
1996-2000	0.413174	0.685183	3.074772	0.005042*	No	-3.1112	0.001863*	No	

\* = Significant at 0.005 level



As can be seen from the above table, the null hypothesis “*there are no changes in the systematic risk estimated by beta of JIC listed on ASE and their shares traded over the period 1996-2000*” was accepted for the pairs 1996-1997, 1997-1998, and 1998-1999 from both tests; t-test and Wilcoxon test while rejected for the pairs 1999-2000 and 1996-2000 from both tests. Exploring the systematic risk changes over the period 1996-2000, the above results show that the sampled companies’ systematic risk was not decreasing significantly over the period 1996-1999 when there was a significant decrease in the year 2000 comparing with the year 1999. In addition, clearly it can be seen that over all the systematic risk decreased significantly over the total period 1996-2000 since the null hypothesis were rejected for the pair 1996-2000. An important point to note, therefore, is that the observed significant decrease in the systematic risk spread over the total period under consideration suggesting that the decrease were ‘*cumulative*’.

In conclusion, it can be said that, overall, the increase in the extent of disclosure in compliance with IAS has influenced the systematic risk estimated by beta for all 50 selected JIC listed on ASE over the period 1996-2000. Such an influence was not significant between each pair of years, however, could be a reflection of the gradual increase in the extent of disclosure in compliance with IAS itself since such extent reached its peak by only 56% in average in the most recent year (2000) ‘see Chapter Six- Table 6.1’. For supporting such argument, ANOVA and General Linear Model (GLM) have been employed. Both tests show that the difference among means over the period 1996-2000 is significant (F Ratio = 4.683 and F Prob. = 0.0015). For showing between which pair of years the mean difference is significant, however, Tukey HSD has been used and its results summarised in Table 7.3.

<b>Table 7.3: Summary for the mean difference in the systematic risk between each pair of years</b>				
	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>
<b>1996</b>	0.298	0.242	0.139	0.417*
<b>1997</b>		-0.056	-0.158	0.118
<b>1998</b>			-0.102	0.175
<b>1999</b>				0.277

<b>Table 7.3: Summary for the mean difference in the systematic risk between each pair of years</b>				
	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>

\* = The mean difference is significant at 0.005 level

As can be seen from the above table, the null hypothesis “*there are no changes in the systematic risk of JIC listed on ASE and their shares traded over the period 1996-2000*” was rejected for the pairs 1996-2000 confirming the above conclusion concerning the cumulative impact of the extent of disclosure on systematic risk for selected JIC listed on ASE.

### **7.2.2 The Change in Unsystematic Risk in Relation with the Extent of Disclosure in Compliance with IAS**

Unsystematic risk were explored for only JIC which were actively traded over the total period 1996-2000 since investigating this issue required the residuals variance (i.e. estimated by employing the Market Model) for each selected company over the total period concerned ‘see Appendix 8’. A total of 17 JIC weekly logarithm share price returns over the five years (1996, 1997, 1998, 1999, and 2000) were analysed. Residuals variance for each JIC included in the study is shown in Appendix 8 for each year.

A descriptive analysis for residuals variance presented in Table 7.4 which shows that the unsystematic risk estimated by residuals variance of selected JIC varied within the range of 0.00288 to 0.0071 over the period 1996-2000.

<b>Table 7.4: Descriptive statistics of the unsystematic risk estimated by residuals variance 1996-2000</b>					
	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>
<b>Mean</b>	0.002027	0.001452	0.002321	0.002941	0.002176
<b>Maximum</b>	0.003914	0.004146	0.005481	0.007505	0.006056
<b>Minimum</b>	0.001035	0.00032	0.000458	0.00044	0.000482
<b>Range</b>	0.002879	0.003826	0.005022	0.007065	0.005575



<b>Table 7.4: Descriptive statistics of the unsystematic risk estimated by residuals variance 1996-2000</b>					
	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>
<b>Standard Deviation</b>	0.000857	0.000914	0.001274	0.001933	0.001494

Moreover, the minimum score for the earliest year (1996) was higher than the minimum scores for the rest of the years. Whereas, the maximum score was lowest for the year 1996 compared with the rest of years suggesting that the residuals variance standard deviation in that year is lower than the rest. Overall, however, it can be seen that differences in residuals variance scores over the period 1996-2000 is not dramatic in terms of factors presented in the table above.

In brief, the above analysis indicates that the actively traded JIC unsystematic risk stayed in general fixed over the period 1996-2000.

The following section will test the significance of the changes in the unsystematic risk estimated by residuals variance over the period 1996-2000 across actively traded JIC group.

#### **Test of Hypothesis 4 (H04)**

In order to test H04 “*there are no changes in the unsystematic risk of JIC listed on ASE and their shares traded over the period 1996-2000*” across all JIC actively traded, the unsystematic risk estimated by residuals variance for the period  $t-1$  for each company is divided by the residuals variance for the period  $t$  to test whether such ratio is significantly different from one. The results are summarised in Table 7.5.

Table 7.5: Summary of the results of Residuals Variance Ratio 1996-2000							
Company	Residuals 1996 / Variance 1997	Residuals 1997 / Variance 1998	Residuals 1998 / Variance 1999	Residuals 1999 / Variance 2000	Residuals 1996 / Variance 2000		
Arab Aluminium Industry / ARAL	1.28116955	0.580272	2.810238	0.3545962	0.7408248		
National Steel Industry	1.85498568	0.250859	1.096237	1.1611613	0.592334		
The Jordan Pipes Manufacturing	1.73792161	1.300275	0.522194	0.5928132	0.6995444		
National Cable and Wire Manufacturing	0.33748467	3.398509	0.16253	3.075316	0.5732778		
Jordan New Cable Company	4.15745311*	0.34598	0.590906	2.6989387	2.2939816		
National Industries	2.05157348	0.547076	2.65795	0.7699821	2.2970087		
Industrial Resources Co.	1.03322548	0.504774	0.584899	2.2114538	0.6746067		
Woollen Industries	1.64491281	0.251887	2.892654	3.9346967	4.7158092*		
Jordan Rock Wool	1.07639686	0.605241	0.542074	1.8133047	0.6403687		



Table 7.5: Summary of the results of Residuals Variance Ratio 1996-2000

Company	Residuals 1996 / Variance 1997	Residuals 1997 / Variance 1998	Residuals 1998 / Variance 1999	Residuals 1999 / Variance 2000	Residuals 1996 / Variance 2000
Industry					
EL-ZAY Ready Wear Manufacturing	2.47050907	1.271593	1.916474	0.3642041	2.1927156
National Textile and Plastic Industries	3.0531751	0.272705	0.911809	2.7131284	2.0597686
Universal Industries	1.1716055	0.270899	0.735358	3.6617791	0.8546327
Arab Investment and International Trade	5.27860726*	0.28896	2.185455	0.8189309	2.7298954
The Industrial, Commercial and Agricultural	1.31204585	1.577223	0.726609	0.4390063	0.6601055
Intermediate Petrochemicals Industries	3.23458491	0.404444	0.564709	1.0203085	0.753761

Table 7.5: Summary of the results of Residuals Variance Ratio 1996-2000							
Company	Residuals 1996 / Variance 1997	Residuals 1997 / Variance 1998	Residuals 1998 / Variance 1999	Residuals 1999 / Variance 2000	Residuals 1996 / Variance 2000	Variance	
Jordan Chemicals	Sulpha 0.28945346	1.300224	0.390412	2.1299648	0.3129626		
Union Chemical Vegetable Industries	and Oil 1.31131307	0.607449	1.013125	0.6995421	0.5645382		

\* = Significant at 0.005 level



As can be seen from the above table, the null hypothesis “*there are no changes in the unsystematic risk estimated by residuals variance of JIC listed on ASE and their shares traded over the period 1996-2000*” was accepted for the selected companies except for specific companies in specific years, namely: Jordan New Cable Company and Arab Investment and International Trade in 1996/1997, and Woollen Industries in 1996/2000.

Overall, as residuals variance ratios were less than the *F critical* value (i.e. 4.00) ‘see Chapter Five– section 5.4.1.1’, such results show that the sampled companies’ unsystematic risk was not decreasing significantly over the period 1996-2000 suggesting that the impact of IAS adoption might be influenced only the systematic risk of JIC listed on ASE over the period 1996-2000 and not the unsystematic risk. A possible explanation is that since JIC were not complying fully with the IAS, the reduction in these companies’ unsystematic risk was not significant.

### 7.2.3 The Change in Risk Premium in Relation with the Extent of Disclosure in Compliance with IAS

The study extended its investigation to test whether the adoption of IAS has reduced the yearly risk premium in the ASE. Risk premium, therefore, has been estimated for each year (1996, 1997, 1998, 1999, and 2000) by deducting the yearly risk free rate on Treasury Bills provided by Jordanian Central Bank from the yearly logarithm market return (i.e. ASE Index Return) ‘see Appendix 9’. Table 7.6 shows the yearly risk free rate, market return, and premium risk over the period 1996-2000.

<b>Table 7.6: Risk Free Rate, Market Return, and Risk Premium 1996-2000</b>			
<b>Year</b>	<b>Rf</b>	<b>Rm</b>	<b>Risk Premium</b>
<b>1996</b>	0.0887	-0.0071	-0.0958
<b>1997</b>	0.0800	0.0978	0.0178
<b>1998</b>	0.0848	0.0053	-0.0796
<b>1999</b>	0.0809	-0.0165	-0.0974
<b>2000</b>	0.0608	-0.2294	-0.2901

From the above table, it can be seen that risk premiums are not realistic values on the long-run since the ASE General Index was failing over the period 1996-2000 and Jordanian economy did not issue sufficient Treasury Bills – There were no Treasury Bonds - to obtain a reliable measure of the risk free rate, which end up with these negative values. Consequently, to test H05 “*there are no changes in the risk premium of JIC listed on ASE and their shares traded over the period 1996-2000*” is not possible in such circumstances.<sup>3</sup> In order to avoid the problem of using negative risk premium in estimating the expected return as a proxy for the cost of equity capital in the following section, therefore, risk premium over the last ten years for the *All World* was in average 5% will be employed (Dimson et al. 2002, P.167).

#### 7.2.4 The Change in Cost of Equity Capital as a Result of Disclosure in Compliance with IAS

As is mentioned earlier there is a thin trading problem in the ASE which is influencing the estimated beta and consequently the estimated expected return. As a result, the cost of equity capital was investigated only for those JIC actively traded and less actively traded over the period 1996-2000 by employing the *CAPM* for each year considered in this study. In addition, as noted previously, since the ASE General Index was failing over the period 1996-2000 and the risk premiums were negative values, the estimated risk premium for the *All World* is employed in order to estimate the expected return for each JIC included in the study ‘see Appendix 10’.

Table 7.7 shows the descriptive statistics of the cost of equity capital estimated by the expected return by employing the following CAPM formula:

$$E(r_e) = r_f + (E(r_m) - r_f) \beta_e$$

<p><b>Table 7.7: Descriptive statistics of the cost of equity capital estimated by expected return 1996-2000</b></p>
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<sup>3</sup> Political and economic conditions have varied over the years. It is recommended, therefore, using the longest possible data series in calculating the equity risk premium since this is more likely to encapsulate unusual events that may have current or future relevance (Dimson et al. 2002, P.168).



	1996	1997	1998	1999	2000
<b>Mean</b>	0.103962	0.078524	0.085893	0.08448	0.052464
<b>Maximum</b>	0.143	0.109	0.112	0.109	0.074
<b>Minimum</b>	0.05	0.054	0.062	0.057	0.002
<b>Range</b>	0.093	0.055	0.05	0.052	0.072
<b>Standard Deviation</b>	0.021269	0.016293	0.0116566	0.011822	0.016897
<b>Standardised Kurt.</b>	0.732652	-0.27662	-0.013938	0.263632	2.048845
<b>Standardised Skew.</b>	-0.32125	0.500363	0.2831605	-0.20106	-1.34617
<b>K-S (Lilliefors)</b>	0.124377	0.108897	0.0924561	0.1044	0.145812*

\* = significant at 0.005 level.

The table above shows that the cost of equity capital estimated by expected return of companies varied within the range of 0.05 to 0.093 over the period 1996-2000. In addition, the mean score of the cost of equity capital is 0.1, 0.08, 0.09, 0.08, and 0.05 for the years 1996, 1997, 1998, 1999 and 2000.

As it can be seen from the above table, the cost of equity capital measure by expected return decreased over the period 1996-1997 and then slightly increased over the period 1997-1999 when it decreased again over the period 1999-2000. Although such a move could be contributed to macroeconomic factors mentioned earlier over the years 1998-1999, the increase in the level of disclosure in compliance with the IAS could be seen as another factor which influenced such cost, more specifically in the most recent year (2000) when such extent reached the highest level comparing with the years before.

The following section will test the significance of the changes in the cost of equity capital estimated by expected return over the period 1996-2000 across JIC actively traded and less actively traded groups.

### **Test of Hypothesis 6 (H06)**

In order to test H06 *“there are no changes in the cost of equity capital of JIC*

*listed on ASE and their shares traded over the period 1996-2000*" across all JIC actively traded and less actively traded, the cost of equity capital estimated by expected return were grouped into five pairs (1996-1997; 1997-1998; 1998-1999, and 1996-2000, and the parametric paired t-test was run.<sup>4</sup> To be able to use the parametric t statistic, the assumption that the sample is drawn from a normally distributed population must be satisfied. As indicated by the Kurtosis and Skewness statistics and confirmed by the K-S Lilliefors tests of normality, the cost of equity capital scores for the total period appear to be normally distributed 'see Table 7.7' having a value for the normality tests between the ranges of +/- 1.96. The test results are summarised in Table 7.8.

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<sup>4</sup> The Wilcoxon Matched-Pairs Signed-Ranks test was also run and its results are presented together with the t-test results, since it is not required the data to be normally distributed.



Table 7.8: Summary of the results of the Paired-Samples t-test and the Wilcoxon Matched-Pairs Signed-Ranks Test on expected return values 1996-2000									
Paired-samples t-test				Wilcoxon test					
Differences between:	Paired Mean	diff.	SD	t value	2-tail sig.	Accept H01	Z	2-tailed P	Accept H01
1996-1997	0.025714		0.027494	4.285957	0.000361*	No	-3.2850	0.001019*	No
1997-1998	-0.00633		0.016194	-1.79225	0.088235	Yes	-1.93	0.053598	Yes
1998-1999	0.00256		0.016368	0.781996	0.441864	Yes	-0.9435	0.345416	Yes
1999-2000	0.032		0.022944	6.97357	0.0001*	No	-4.1844	0.0001*	No
1996-2000	0.05131		0.02509	10.4279	0.0001*	No	-4.432	0.0001*	No

\* = Significant at 0.005 level

As it can be seen from the above table, the null hypothesis “*there are no changes in the cost of equity capital estimated by expected return of JIC listed on ASE and their shares traded over the period 1996-2000*” was accepted for the pairs 1997-1998, and 1998-1999 from both tests; t-test and Wilcoxon test while rejected for the pairs 1996-1997, 1999-2000 and 1996-2000 from both tests. As the changes in the cost of equity capital, in means, were decreasing over the period 1996-1997, slightly increased over the period 1997-1998 when it decreased again over the period 1999-2000. Table 7.8 shows that the sampled companies’ cost of equity capital was not decreasing significantly over the period 1996-1997 neither increasing significantly over the period 1997-1999 when there was a significant decrease in the year 2000 comparing with the year 1999. In addition, clearly it can be seen that, overall, the cost of equity capital decreased significantly over the total period 1996-2000 since the null hypothesis were rejected for the pair 1996-2000. An important point to note, therefore, is that the observed significant decrease in the cost of equity capital spread over the total period under consideration suggesting that the decrease were ‘*cumulative*’. The same result has been reported for the systematic risk as well.

In conclusion, it can be said that, overall, the increase in the extent of disclosure in compliance with IAS has influenced the cost of equity capital estimated by expected return for all 50 selected JIC listed on ASE over the period 1996-2000. Such an influence was not significant between each pair of years, however, could be a reflection of the gradual increase in the extent of disclosure in compliance with IAS itself since such extent reached its peak by only 56% in average in the most recent year (2000) ‘see Chapter Six- Table 6.1’. For supporting such argument, ANOVA and General Linear Model (GLM) have been employed. Both tests show that the difference among means over the period 1996-2000 is significant (F Ratio = 36.88 and F Prob. = 0.0001). For showing between which pair of years the mean difference is significant, however, Tukey HSD has been used and its results summarised in Table 7.9.

Table 7.9: Summary for the mean difference in the cost of equity capital 1996-2000				
	1997	1998	1999	2000



**Table 7.9: Summary for the mean difference in the cost of equity capital 1996-2000**

	1997	1998	1999	2000
1996	0.025438*	0.018069*	0.019482*	0.051497*
1997		-0.00737	-0.00596	0.02606*
1998			0.001413	0.033429*
1999				0.032016*

\* = The mean difference is significant at 0.005 level

As it can be seen from the above table, the null hypothesis “*there are no changes in the cost of equity capital of JIC listed on ASE and their shares traded over the period 1996-2000*” was rejected for any pair of years the year 1996 or 2000 is included confirming the fact that the means difference between the most recent year (2000) and the rest of the years is significantly different and also the same for the difference in means between the year 1996 and the rest of the years considered. Such results confirming the above conclusion concerning the impact of the extent of disclosure on cost of equity capital for selected JIC listed on ASE.

#### **7.2.4.1 The Extent of Disclosure in Compliance with the IAS, Financial Risk, and Business Risk and the Change in the Cost of Equity Capital**

We have seen that the change in disclosure has had a cumulative effect upon the beta of the company and hence the cost of equity capital over the period 1996 – 2000. However it is conceivable that the cost of equity capital has been influenced by other changes taking place over this period. In particular the firms may have been changing their business risk or their financial risk and this need to be controlled for in assessing the impact of the change in disclosure. It is also conceivable that the firms have responded to the change in disclosure by changing their business and financial risks. These effects were introduced in Chapter 1, where the third objective of this study was to assess the impact of disclosure in compliance with IAS, the business risk and the financial risk of the JIC listed on the ASE. In order to accomplish such an objective the study looks at the association between these three variables and the cost of equity capital for the five years 1996 to 2000.

Business risk and financial risk factors (independent variables) were selected on the basis of theoretical arguments and literature review whereas the extent of disclosure in compliance with the IAS has been considered as a third factor (independent variable) which, at the best knowledge of the researcher, its relationship with the cost of equity capital has not been explored experimentally in developing countries. As it is explained in Chapter Five - Research Methodology and Hypotheses, the cost of equity capital (dependent variable) was estimated by employing the *Market Model* and the *CAPM*.

The possible link between the selected three factors and the cost of equity capital were discussed and accordingly the following hypothesis: "*H07: There is no association between the cost of equity capital and the extent of disclosure, the financial risk, and the business risk for JIC listed on ASE and their shares traded during the total period 1996-2000*" formulated in Chapter Five – Research Methodology and Hypotheses will be tested. The following section reports the results of the multivariate tests that were conducted to examine the association between the three variables and the cost of equity capital.

#### **7.2.4.2 Multivariate Analysis**

The multivariate analysis carried out in this study is multiple regression. Multiple regression routines were conducted for each year using the cost of equity capital as the dependent and business risk estimated by logarithm net sales revenue, financial risk estimated by leverage ratio and the extent of disclosure in compliance with the IAS as independent variables. Such cross-sectional regressions allows us to identify not only if there is a significant association between selected factors and the cost of equity capital for each year started from 1996 until 2000, but also if such a relationship is consistent over time.

One of the problems of undertaking any multiple regression analysis is that there may be multicollinearity between the independent variables. The possible occurrence of multicollinearity was checked by testing Pearson Correlation Coefficient as suggested by Farrar and Glauber (1967); Judge et al. (1985); Street and Bryant (2000); Wahlen (1994); Wallace and Naser (1995); Wallace et al. (1994) which



indicates that the Pearson Correlation Coefficient was less than 0.80 confirming that a major multicollinearity problem was not observed among the independent variables in any of the five years covered in this study 'see Appendix 11'.

In order to undertake multiple linear regression, the data must fulfil certain conditions (i.e. normality, homoscedasticity (equal variance) and linearity). An examination of the scatterplots of the regression standardised predicted values against the residuals for each year did not indicate any relationship. Hence, the conditions of linearity and homoscedasticity were not violated (Kinnear and Gray 1995, P.174). Furthermore, an examination of Q-Q plot of residuals for each regression model indicates that the distribution of residuals is approximately normal. The standard skewness, kurtosis and K-S Lilliefors tests of normality of residuals also confirmed that the distributions of residuals are approximately normal.<sup>5</sup> Thus, the assumption of normality was also satisfied (Norusis 1995, Chapters 22 and 24). Finally, for checking that the residuals are uncorrelated, it is suggested by Maddala (2001, P.244) to employ Durbin-Watson statistic by using its upper bound (dU) as the true significant point treating the inconclusive region as a rejection region 'see section 5.3.1.6 – Footnote 14'. The D-W statistic results, however, shows that the residuals were not autocorrelated except for the year 2000 and the total period 1996-2000 'see Table 7.10'. referring to the DW tables with  $k=4$  which is the number of variables in the model and  $n=250$  which is the number of observation for the 5% significant level, it can be seen that  $dU = 1,715$  (Gujarati 1995, P.820). since the observed dU for the year 2000 and for the total period 1996-2000 were less than dU, the null hypothesis ( $\rho = 0$ ) has to be rejected at the 5% level suggesting that there is an evidence of positive autocorrelation among residuals for the year 2000 and for the total period 1996-2000 (Gujarati 1995, P.422). In such a situation the residual variance  $\hat{\sigma}^2$  is likely to underestimate the true  $\sigma^2$  and as a result  $R^2$  will be overestimated. Even if  $\sigma^2$  is not underestimated,  $\text{var}(\beta')$  may underestimate  $\text{var}(\beta')$  AR1 its variance under first-order autocorrelation. Therefore, the usual t and F tests significant are no longer valid, and if applied, are likely to give seriously misleading conclusions about the statistical significance of the estimated regression coefficient (Gujarati 1995, P.411). As suggested by Gujarati (1995, P.428), however, concerning the existence of the autocorrelation problem ( $\rho \neq 0$ ) is to apply the first-

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<sup>5</sup> For each of the five years, skewness and kurtosis were between +/-1.96 range, and significance level of K-S Lilliefors were not significant at 0.05 level.



difference method for each variable included in the model (take the  $\Delta$  for dependent and each explanatory variables). It has been found that applying the first difference for each variable included in this study for only the year 2000 data improved the DW values by being around 2 'see Table 7.10.

The OLS regression models for each of the five years were conducted using the "*enter all variables*" routine. A summary of results is shown in Table 7.10.

As can be seen in Table 7.10, presented below, the results of the multiple regression routines for 1996, 1997, 1998, 1999, 2000 and 1996-2000 yielded F values of 0.645, 0.236, 0.223, 0.737, 1.087, and 76.728, respectively. The observed significance level (sig. F) was found to be less than the 0.05 significance level for only the total period 1996-2000 which means that collectively the three independent variables can significantly explain the variation in the extent of disclosure at 5% significance level for the period 1996-2000. Thus, the results reject the main null hypothesis suggesting that there is significant association between the selected factors and the cost of equity capital of JIC for only the total period 1996-2000 and accepting the null hypothesis for each year separately suggesting that there is no association between the selected factors and the cost of equity capital.

Beside the fact that the association between the cost of equity capital and the three variables (collectively) was to be significant at the 0.05 level for only the total period 1996-2000, Table 7.10 reveals that the degree of explanation by the independent variables selected was different over the period under consideration. In terms of  $R^2$ , the 1996 model explains 8 per cent of the variability in cost of equity capital, the 1997 model 4 per cent, the 1998 model 3 per cent, the 1999 model 9 per cent, the 2000 model 11 per cent and the total period model (1995-2000) 65 per cent.<sup>6</sup> An interesting point to note, therefore, is that while low per cent of the cost of equity capital variability could be explain in each year separately, such per cent increasing dramatically when the data over the total period 1996-2000 is used. The explanatory power for the included factors is quite low for each year separately, moreover,

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<sup>6</sup> Stepwise regression technique, as its results presented in Appendix 11 for the total period together 1996-2000, shows that business risk has the most explanatory power in explaining the cost of equity capital fluctuation and, to less extent, the extent of disclosure in compliance with IAS. In terms of  $R^2$ , these variables explain 65% of the cost of equity capital fluctuation.



suggesting the fact that there are other factors might be on the macroeconomic level should be considered in future research for explaining such variation. Such an argument supported by the *constant* factor being significant over each year separately and also over the total period 1996-2000 except for the year 2000 ‘see Table 7.10’.

Table 7.10: Results of multiple regression routines

	1996	1997	1998	1999	2000	1996-2000
Multiple R						
R Square	0.284298	0.20047	0.168114	0.308659	0.345979	0.807304
Adjusted R Square	0.080826	0.040019	0.028262	0.095271	0.119702	0.65174
Standard Error	-0.04452	-0.12939	-0.0932	-0.03398	0.009664	0.643246
Durbin-Watson before using the first-difference method	0.021737	0.017315	0.012188	0.012021	0.021965	0.024203
Durbin-Watson after using the first-difference method	1.87342	2.11582	1.76282	2.00936	1.36728	1.02317
F value	0.644841	0.236226	0.232675	0.73712	1.087827	76.72806
Sig. F	0.594438	0.869866	0.872704	0.541628	0.373217	0.000001

Table 7.10: Results of multiple regression routines

Variables	Years	Coefficient (β)	SE β	T	Sig. T
Extent of Disclosure	1996	-0.043844	0.05592	-0.784046	0.441373
	1997	-0.01211	0.051002	-0.23744	0.815153
	1998	0.00665	0.025765	0.25829	0.798384



Table 7.10: Results of multiple regression routines

Variables	Years	Coefficient ( $\beta$ )	SE $\beta$	T	Sig. T
	1999	0.009	0.026099	0.34494	0.733571
	2000	-0.011009	0.024439	-0.450455	0.65425
	1996-2000	-0.042538	0.016647	-2.555392	0.011825
Business Risk	1996	-0.00146	0.001427	-1.02526	0.316382
	1997	-0.00072	0.001152	-0.62099	0.542842
	1998	0.000608	0.000765	0.795006	0.434402
	1999	0.000156	0.001968	0.079303	0.937543
	2000	0.001546	0.001621	0.95382	0.349683
	1996-2000	-0.003401	0.000602	-5.653812	0.000001
Financial Risk	1996	0.02184	0.024545	0.889791	0.383205
	1997	0.00999	0.017663	0.56557	0.579075
	1998	0.003661	0.010352	0.353613	0.726717
	1999	0.016435	0.011089	1.482106	0.153163
	2000	-0.00306	0.01189	-0.25752	0.798972
	1996-2000	0.00578	0.008272	0.698689	0.486065
Constant	1996	0.099584	0.02971	3.351855	0.002884

Table 7.10: Results of multiple regression routines

Variables	Years	Coefficient ( $\beta$ )	SE $\beta$	T	Sig. T
	1997	0.079652	0.024463	3.255956	0.004652
	1998	0.07888	0.014578	5.411094	0.000015
	1999	0.079475	0.024123	3.294521	0.003454
	2000	2.48E-05	0.004212	0.005885	0.995353
	1996-2000	0.01196	0.004395	2.721346	0.007445



An examination of regression statistics (i.e. T statistics and sig.), the independent extent of disclosure in compliance with the IAS was not significantly associated with the cost of equity capital at the 0.05 level for each year separately, while for the total period 1996-2000 the extent of disclosure was significantly associated with the cost of equity capital for JIC actively and less actively groups. Such a result consistent with the argument mentioned earlier concerning the impact of the extent of disclosure on systematic risk that the impact extent of disclosure in compliance with IAS “*cumulative*”. As the extent of disclosure variable has negative partial regression coefficient ( $\beta$ ) for each year separately and also for the total period 1996-2000 except for the years 1998, 1999 which means when the extent of disclosure increased, the cost of equity capital decreased except for the years 1998, 1999 increased. Such results as would be predicted (i.e. it is of the correct sign). In addition, business risk is another factor influencing the cost of equity capital in ASE. Since the  $\beta$  (partial regression coefficient) for the business risk variable estimated by logarithm net sales revenue as a proxy for company size is negative, this means that the larger JIC size is, the lower its cost of equity capital. Such a result consistent with the theoretical argument suggesting that large companies are being able to finance their activities at reasonable cost of equity capital comparing with small ones ‘see Chapter Five– section 5.3.1.1’. A possible explanation for the extent of disclosure not being significantly negative associated with the cost of equity capital over each year separately especially after the adoption of IAS in 1998, however, is the low extent of disclosure in compliance with the IAS ‘see Chapter Six- section 6.2’ when the highest mean extent of disclosure in compliance with IAS was in the most recent year (2000) only 55%.

As far as financial risk is concerned, there was not significant association with the cost of equity capital at the 0.05 level not only for each year separately considered in this study but also for the total period 1996-2000. As financial risk variable estimated by leverage has positive partial regression coefficient ( $\beta$ ) for each year separately and also for the total period except for the year 2000, which means that the cost of equity capital decreased with the decrease in the financial risk, a result consistent with the theoretical argument ‘see Chapter Five- section 5.3.1.5’.

What the above evidence suggests, therefore, is that there is a very weak empirical relationship between financial risk estimated by financial leverage and the cost of equity capital, while such association is significant between the business risk estimated by logarithm net sales revenue and the extent of disclosure in compliance with IAS and the cost of equity capital for the total period 1996-2000 supporting the earlier argument that the extent of disclosure in compliance with IAS influence on the cost of equity capital was *cumulative*.

### **7.2.5 The Change in Share Price Volatility in Following the Change in Disclosure in Compliance with IAS**

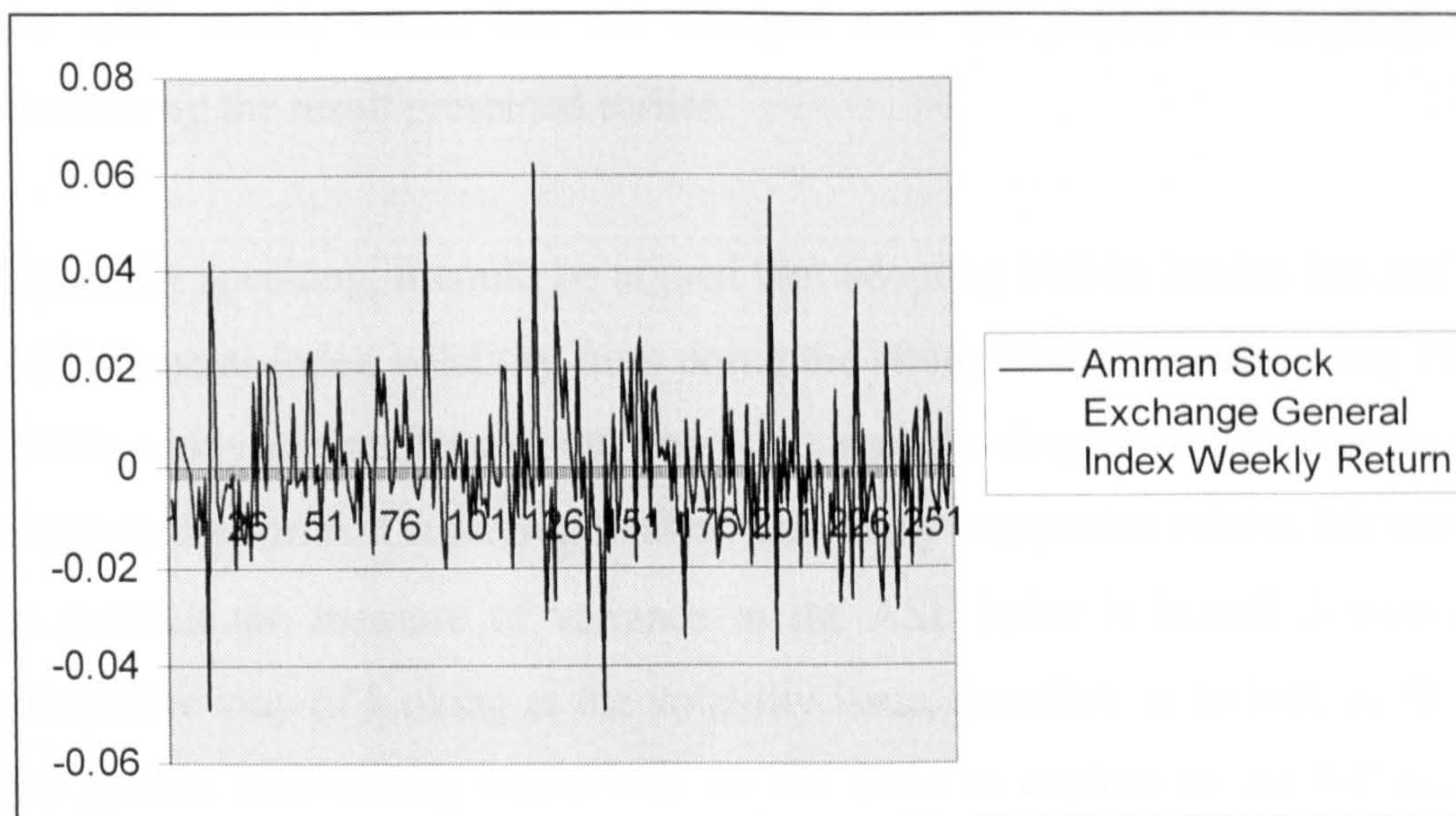
Following the objective of exploring, overall, whether it can be seen any significant changes for JIC included in this study share prices fluctuation over the period 1996-2000, the following question has to be answered:

*To what extent JIC listed on ASE and their shares traded during the period 1996-2000 its share price volatility has been changed.*

A conventional test on the volatility, however, will be to look at the behaviour of the variance in ASE Index over the time period 1996-2000. Figure 7.1 shows such behaviour over the period under consideration.

**Figure 7.1**  
**Amman Stock Exchange General Index Weekly Return**  
**1996-2000**





As it can be seen from the above figure there was not that much fluctuation in the ASE index weekly return over the period 1996-2000. For testing such an argument, the estimated unconditional variance of the ASE index weekly return over the first and the last 52 weeks over the period 1996-2000 were calculated assuming that ASE expected weekly return is zero (i.e. the strongest test is by comparing the estimated unconditional variance for the year 1996 with the year 2000). The result shows that the estimated unconditional variance in 1996 was 0.00022 while for the year 2000 was 0.000232. Dividing the estimated unconditional variance in 2000 by the estimated unconditional variance in 1996, the ratio was 0.054559 called 'calculated F'. Such a value compared with the 'F critical' at 0.05 level of significance,  $N1 = 52$  weeks  $- 1$ , and  $N2 = 52$  weeks  $- 1$ . F critical is 1.6 and therefore comparing the calculated F with the critical F, it can be argued that the null hypothesis should be rejected which means the estimated unconditional variance of the ASE weekly return has not changed over the period of adopting the IAS. For confirmation, another approach has been used by estimating the unconditional variance of ASE index weekly return assuming that the mean of ASE weekly return is not equal to zero. The result shows that the estimated unconditional variance in 1996 was 0.00022 while for the year 2000 was 0.000218. Dividing the estimated unconditional variance in 2000 by the estimated unconditional variance in 1996, the ratio was 0.991888 called 'calculated F'. Such a value compared with the 'F critical' at 0.05 level of significance,  $N1 = 52$  weeks  $- 1$ , and  $N2 = 52$  weeks  $- 1$ . F critical is 1.6 and therefore comparing the calculated F with the critical F, it can be argued that the null hypothesis should be rejected which means the estimated unconditional variance of



the ASE weekly return has not changed over the period of adopting the IAS confirming the result presented earlier.

Generally speaking, it could be argued that adopting IAS in Jordan has not affected ASE General Index volatility from doing the strongest test by comparing 1996 with 2000 weekly return. This result, however, is misleading since thin trading problem exists in the Amman emerging market. Too many companies exhibit thin trading and as a result the measure of variance in the ASE index is biased downwards. An alternative way of looking at the volatility issue, therefore, is to look at JIC that do not exhibit thin trading which will be the issue to explore in the following. It is expected that after the mandatory action, the share price volatility will decrease.<sup>7</sup> Therefore, the null hypothesis to be tested is as follows:

*H08: There are no changes in the share price volatility for JIC listed on ASE and their shares traded over the period 1996-2000.*

To be able to test the above hypotheses, however, a total of 50 JIC logarithm weekly share price returns over the five years (1996, 1997, 1998, 1999, and 2000) were analysed, as explained in the methodology chapter, and each company's share price return volatility estimated by standard deviation was found 'see Appendix 12'. Only JIC actively traded and the less actively traded groups, however, were considered in testing the null hypothesis. Table 7.11 shows the descriptive statistics of the share prices return volatility estimated by standard deviation.

<b>Table 7.11: Descriptive statistics of the share prices return volatility estimated by standard deviation 1996-2000</b>					
	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>
<b>Mean</b>	0.04556	0.03715	0.04583	0.04933	0.04887
<b>Maximum</b>	0.081173	0.06509	0.07404	0.086925	0.105335

<sup>7</sup> It should be noted that it is not definite that the implementation of the IAS will decrease the share price volatility estimated by the standard deviation. That is because might the macroeconomic factors influencing the share prices volatility in a region experienced over the last fifty years four terrible wars and a continuous conflict between Palestinian and Israelis since 1948 which means lack of stability and more risk. Moreover, it can be added that implementing the IAS means ability for JIC to be listed on the international financial markets, which means, as a consequence, new risk to take. But where the later is not an important issue for JIC, the first factor mentioned should be taken into account.



<b>Minimum</b>	0.026557	0.017877	0.021598	0.021348	0.022248
<b>Range</b>	0.054616	0.047212	0.052443	0.065577	0.083086
<b>Standard Deviation</b>	0.012761	0.010039	0.012667	0.016748	0.01867
<b>Standardised Kurt.</b>	1.067838	2.243495	-0.47032	-0.30997	1.832923
<b>Standardised Skew.</b>	1.074642	0.961741	0.110235	0.476643	1.198541
<b>K-S (Lilliefors)</b>	0.160564	0.228899*	0.078211	0.141975	0.190729*
<b>Shapiro-Wilk</b>	0.923132	0.920519	0.984697	0.96575	0.908649

\* = Significant at 0.05 level

The table above shows that the share prices return volatility estimated by standard deviation varied within the range of 0.0831 to 0.0472 over the period 1996-2000. In addition, the mean score of the share price volatility is 0.0456, 0.0372, 0.0458, 0.0493, and 0.0489 in 1996, 1997, 1998, 1999, and 2000, respectively.

The following section will test the significance of the changes in the share price volatility estimated by standard deviation over the period 1996-2000 across actively traded and the less actively traded JIC groups.

### Test of Hypothesis 8 (H08)

In order to test H08 “*there are no changes in the share prices return volatility of JIC listed on ASE and their shares traded over the period 1996-2000*” across all companies within both groups: actively traded and less actively traded, the share prices return volatility estimated by standard deviation values were grouped into five pairs (1996-1997; 1997-1998; 1998-1999, 1999-2000, and 1996-2000), and the parametric paired t-test was run.<sup>8</sup> To be able to use the parametric t statistic, the assumption that the sample is drawn from a normally distributed population must be satisfied. As indicated by the Kurtosis and Skewness statistics and confirmed by the K-S Lilliefors and Shapiro-Wilk tests of normality, the standard deviation scores for the total period appear to be normally distributed except for

<sup>8</sup> The Wilcoxon Matched-Pairs Signed-Ranks test was also run and its results are presented together with the t-test results.

the year 1997 and 2000 having a value for the normality tests between the ranges of  $\pm 1.96$  'see Table 7.11'. As K-S Lilliefors p-value were less than 0.05 for the years 1997 and 2000, such a result confirming that the standard deviation scores over these years was not normally distributed, which has not been confirmed by Shapiro-Wilk normality test showing that p-value over the years 1997 and 2000 was higher than 0.05. To avoid any errors in accepting or rejecting the null hypothesis while its not, however, both: parametric and nonparametric tests will be employed and the tests results are summarised in Table 7.12.



Table 7.12: Summary of the results of the paired-samples t-test and the Wilcoxon Matched-Pairs Signed-Ranks Test on the share price volatility									
Paired-samples t-test				Wilcoxon test					
Differences between:	Paired diff. Mean	SD	t value	2-tail sig.	Accept H01	Z	2-tailed P	Accept H01	
1996-1997	0.00827	0.01338	2.83161	0.01031	No	-2.415	0.01571	No	
1997-1998	-0.0093	0.01472	-2.8914	0.00902	No	-2.624	0.00869	No	
1998-1999	-0.0021	0.02215	-0.4739	0.63986	Yes	-0.578	0.56293	Yes	
1999-2000	-0.001	0.02221	-0.2178	0.82945	Yes	-0.121	0.90363	Yes	
1996-2000	-0.0041	0.0157	-1.3361	0.19355	Yes	-1.358	0.17421	Yes	
* = Significant at 5% level									

As can be seen from the above table, the null hypothesis “*there are no changes in the share price volatility estimated by standard deviation of JIC listed on ASE and their shares traded over the period 1996-2000*” was rejected for the pairs 1996-1997 and 1997-1998 from both tests; t-test and Wilcoxon test. As it shown earlier ‘see Table 7.12’ share price fluctuation for actively traded and less actively traded JIC decreased over the period 1996-1997 and increased over the period 1997-1998. Such a change, therefore, could be confirmed as statistically significant. Whereas, the share price volatility changes over the period 1998-2000 and over the total period 1996-2000 is not statistically significant suggesting that the null hypothesis should be accepted.

To sum up, such results concluded that the fluctuation in JIC share prices has been influenced by other factors (e.g. the conflict between Iraq and the United Nations, the death of King Hussein, the continuous conflict between Palestinian and Israelis). It could be argued, therefore, that the adoption of IAS was not the only factor influencing share prices fluctuation. Such an argument is supported by many previous empirical researches ‘see Chapter Five– section 5.4.2’.<sup>9</sup>

### 7.3 Summary

This chapter presents the results regarding the research hypothesis concerning the financial consequences of adopting IAS. Therefore, for exploring these issues, the relationship between the extent of disclosure and the systematic risk, unsystematic risk, risk premium, cost of equity capital, and share price volatility estimated by beta,

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<sup>9</sup> To confirm such an argument, the multiple linear regression routine was employed using included JIC share price volatility estimated by standard deviation as a dependent variable and the extent of disclosure in compliance with IAS as an independent variable after controlling for the cost of equity capital variable estimated by expected return for the years 1996, 1997, 1998, 1999, 2000, and for the total period 1996-2000. Controlling for the cost of equity capital has been considered since it is believed that the change in the cost of equity capital over the period 1996-2000 could influence the share price volatility. The results show that such explanatory variables did not influence significantly the JIC share price fluctuation not only over each year separately but also over the total period 1996-2000. The extent of disclosure coefficients were 0.043, -0.014, -0.001, -0.01, 0.018, and 0.015 and it is significance at 0.05 level were 0.19, 0.61, 0.96, 0.72, 0.47, and 0.20 in 1996, 1997, 1998, 1999, 2000, and the total period 1996-2000, respectively. The cost of equity capital coefficients, however, were 0.001, 0.18, 0.20, 0.24, -0.39, and -0.16 and it is significance at 0.05 level were 0.99, 0.21, 0.35, 0.42, 0.06, and 0.78 in 1996, 1997, 1998, 1999, 2000, and the total period 1996-2000, respectively. In addition, stepwise regression was employed and the results showed that neither the extent of disclosure in compliance with IAS nor the cost of equity capital were statistically significant in explaining the share price volatility over the total period 1996-2000 and both explanatory variables were removed.



residuals variance, the difference between market return and risk free rate, expected return, and standard deviation, respectively, has been tested over the period 1996-2000.

For generalising the research results, however, the difference in means between the JIC average extent of disclosure actively traded group and JIC average extent of disclosure lowest actively traded group were employed using Paired-Samples t-test to see whether testing for the financial consequences of extent of disclosure in compliance with IAS on JIC actively traded group and JIC less actively traded groups could be generalised for the all 50 JIC selected in this study. The test showed that the difference in means between the two groups is not significant confirming the fact that investigating the financial consequences of adopting IAS could be generalised for all 50 JIC selected originally in this study and not just for those companies within the actively traded group and the less actively group.

The systematic risk and cost of equity capital, to some extent, found to be influenced by the extent of disclosure in compliance with IAS. Such an influence described as a '*cumulative*' influence. Whereas, it has not been found that unsystematic risk, and share price volatility significantly influenced by the adoption of IAS. It could be argued that such a result might be as a consequence of many factors, namely: 1) JIC were not fully complying the IAS, 2) recommending the IAS by accounting professions (JACPA) to be adopted in 1990, 3) Jordanian economy dependency on its neighbours, 4) region suffering continuous conflict between Palestinian and Israelis, 5) continuous tension between Iraq and the USA and the UK since the Second Gulf War in 1991 and also between Iraq and Gulf Countries, 6) the sickness of King Hussein who was the longest serving executive head of state in the world and ultimate death in February 7.1999, 6) the eviction of the United Nation for Monitoring, Verification and Inspection Commission (UNMOVIC) in 1998 which led to a big attack operation by USA and UK on Iraq, the biggest trade partner for Jordan, 7) and last, but not least, ASE efficiency, however, might made testing the change in JIC share price volatility as a consequence of adopting the IAS in Jordan ambiguous.

Multiple regression routines were employed by testing whether the extent of disclosure in compliance with IAS has influenced significantly the cost of equity capital after controlling for the variables business risk and financial risk. The test results revealed that, over the total period 1996-2000, business risk and the extent of disclosure in compliance with IAS are the most explanatory variable having significant association with the cost of equity capital among the others included in this study, an argument confirmed by running the stepwise regression 'see Appendix 11'. The explanatory variables included in the regression model has not been found significantly associated with the cost of equity capital over each year separately, however, confirming the fact that the impact of the extent of disclosure in compliance with IAS on JIC cost of equity capital were "*cumulative*".



## **CHAPTER EIGHT**

### **CONCLUSIONS, BOUNDARIES AND FUTURE RESEARCH**

Little is known about the impact of the IAS on the extent of disclosure, their impact on systematic risk, unsystematic risk, risk premium, cost of equity capital, and share price volatility, or the effect on international trade. In particular, there is no empirical evidence, that investigates the impact of all related and relevant IAS on the extent of disclosure, systematic risk, unsystematic risk, risk premium, cost of equity capital, and share prices volatility for companies listed in the stock market in a country like Jordan. In addition, from a micro (company) perspective, it has been suggested that there are company-specific factors that may affect the extent of disclosure in compliance with IAS. Although the association has long been recognised, the results of the previous studies carried out in different countries have been mixed, to a certain extent inconsistent and sometimes contradictory. Hence, a further investigation into the impact of company-specific factors of the extent of disclosure in compliance with IAS in a country, which was not subject to such a previous study, may contribute to efforts that have been made to identify the factors affecting the extent of disclosure of companies. Jordanian companies have not been covered in the previous disclosure studies in compliance with all related IAS, (as far as this research is aware), and therefore the impact of company-specific factors on the extent of disclosure in compliance with all related and relevant IAS is not known.

For the accounting years ending December 1998, IAS was made mandatory through the Companies Act No.22 of 1997 and Securities law No.23 of 1997 for all Jordanian public companies. Unfortunately there was no institutional change to check on compliance. However, it does create an opportunity to test if there were any factors, which systematically affected or were associated with the degree of compliance.

Jordan is chosen as the focus of this study for several reasons. Firstly, it is an open economy in the Middle East especially to EU members and USA. Secondly, the Amman Stock Exchange is growing rapidly and this creates a possibility of testing cost of capital propositions. Thirdly, so far, however, little is known about the

impact of the extent in compliance with IAS on systematic risk, unsystematic risk, risk premium, cost of equity capital, and on share price volatility not only in developed countries but also in developing countries as well. Fourthly, the sudden imposition of IAS by the Jordanian Companies Act and the Securities law creates an opportunity for stronger tests of the propositions about disclosure and the cost of capital. To test the propositions, a sample of only Jordanian industrial companies was selected. These companies had existed for the six years period 1995-2000. They had to have a full set of company accounts and they had to have been continuously trading over the whole period.

## 8.1 Conclusions

The study analysis indicates the following:

1. The sampled JIC extent of disclosure in compliance with the IAS increased over the period 1995-2000 where the change in means was positive for the total period.
2. Although there was a drift up in the level of disclosure over the period 1995-2000, the degree of the extent of disclosure in compliance with IAS for the period post the mandatory action (1998-2000) were higher than 50% comparing with the period pre the mandatory action. This might give an indication that the mandatory action played a vital role in increasing the level of disclosure regarding the IAS.
3. Overall, the extent of disclosure is quite low over not only pre but also post the mandatory action of adopting the IAS.
4. An important point has to be mentioned, moreover, is that although the adoption for the IAS started in the year 1998 but the significant change started in the extent of disclosure since 1997. This ambiguity could be attributable to many factors, namely; Jordanian Association of Certified Public Accountants (JACPA) who decided in its Ordinance No.54 that IAS was to be followed compulsory by the Jordanian public accountants during their course of examination of financial statements of the Jordanian Shareholding Companies (JSCs) starting by December 1990, pressure from companies liked with the international market to implement early the IAS, the absence of national accounting standards, researchers and experts



recommendations of implementing the IAS. As a consequence, it can be seen that a drift up in the extent of disclosure regarding the mandatory action in 1998 for implementing the IAS and not a jump up as expected to be seen around the adoption date. In addition, the extent of disclosure in compliance with IAS changes over the period 1995-2000 could be influenced by a macroeconomic factors, an issue argued by many researches (Chen 1983; Fama and French 1989; Poon and Taylor 1991).

5. An analysis of the relationship between the level of disclosure and characteristics of reporting firms will not only extend our knowledge of significant factors influencing the extent of disclosure, but may also be of use to regulatory authorities. This could be done by selecting an appropriate course of action for setting up new or modifying existing regulations. In this regard, it could be argued that the main conclusion of this study is that the extent of disclosure in compliance with IAS systematically varies depending upon company size and, to a lesser extent, audit firm and industry type (Mining and Building Equipment) in explaining differences in the extent of annual reports disclosure between the JIC over the period 1995-2000.
6. As far as the industry type is concerned, the extent of disclosure in compliance with IAS of the Mining and Building Equipment sector was found to be significantly different from others. One possible explanation for this result could be due to the fact that companies in this industry category rely heavily on the foreign investments particularly those large companies who are considered as the biggest companies in the country, such as Jordan Phosphate Mines, Jordan Cement Factories, Arab Potash, and Jordan Cement Factories. These companies, therefore, (relatively) faced higher pressure from the foreign investors and the outside world to disclose more information in comparison with the companies in the other industries.
7. Concerning the financial consequences of adopting IAS, the results of this study suggested that systematic risk and cost of equity capital, to some extent, was found to be influenced by extent of disclosure in compliance with IAS. Such an influence was described as a '*cumulative*' influence.

8. Multiple regression routines were employed by testing whether the extent of disclosure in compliance with IAS has influenced significantly the cost of equity capital after controlling for the variables business risk and financial risk. The test results revealed that, over the total period 1996-2000 only, business risk and the extent of disclosure in compliance with IAS found to have negative and significant association with the cost of equity capital where financial risk had positive but not significant association with the cost of equity capital over the total period 1996-2000, a result confirmed by running the stepwise regression showing that the extent of disclosure in compliance with IAS and business risk are the only explanatory variables explain the variation in the cost of equity capital only over the total period 1996-2000. Such a result confirming the fact argued before that the extent of disclosure in compliance with IAS influences on cost of equity capital were '*cumulative*'.
9. On the other hand, it has not been found that unsystematic risk, risk premium, and share price volatility significantly influenced by the adoption of IAS.
10. It could be argued that such financial consequences of adopting the IAS might be influenced by factors, namely: 1) JIC were not fully complying with the IAS (i.e. the higher mean extent of disclosure over the period 1995-2000 was 0.56 in the most recent year 2000), 2) recommending the IAS by accounting professions (JACPA) to be adopted in 1990, 3) Jordanian economy dependency, regionally and internationally, 4) region suffering continuous conflict between Palestinian and Israelis, 5) continuous tension between Iraq and the USA and the UK since the Second Gulf War in 1991 and also between Iraq and Gulf Countries, 6) the sickness of King Hussein who was the longest serving executive head of state in the world and his ultimate death in February 7.1999, 7) and last, but not least, the eviction of the United Nation for Monitoring, Verification and Inspection Commission (UNMOVIC) in 1998 which led to a big attack operation by USA and UK on Iraq, the biggest trade partner for Jordan.

## 8.2 Boundaries



There are a number of boundaries of this type of research.

First, the focus of disclosure discussed in this study has been on corporate annual reports, which are only a part of the information set by companies.

Second, it is clear from the review of the literature that construction of an index is a difficult matter that generally involves subjective judgment on the part of the researchers. In other words, developing this study indices are limited to items where compliance is visible and therefore the research inevitably ends up testing disclosure more than measurement and accounting policy statements more than accounting practice. The indices are therefore a proxy for compliance and in some ways a slightly biased proxy. In particular, in measuring the extent of disclosure in compliance with IAS, the study is reliant on the fact that companies making clear statements of accounting policy and making them honestly. In addition, awarding scores to companies also seems to involve subjective judgment in many cases. Therefore, measuring company information disclosure cannot be carried out in a precise scientific way. Researcher subjectivity cannot be completely removed, nor is it reasonable to expect that it can be. Consequently, the value of the resulting disclosure scores and their subsequent use in testing hypotheses cannot, therefore, be viewed uncritically.

Third, in the context of Jordan, external finance has often been raised from local banks and these institutions have the power to demand inside information. Casual empiricism suggests that this had the effect in not recognising a jump up in the extent of disclosure after the adoption of IAS by Amman Stock Exchange in 1998 since there is no need for raising such finance from international capital markets. This issue could be confirmed by looking at the relationship between the extent of disclosure and leverage which was not significant over the period 1995-2000.

Fourth, since the results revealed that there was not a jump up in the extent of disclosure in compliance with IAS for the period post the mandatory action of adopting the IAS forced by Companies Act No.22 of 1997 and Securities Law No.23 of 1997 compared with the period pre the adoption, it is suggested that macroeconomic factors influencing significantly the Middle-East region

mentioned in the Research Methodology and Hypotheses Chapter could be the reason for the ambiguity in supporting the theoretical arguments concerning the financial consequences of increasing the disclosure.

Fifth, data availability limited our ability to study some factors that have been found to be important theoretically or empirically in other disclosure studies (e.g. bid-ask spread, ownership structure, foreign investment influence, etc). As additional information becomes available about Jordanian companies, the effect of such factors should be investigated.

Sixth, JIC listed on ASE were featured by being thinly traded which created economic problems in estimating the systematic risk, unsystematic risk, and the cost of equity capital. This feature forced the selected JIC into three groups, namely: actively traded, less actively traded, and lowest actively traded groups. Only, the first two groups, therefore, were considered to explore the financial consequences of adopting IAS.

Seventh, In testing the impact of extent of disclosure in compliance with IAS on JIC share price volatility, it has to be remembered that share price volatility is influenced by many factors related to information asymmetry and testing the effect of adopting new reporting strategy on volatility could be ambiguous – in particular for infrequently traded stocks as it is the case for JIC. For this reason, volatility is likely to be the least reliable proxy among the others in exploring the financial consequences of adopting the IAS.

### **8.3 Recommendations**

Overall, the extent of disclosure is quite low over not only pre but also post the mandatory action of adopting the IAS suggesting that the Government and the ASE systems regarding the financial reporting in Jordan are loose. Therefore, it could be suggested that to increase the degree of compliance, the accounting profession in Jordan should strengthen its monitoring and enforcement mechanisms after giving it more power through the Companies Act and increase awareness about the existing mandatory provisions by conducting training programs for its members on a regular basis working side by side with the ASE on



a cooperative basis. Ahmed and Nicholls (1994) argued that in developing countries while there are considerable incentives for voluntary disclosure in corporate annual reports, there are also reasons for not complying with mandatory disclosure regulations, including inadequate regulatory framework and enforcement mechanisms, and a lack of both an effective capital market and an accounting profession. Therefore, the assumption that all companies will disclose all mandatory information may not be true in these countries. Empirically, Wallace (1988) examined 47 Stock Exchange listed companies in Nigeria and concluded that many companies in that country publish annual reports that did not adequately comply with minimum disclosure regulation.

To improve the extent of disclosure in compliance with IAS, moreover, the Amman Stock Exchange and JAPCA should strengthen its continuing professional education courses on new development. It should also compile a checklist incorporating all the disclosure requirements applicable in compliance with IAS. The checklist should be updated periodically and whenever new disclosure requirements are promulgated by the IASB.

Although JIC were not complying fully with IAS, it is always reported by companies' auditors that the company complying fully with the IAS. Therefore, it could be recommended that the Companies Act, Amman Stock Exchange and JAPCA should require auditing firms to maintain quality control programs and provide an active and practical penalty system for auditors whose work proves to be negligent for fraudulent beside giving more power to the JAPCA in supervising and controlling the profession.

A possible policy implication of this finding may be that policymakers in Jordan should focus more closely on the disclosure needs of users of smaller firms' annual reports, firms not audited by one of the big auditing firms, and firms not one of the Mining and Building Equipment sector since such company size, audit firm and industry type factors found influencing significantly the extent of disclosure in compliance with IAS in Jordan. However, in so doing, policymakers in Jordan would need to consider the costs, as well as the benefits, associated with increased disclosure in compliance with IAS by smaller companies, firms audited

by not one of the big auditing firms, and firms not one of the Mining and Building Equipment sector.

It is obvious that there is contradictory, to some extent, between the IAS requirements and the Income Tax Law in Jordan. For example, IAS requirements allowed an entity to revalue its assets if it is not using the historical cost approach in reporting such assets, where the Income Tax Law in Jordan prohibited such treatment and allowing only for the use of historical cost approach. Moreover, the Income Tax Law in Jordan forced Jordanian companies to use the straight-line method only for depreciating its assets, whereas IAS permitted beside the above method using the declining depreciation and the accelerating depreciation methods. If Jordanian companies asked to adopt fully the IAS, such a contradiction between requirements should be removed.

#### **8.4 Future Research**

As mentioned earlier, the focus of disclosure discussed in this study has been on corporate annual reports, which are only a part of the information set by companies. Future research, therefore, should examine the factors associated with disclosure through various alternative media such as the financial press, proxy statements, and quarterly and interim financial data issued by the firm.

Moreover, it can be said that there are implications for future research on disclosure in compliance with IAS. For example, since  $R^2$  ranged from 20% to a maximum of 46.5%, there are obviously additional factors influencing the extent of disclosure in compliance with IAS. Therefore, future research can explore the influence of variables such as frequency of international financing, stability of growth in earnings, degree of competition, ownership structure, foreign investment influence, and state of development on the extent of disclosure in compliance with IAS. An interesting point to note, in addition, is that the explanatory power for the included factors (extent of disclosure in compliance with IAS, business risk, and financial risk) in explaining the cost of equity variation is quite low since  $R^2$  ranged from 3% to a maximum of 65% suggesting the fact that there are other factors, might be on the macroeconomic level, should



be considered in future research for explaining such variation. Such an argument supported by the *constant* factor being significant over the period under consideration except over the year 2000.

It could be considered that there is scope for further research in the field of corporate disclosure and the financial consequences of adopting the IAS in emerging capital markets. For instance, research could be extend this study involve comparative studies with other Middle Eastern countries. Such studies will help to validate the conclusions of this study.

# Appendices



APPENDIX 1

IAS DISCLOSURE INDICES ITEMS RELATED AND RELEVANT TO THE SELECTED JIC (1995 – 2000)

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
1	IAS 1 (reformatted 1994) Disclosure of Accounting Policies	1. Is the disclosure of the significant accounting policies used as an integral part of the financial statements (the policies should normally be disclosed in one place)? Par. 9	√	X	X	X
2	IAS 1 (revised 1997) Presentation of Financial Statements	1. Does the following role "financial statements should not be described as complying with IAS unless they comply with all the requirements of each applicable standards and each applicable interpretation of the standing interpretation committee" has been followed by the enterprise? Par. 11	X	√	√	√
3		2. In the extremely rare circumstances when management concludes that compliance with a requirement in a Standard would be misleading, and therefore that departure from a requirement is necessary to achieve a fair presentation, does the company disclose that the management has concluded that the financial statements fairly present the enterprise's financial position, financial performance and cash flow; that it has complied in all material respects with applicable IAS except that it has departed from a Standard in order to achieve a fair presentation; the Standard from which the enterprise has departed, the nature of the departure, the reason why that treatment would be misleading in the circumstances, and the treatment adopted; and the financial impact of the departure on the enterprise's net profit or loss, assets, liabilities, equity and cash flows for each period presented? Par. 13	X	√	√	√
4		3. When management is aware, in making its assessment, of material	X	√	√	√

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
		uncertainties related to event or conditions which may cast significant doubt upon the enterprise's ability to continue as a going concern, does the company disclose those uncertainties? Par. 23				
5		4. When the financial statements are not prepared on a going concern basis, does the company disclose this fact together with the basis on which the financial statements are prepared and the reason why the enterprise is not considered to be a going concern? Par. 23	X	✓	✓	✓
6		5. Unless an IAS permits or requires otherwise, does the company disclose comparative information, which should be included in narrative and descriptive information when it is relevant to an understanding of the current period's financial statements, in respect of the previous period for all numerical information in the financial statements? Par. 38	X	✓	✓	✓
7		6. Does the enterprise display, and repeated when it is necessary, the name of the reporting enterprise or other means of identification; whether the financial statements cover the individual enterprise or a group of enterprises; the balance sheet date or the period covered by the financial statements, whichever is appropriate to the related component of the financial statements; the reporting currency; and the level of provision used in the presentation of figures in the financial statements? Par. 46	X	✓	✓	✓
8		7. When, in exceptional circumstances, an enterprise's balance sheet date changes and annual financial statements are presented for a period longer or shorter than one year, does the enterprise disclose, in addition to the period covered by the financial statements, the reason for a period other than one year being used? Par. 49(a)	X	✓	✓	✓
9		8. When, in exceptional circumstances, an enterprise's balance sheet date changes and annual financial statements are presented for a period longer or	X	✓	✓	✓



No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
		shorter than one year, does the enterprise disclose, in addition to the period covered by the financial statements, the fact that comparative amount for the income statement, changes in equity, cash flows and related notes are not comparable? Par. 49(b)				
10		9. Does the balance sheet disclose property, plant and equipment as a line item? Par. 66(a)	X	✓	✓	✓
11		10. Does the balance sheet disclose intangible assets as a line item? Par. 66(b)	X	✓	✓	✓
12		11. Does the balance sheet disclose financial assets (excluding amounts shown under d, f, and g) as a line item? Par. 66(c)	X	✓	✓	✓
13		12. Does the balance sheet disclose investments accounted for using the equity method as a line item? Par. 66(d)	X	✓	✓	✓
14		13. Does the balance sheet disclose inventories as a line item? Par. 66(e)	X	✓	✓	✓
15		14. Does the balance sheet disclose trade and other receivables as a line item? Par. 66(f)	X	✓	✓	✓
16		15. Does the balance sheet disclose cash and cash equivalents as a line item? Par. 66(g)	X	✓	✓	✓
17		16. Does the balance sheet disclose trade and other payables as a line item? Par. 66(h)	X	✓	✓	✓
18		17. Does the balance sheet disclose tax liabilities and assets as required by IAS 12, Income Taxes as a line item? Par. 66(i)	X	✓	✓	✓
19		18. Does the balance sheet disclose provisions as a line item? Par. 66(j)	X	✓	✓	✓
20		19. Does the balance sheet disclose non-current interest-bearing liabilities as a line item? Par. 66(k)	X	✓	✓	✓
21		20. Does the balance sheet disclose minority interest as a line item? Par. 66(l)	X	✓	✓	✓
22		21. Does the balance sheet disclose issued capital and reserves as a line item? Par. 66(m)	X	✓	✓	✓

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
23		22. Does the balance sheet or the notes disclose, for each class of share capital, the number of shares authorised? Par. 74(a, i)	X	✓	✓	✓
24		23. Does the balance sheet or the notes disclose, for each class of share capital, the number of shares issued and fully paid, and issued but not fully paid? Par. 74(a, ii)	X	✓	✓	✓
25		24. Does the balance sheet or the notes disclose, for each class of share capital, par value per share or that the shares have no par value? Par. 74(a, iii)	X	✓	✓	✓
26		25. Does the balance sheet or the notes disclose, for each class of share capital, a reconciliation of the number of shares outstanding at the beginning and at the end of the year? Par. 74(a, iv)	X	✓	✓	✓
27		26. Does the balance sheet or the notes disclose, for each class of share capital, shares in the enterprise held by the enterprise itself or by subsidiaries or associates of the enterprise? Par. 74(a, vi)	X	✓	✓	✓
28		27. Does the balance sheet or the notes disclose, for each class of share capital, shares reserved for issuance under options and sales contracts, including the terms and amounts? Par. 74(a, vii)	X	✓	✓	✓
29		28. Does the enterprise disclose either on the face of the balance sheet or in the notes a description of the nature and purpose of each reserve within owners' equity? Par. 74(b)	X	✓	✓	✓
30		29. Does the enterprise disclose either on the face of the balance sheet or in the notes, the amount of dividends that were proposed or declared after the balance sheet date but before the financial statements were authorised for issue? Par. 74(c)	X	✓	✓	✓
31		30. Does the enterprise disclose either on the face of the balance sheet or in the notes the amount of any cumulative performance dividends not recognised? Par. 74(d)	X	✓	✓	✓



No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
32		31. Does the income statement include line item represents revenue? Par. 75(a)	X	✓	✓	✓
33		32. Does the income statement include line item represents the results of operating activities? Par. 75(b)	X	✓	✓	✓
34		33. Does the income statement include line item represents finance costs? Par. 75(c)	X	✓	✓	✓
35		34. Does the income statement include line item represents tax expense? Par. 75(e)	X	✓	✓	✓
36		35. Does the income statement includes line item represents profit or loss from ordinary activities? Par. 75(f)	X	✓	✓	✓
37		36. Does the income statement include line item represents extraordinary items? Par. 75(g)	X	✓	✓	✓
38		37. Does the income statement includes line item represents net profit or loss for the period? Par. 75(i)	X	✓	✓	✓
39		38. Does the enterprise disclose, either on the face of the income statement or in the notes to the income statement, an analysis of expenses using a classification based on either the nature of expenses or their function within the enterprise? Par. 77	X	✓	✓	✓
40		39. If the enterprise classifies expenses by function, does it disclose additional information on the nature of expenses, including depreciation, amortisation expense and staff costs? Par. 83	X	✓	✓	✓
41		40. Does the enterprise disclose, either on the face of the income statement or in the notes, the amount of dividends per share, declared or proposed, for the period covered by the financial statements? Par. 85	X	✓	✓	✓
42		41. Does the enterprise present a separate statement showing the net profit or loss for the period? Par. 86(a)	X	✓	✓	✓

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
43		42. Does the enterprise present a separate statement showing the net profit or loss for the period? Par. 86(a); and	X	✓	✓	✓
44		43. Showing each item of income and expense, gain or loss which, as required by other Standards, is recognised directly in equity, and the total of these items? Par. 86(b); and	X	✓	✓	✓
45		44. Showing the cumulative effect of changes in accounting policy and the correction of fundamental errors dealt with under the Benchmark treatment in IAS 8? Par. 86(c); and	X	✓	✓	✓
46		45. Showing capital transactions with owners and distributions to owners? Par. 86(d); and	X	✓	✓	✓
47		46. Showing the balance of accumulated profit or loss at the beginning of the period and at the balance sheet date, and the movements for the period? Par. 86(e); and	X	✓	✓	✓
48		47. Showing reconciliation between the carrying amount of each class of equity capital, share premium and each reserve at the beginning and the end of the period, separately disclosing each movement? Par. 86(f)	X	✓	✓	✓
49		48. Does the enterprise disclose, in the notes to the financial statements, the information required by IAS that is not presented elsewhere in the financial statements? Par. 91(b)	X	✓	✓	✓
50		49. Does the enterprise disclose in the notes the measurement basis (or bases) used in preparing the financial statements; and each specific accounting policy that is necessary for a proper understanding of the financial statements? Par. 97	X	✓	✓	✓
51		50. If it is not disclosed elsewhere, does the enterprise disclose the domicile and legal form of the enterprise, its country of incorporation and the address of the registered office (or principle place of business, if different from the	X	✓	✓	✓



No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
		registered office)? Par. 102(a)				
52		51. If it is not disclosed elsewhere, does the enterprise disclose a description of the nature of the enterprise's operations and its principle activities? Par. 102(b)	X	✓	✓	✓
53		52. If it is not disclosed elsewhere, does the enterprise disclose either the number of employees at the end of the period or the average for the period? Par. 102(d)	X	✓	✓	✓
54	IAS 2 (revised 1993) Inventories	1. Do the accounting policies state how inventory has been valued? Par. 6	✓	✓	✓	✓
55		2. Do the accounting policies disclosed on the valuation of inventory comply with IAS 2? Par. 7, 21 and 23 (e.g. lower of cost and net realisable value (NRV); all costs of purchase included: FIFO or weighted average and LIFO acceptable)	✓	✓	✓	✓
56		3. Is inventory classified appropriately? Par. 34(b) (e.g. merchandise, production supplies, materials, work in progress and finished goods)	✓	✓	✓	✓
57		4. Do the financial statements show the amount of inventories carried at net realisable value? Par. 34(c)	✓	✓	✓	✓
58		5. Do the financial Statements disclose the amount of, and circumstances or events leading to, reversal of write-downs of inventories (arising from an increase in net realisable value) recognised as income? Par. 34(d, e)	✓	✓	✓	✓
59		6. Do the financial statements disclose the carrying amount of inventories pledged as security for liabilities? Par. 34(f)	✓	✓	✓	✓
60		7. If LIFO is used, is the difference between LIFO and the lower of cost and NRV disclosed? Par. 36	✓	✓	✓	✓

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
61	IAS 4 (reformatted 1994) Depreciation Accounting	1. If there is a change in the depreciation method, is the change quantified and disclosed? Par.12	✓	✓		✓
62		2. Do the financial statements disclose the depreciation method used for each class of property, plant and equipment (e.g. straight line)? Par. 15(a)	✓	✓		✓
63		3. Do the financial statements disclose the useful lives of assets or depreciation rates? Par.15(b)	✓	✓		✓
64		4. Do the financial statements disclose the total depreciation charge for the year? Par.15(c)	✓	✓		✓
65		5. Do the financial statements disclose the gross carrying amount of depreciable assets and the related accumulated depreciation? Par.15(d)	✓	✓		✓
66	IAS 5 (reformatted 1994) Information to be disclosed in Financial Statements	1. Does the enterprise disclose its name, the country of incorporation, the balance sheet date, the period covered by the financial statements, a brief description of the nature of the activities, its legal form, and the currency in terms of which the financial statements are expressed if they are not otherwise apparent? Par. 7	✓	X	X	X
67		2. Does the enterprise supplement amounts and classification of items, if necessary, by additional information to make their meanings clear? Par. 8	✓	X		X
68		3. Do the financial statements show corresponding figures for the preceding period? Par. 9	✓	X		X
69		4. Does the enterprise disclose the restrictions on the title to assets, security given in respect of liabilities, contingent assets and contingent liabilities quantified if possible, and amount committed for future capital expenditure? Par. 10	✓	X		X



No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
70		5. Regarding property, plant and equipment, does the enterprise disclose land and buildings, plant and equipment, other categories of assets suitably identified and accumulated depreciation? Par. 11	√	X	X	X
71		6. Regarding current assets, does the enterprise disclose separately cash, marketable securities (the market value should be disclosed if different from the carrying amount), receivables (e.g. accounts and notes receivable - trade; receivable from directors; and other receivable and prepaid expenses), and inventories? Par. 13	√	X	X	X
72		7. Regarding long-term liabilities, does the enterprise disclose separately, excluding the portion repayable within one year, secured loans, unsecured loans, loans from associates, summary of interest rates, repayment terms, covenants, subordinations, conversion features and amounts of unamortised premium or discount? Par. 14	√	X	X	X
73		8. Regarding current liabilities, does the enterprise disclose separately bank loans and overdrafts, current portion of long-term liabilities, payables (e.g. accounts and notes payable - trade, payable to directors, payable to associates, tax on income, dividend payable, and other payables and occurred expenses? Par. 15	√	X	X	X
74		9. Regarding other liabilities and provision, does the enterprise disclose the significant items (e.g. provision for pensions) included in other liabilities and in provisions and accruals separately? Par. 16	√	X	X	X
75		10. Does the enterprise disclose separately share capital (for each class of share capital, the following should be disclosed: the number of amount of shares authorised, issued and outstanding; the capital not yet paid in, the par or legal value per share; and the movement in share capital accounts during the period)? Par. 17(a)	√	X	X	X

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
76		11. Does the enterprise disclose separately other equity, indicating the movement for the period and any restrictions on distribution (e.g. capital paid-in in excess of par value -share premium-; and retained earnings)? Par. 17(b)	✓	X	X	X
77		12. Regarding the income statement, does the enterprise disclose sales or other operating revenues, depreciation, interest income, income from investments, interest expense, tax on income, extraordinary charges, extraordinary credits, and net profit or loss for the period? Par. 18	✓	X	X	X
78	IAS 7 (revised 1992) Cash Flow Statements	1. Is there a cash flow statement?	✓	✓	✓	✓
79		2. Are cash flows classified as operating, investing and financing? Par.10	✓	✓	✓	✓
80		3. Do the financial statements disclose the cash flows associated with extraordinary items separately and classify it as arising from operating, investing or financing activities? Par. 29	✓	✓	✓	✓
81		4. Are cash flows from interest and dividends paid and received disclosed separately and classified in a consistent manner as either operating, investing or financing activities? Par.31	✓	✓	✓	✓
82		5. Are cash flows arising from taxes on income disclosed separately? Par.35	✓	✓	✓	✓
83		6. Do the financial statements include a reconciliation of the amounts in its cash flow statement with the equivalent items reported on the balance sheet? Par.45	✓	✓	✓	✓
84	IAS 8 (revised 1993) Net Profit or Loss	1. Does the Income statement disclose separately the amount of profit or loss from ordinary and extraordinary activities? Par.10	✓	✓	✓	✓



No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
	for the Period, Fundamental Errors and Changes in Accounting Policies					
85		2. Does the income statement disclose the nature and the amount of each extraordinary item separately? Par. 11	✓	✓	✓	✓
86		3. Does the company disclose, for each discontinued operation, the nature of the discontinued operation? Par.20(a)	✓	✓	✓	✓
87		4. Does the company disclose, for each discontinued operation, the effective date of discontinuance for accounting purposes? Par.20(c)	✓	✓	✓	✓
88		5. Does the company disclose, for each discontinued operation, the manner of discontinuance (sale or abandonment)? Par.20(d)	✓	✓	✓	✓
89		6. Does the company disclose, for each discontinued operation, the gain or loss on discontinuance and the accounting policy used to measure that gain or loss? Par.20(e)	✓	✓	✓	✓
90		7. Does the company disclose, for each discontinued operation, the revenue and profit or loss from the ordinary activities of the operation for the period, together with the corresponding amounts for each prior period presented? Par.20(f)	✓	✓	✓	✓
91		8. Does the income statement include the effect of a change in an accounting estimate in the determination of net profit or loss for the period of the change? Par.26	✓	✓	✓	✓
92		9. Does the company disclose the nature of any fundamental error? Par.37(a)	✓	✓	✓	✓
93		10. Does the company disclose the amount of the correction recognised in net profit or loss for the current period and for each prior period presented? Par.37(b)	✓	✓	✓	✓

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
94		11. Does the company disclose the amount of the correction recognised in net profit or loss relating to periods prior to those included in the comparative information? Par.37(c)	✓	✓	✓	✓
95		12. Does the company disclose the fact that comparative information has been restated or that it is impracticable to do so? Par.37(d)	✓	✓	✓	✓
96		13. If the allowed alternative treatment is adopted 'see par. 34', does the company disclose comparative information presented as pro-forma additional information disclosing the nature of the fundamental error? Par. 40(a)	✓	✓	✓	✓
97		14. If the allowed alternative treatment is adopted 'see par. 34', does the company disclose comparative information presented as pro-forma additional information disclosing the nature of the correction recognised in net profit or loss for the current period? Par. 40(b)	✓	✓	✓	✓
98		15. If the allowed alternative treatment is adopted 'see par. 34', does the company disclose comparative information presented as pro-forma additional information disclosing the amount of the correction included in each period and the amount of the correction relating to periods prior to those included in the pro-forma information? 40(c)	✓	✓	✓	✓
99		16. If the allowed alternative treatment is adopted 'see par. 34', does the company disclose comparative information presented as pro-forma additional information disclosing, if applicable, the fact that it is impracticable to present pro-forma information? Par. 40(c)	✓	✓	✓	✓
100		17. Where a change in accounting policy is made on the adoption of an IAS, does the company provide the disclosures in accordance with the specific transitional provisions of the standard? Par. 46	✓	✓	✓	✓
101		18. If the benchmark treatment is adopted (adjust the opening balance of retained earnings; comparative information should be restated unless it is	✓	✓	✓	✓



No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
		impracticable to do so. Par. 49), does the company disclose the reasons for the change? Par.53(a)				
102		19. If the benchmark treatment is adopted (adjust the opening balance of retained earnings; comparative information should be restated unless it is impracticable to do so. Par. 49), does the company disclose the amount of the adjustment for the current period and for each period presented? Par.53(b)	√	√	√	√
103		20. If the benchmark treatment is adopted (adjust the opening balance of retained earnings; comparative information should be restated unless it is impracticable to do so. Par. 49), does the company disclose the amount of the adjustment relating to periods prior to those included in the comparative information? Par.53(c)	√	√	√	√
104		21. If the benchmark treatment is adopted (adjust the opening balance of retained earnings; comparative information should be restated unless it is impracticable to do so. Par. 49), does the company disclose the fact that comparative information has been restated or that it is impracticable? Par.53(d)	√	√	√	√
105		22. If the allowed alternative treatment is adopted (the comparative information should be presented as reported in the financial statements of the prior period. Additional pro-forma comparative information should be presented unless it is impracticable to do so. Par. 54), does the company disclose the reasons for the change? Par. 57(a)	√	√	√	√
106		23. If the allowed alternative treatment is adopted (the comparative information should be presented as reported in the financial statements of the prior period. Additional pro-forma comparative information should be presented unless it is impracticable to do so. Par. 54), does the company disclose the amount of the adjustment recognised in net profit or loss for the	√	√	√	√

No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
		current period? Par. 57(b)					
107		24. If the allowed alternative treatment is adopted (the comparative information should be presented as reported in the financial statements of the prior period. Additional pro-forma comparative information should be presented unless it is impracticable to do so. Par. 54), does the company disclose the amount of the adjustment included in each period for which pro-forma information is presented and the amount of adjustment relating to periods prior to those included in the financial statements? Par. 57 (c)	✓	✓	✓	✓	
108		25. If the allowed alternative treatment is adopted (the comparative information should be presented as reported in the financial statements of the prior period. Additional pro-forma comparative information should be presented unless it is impracticable to do so. Par. 54), does the company disclose the fact that it is impracticable to present pro-forma information? Par. 57(c)	✓	✓	✓	✓	
109	IAS 9 (revised 1993) Research and Development Costs	1. Has the company amortised the amount of development costs, which it has recognised as an asset? Par.21	✓	✓	X	X	
110		2. Does the company disclose the accounting policy adopted for research and development costs? Par.30(a)	✓	✓	X	X	
111		3. Does the company disclose the amount of research and development cost recognised as an expense? Par.30(b)	✓	✓	X	X	
112		4. Does the company disclose the amortisation method used? Par.30(c)	✓	✓	X	X	
113		5. Does the company disclose the useful life or amortisation rate used? Par.30(d)	✓	✓	X	X	



No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
114		6. Does the company disclose a reconciliation of the balance of unamortised development costs at the beginning and end of the period showing development costs recognised as an asset in accordance with paragraph 17; recognised as an expense in accordance with paragraph 21 or 25; allocated to other asset accounts; and written back in accordance with paragraph 27? Par. 30(e)	✓	✓	X	X	
115	IAS 10 (reformatted 1994) Contingencies and Events Occurring After the Balance Sheet Date	1. When disclosure of contingencies (income/asset or expense/liability) is required by paragraph 9 or 16 of this standard, does the company disclose the nature of the contingency? Par.22(a)	✓	✓		X	
116		2. When disclosure of contingencies (income/asset or expense/liability) is required by paragraph 9 or 16 of this standard, does the company disclose the uncertain factors that may affect the future outcome? Par.22(b)	✓	✓	✓	X	
117		3. When disclosure of contingencies (income/asset or expense/liability) is required by paragraph 9 or 16 of this standard, does the company disclose an estimate of the financial effect, or a statement that such an estimate cannot be made? Par.22(c)	✓	✓	✓	X	
118		4. If disclosure of events occurring after the balance sheet date is required by paragraph 28 of this standard, does the company disclose the nature of the event? Par.28 and 33(a)	✓	✓	✓	X	
119		5. If disclosure of events occurring after the balance sheet date is required by paragraph 28 of this standard, does the company disclose the estimate of the financial effect, or a statement that such estimate cannot be made? Par.28 and 33(b)	✓	✓	✓	X	

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
120	IAS 10 (revised 1999) Events After the Balance Sheet Date	1. Does the enterprise disclose on the face of the balance sheet as a separate component or in the notes the amount of dividends that were proposed after the balance sheet date but before the financial statements were authorised for issue? Par. 12	X	X	X	√
121		2. Does the enterprise disclose the date when the financial statements were authorised for issue and who gave that authorisation? Par. 16	X	X	X	√
122		3. If the enterprise's owners or others have the power to amend the financial statements after issuance, does the enterprise disclose this fact? Par. 16	X	X	X	√
123		4. If the enterprise receives information after the balance sheet date about conditions that existed at the balance sheet date, does the enterprise update disclosures that relate to these conditions, in the light of the new information? Par. 18	X	X	X	√
124		5. Where events occurring after the balance sheet date do not affect the condition of assets or liabilities at the balance sheet date but are of such importance that non-disclosure would affect the ability of the users of the financial statements to make proper evaluations and decisions, does the enterprise disclose the nature of the vents? Par. 20(a)	X	X	X	√
125		6. Where events occurring after the balance sheet date do not affect the condition of assets or liabilities at the balance sheet date but are of such importance that non-disclosure would affect the ability of the users of the financial statements to make proper evaluations and decisions, does the enterprise disclose an estimate of the financial effect, or estimate that such an estimate cannot be made? Par. 20(b)	X	X	X	√
126	IAS 11 (revised 1993) Construction	1. Are revenue and profits on long-term contracts recognised by reference to the stage of completion of the contract in accordance with paragraph 36? (% of completion method)? Par.22	√	√	√	√



No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
	Contracts						
127		2. Does an expected loss on long-term contracts recognised as an expense immediately in accordance with paragraph 36? Par.22	✓	✓	✓	✓	
128		3. Do the financial statements disclose the amount of contract revenue recognised as revenue in the period? Par.39(a)	✓	✓	✓	✓	
129		4. Does the company disclose the methods used to determine the contract revenue recognised? Par.39(b)	✓	✓	✓	✓	
130		5. Does the company disclose the methods used to determine the stage of completion of contracts in progress? Par.39(c)	✓	✓	✓	✓	
131		6. For contracts in progress, does the balance sheet disclose the aggregate amount of cost incurred and recognised profits (less recognised losses) to date? Par.40(a)	✓	✓	✓	✓	
132		7. For contracts in progress, does the balance sheet disclose the amount of advances received? Par.40(b)	✓	✓	✓	✓	
133		8. For contracts in progress, does the balance sheet disclose the amount of retentions? Par.40(c)	✓	✓	✓	✓	
134		9. Does the enterprise present on the balance sheet the gross amount due from customers for contract work as an asset? Par. 42(a)	✓	✓	✓	✓	
135		10. Does the enterprise present on the balance sheet the gross amount due to customers for contract work as a liability? Par. 42(b)	✓	✓	✓	✓	
136	IAS 12 (reformatted 1994) Accounting for Taxes on Income	1. Does the enterprise include the tax expense for the period in the determination of the net income? Par. 38	✓	X	X	X	
137		2. Regarding the taxes on income relating to an item that is charged or credited to shareholders' interests, does the enterprise disclose the amount?	✓	X	X	X	

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
		Par. 39				
138		3. In respect of tax losses, does the enterprise disclose the amount of the tax saving included in net income in the period of the loss in accordance with the criteria in paragraph 25 and 26? Par. 48(a)	√	X	X	X
139		4. In respect of tax losses, does the enterprise disclose the amount of the tax saving included in net income for the current period as a result of the realisation of a tax loss carry-forward that had not been accounted for in the year of the loss? Par. 48(b)	√	X	X	X
140		5. In respect of tax losses, does the enterprise disclose the amount and future availability of tax losses for which the related tax effect have not been included in the net income of any period? Par. 48(c)	√	X	X	X
141		6. Does the enterprise disclose separately the tax expense related to income from the ordinary activities of the enterprise? Par. 49(a)	√	X	X	X
142		7. Does the enterprise disclose separately the tax expense relating to extraordinary items, to fundamental errors, and to changes in accounting policy? Par. 49(b)	√	X	X	X
143	IAS 12 (revised 1996) Income Taxes	1. Does the enterprise recognise current tax for current and prior periods, to the extent unpaid, as a liability? Par. 12	X	√	√	√
144		2. If the amount of tax already paid in respect of current and prior periods exceeds the amount due for those periods, does the enterprise recognised the excess as an asset? Par. 12	X	√	√	√
145		3. Does the enterprise recognised the benefit relating to a tax loss that can be carried back to recover current tax of a previous period as an asset? Par. 13	X	√	√	√
146		4. Does the enterprise measured current tax liabilities (assets) for the current and prior periods at the amount expected to be paid to (recovered from) the	X	√	√	√



No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
		taxation authority, using the tax rates (and tax laws) that have been enacted or substantively enacted by the balance sheet date? Par. 46				
147		5. Does the enterprise recognise current tax as income or an expense and include it in the net profit and loss for the period? Par. 58	X	✓	✓	✓
148		6. Regarding current tax, does the enterprise charge or credit it directly to equity if the tax relates to items that are credited or charged, in the same or a different period, directly to equity? Par. 61	X	✓	✓	✓
149		7. Does the enterprise present separately tax assets and tax liabilities from other assets and liabilities in the balance sheet? Par. 69	X	✓	✓	✓
150		8. If the enterprise has a legally enforceable right to set off the recognised amount of current tax, and intends either to settle on a net basis, or realise the asset and settle the liability simultaneously, does the enterprise offset current tax assets and current tax liabilities? Par. 71	X	✓	✓	✓
151		9. Does the enterprise disclose separately the major component of tax expense (income)? Par. 79	X	✓	✓	✓
152		10. Does the enterprise disclose separately the tax expense (income) relating to extraordinary items recognised during the period? Par. 81(b)	X	✓	✓	✓
153		11. Does the enterprise disclose explanation of changes in the applicable tax rate(s) compared to the previous accounting period? Par. 81(d)	X	✓	✓	✓
154		12. In respect of discontinued operations, does the enterprise disclose separately the tax expense relating to the gain or loss on discontinuance; and the profit or loss from the ordinary activities of the discontinued operation for the period, together with the corresponding amounts for each prior period presented? Par. 81(h)	X	✓	✓	✓
155	IAS 13 (reformatted 1994)	1. Does the balance sheet disclose total amount of current assets and current liabilities? Par. 7	✓	X	X	X

No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
	Presentation of Current Assets and Current Liabilities						
156		2. Does the balance sheet disclose under current assets the item cash and bank balances? Par. 13(a)	√	X	X	X	
157		3. Does the balance sheet disclose under current assets the item trade and other receivable expected? Par. 13(c)	√	X	X	X	
158		4. Does the balance sheet disclose under current assets the item inventories? Par. 13(d)	√	X	X	X	
159		5. Does the balance sheet disclose under current assets the item advanced payments? Par. 13(e)	√	X	X	X	
160		6. Does the balance sheet disclose under current liabilities the item bank and other loans? Par. 15(a)	√	X	X	X	
161		7. Does the balance sheet disclose under current liabilities the item current portion of long-term liabilities? Par. 15(b)	√	X	X	X	
162		8. Does the balance sheet disclose under current liabilities the item trade liabilities and accrued expense? Par. 15(c)	√	X	X	X	
163		9. Does the balance sheet disclose under current liabilities the item taxes payable provision? Par. 15(d)	√	X	X	X	
164		10. Does the balance sheet disclose under current liabilities the item dividend payable? Par. 15(e)	√	X	X	X	
165		11. Does the balance sheet disclose under current liabilities the item deferred revenues? Par. 15(f)	√	X	X	X	
166	IAS 16 (revised 1993) Property, Plant and	1. Are PPE carried at cost less accumulated depreciation? Par. 29	√	√	X	X	



No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
	Equipment (PPE)						
167		2. Does the company depreciate buildings while land is not depreciated? Par. 47	√	√	X	X	
168		3. Does the company disclose, in respect of each class of PPE, the measurement basis used for determining the gross carrying amount, in respect of each class of property, plant and equipment? Par. 66(a)	√	√	X	X	
169		4. When more than one measurement basis has been used, do the financial statements disclose the gross carrying amount for that basis in each category? Par. 66(a)	√	√	X	X	
170		5. Does the company disclose, in respect of each class of PPE, the depreciation methods used? Par. 66(b)	√	√	X	X	
171		6. Does the company disclose, in respect of each class of PPE, the useful lives or the depreciation rates used? Par. 66(c)	√	√	X	X	
172		7. Does the company disclose, in respect of each class of PPE, the gross carrying amount and the accumulated depreciation at the beginning and end of the period? Par. 66(d)	√	√	X	X	
173		8. Does the company analyse movements (reconciliation of the carrying amount at the beginning and end of the period), in respect of each class of PPE, showing; a) additions, b) disposals, c) reduction in carrying amount in accordance with paragraph 56, d) amount written back in accordance with paragraph 59, e) depreciation, and f) other movements? Par. 66(e)	√	√	X	X	
174		9. For each class of property, plant and equipment, does the enterprise disclose the measurement bases used for determining the gross carrying amount? Par. 60(a)	X	X	√	√	
175		10. For each class of property, plant and equipment, when more than one measurement bases used for determining the gross carrying amount, does the	X	X	√	√	

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
		enterprise disclose the gross carrying amount for that basis in each category? Par. 60(a)				
176		11. For each class of property, plant and equipment, does the enterprise disclose the gross carrying amount and the accumulated depreciation (aggregated with accumulated impairment losses) at the beginning and end of the period? Par. 60(d)	X	X	✓	✓
177		12. Does the enterprise disclose a reconciliation of the carrying amount at the beginning and end of the period showing; additions, disposals, depreciation, and other movements? Par. 60(e)	X	X	✓	✓
178		13. Does the enterprise disclose the existence and amounts of restrictions on title, and property, plant and equipment pledged as security for liabilities? Par. 61(a)	X	X	✓	✓
179		14. Does the enterprise disclose the accounting policy for the estimated costs of restoring the site of items of property, plant and equipment? Par. 61(b)	X	X	✓	✓
180		15. Does the enterprise disclose the amount of expenditures on account of property, plant and equipment in the course of construction? Par. 61(c)	X	X	✓	✓
181	IAS 18 (revised 1993) Revenue	1. Do the financial statements disclose the accounting policies adopted for the recognition of revenue including the methods adopted to determine the stage of completion of transactions involving the rendering of services? Par. 35(a)	✓	✓	✓	✓
182		2. Do the financial statements disclose the amount of each significant category of revenue recognised including revenue arising from sales of goods? Par. 35(b; i)	✓	✓	✓	✓
183		3. Do the financial statements disclose the amount of each significant category of revenue recognised including revenue arising from interest? Par. 35(b; iii)	✓	✓	✓	✓
184	.	4. Do the financial statements disclose the amount of each significant	✓	✓	✓	✓



No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
		category of revenue recognised including revenue arising from royalties? Par. 35(b; iv)					
185		5. Do the financial statements disclose the amount of each significant category of revenue recognised including revenue arising from dividends? Par. 35(b; v)	✓	✓	✓	✓	
186		6. Do the financial statements disclose the amount of each significant category of revenue recognised including revenue arising from exchanges of goods? Par. 35(c)	✓	✓	✓	✓	
187	IAS 19 (revised 1993) Retirement Benefit Costs	1. Do the financial statements disclose, in respect of a contribution benefit plan, the amount recognised as an expense or as income during the period? Par. 51(d)	✓	✓	X	X	
188	IAS 19 (revised 1998) Employee Benefits	1. Does the enterprise disclose about contribution benefit plans the total expense recognised in the income statement and the line item of the income statement in which it is included the current service cost? Par. 120(f)	X	X	✓	✓	
189	IAS 20 (reformatted 1994) Accounting for Government Grants and Disclosure of Government Assistance	1. Do the financial statements consider government grants receivable as compensation for expenses or losses already incurred or for the purpose of giving financial support with no future related cost as income of the period in which it becomes receivable, disclosed as an extraordinary item if appropriate? Par. 20	✓	✓	✓	✓	
190		2. Does the company disclose the accounting policy adopted for government grants including the method of presentation in the financial statements? Par. 39(a)	✓	✓	✓	✓	
191		3. Does the company disclose the nature and extent of government grants	✓	✓	✓	✓	

No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
		recognised in the financial statements? Par. 39(b)					
192		4. Does the company disclose indication of other forms of government assistance from which the enterprise has directly benefited? Par. 39(b)	✓	✓	✓	✓	
192		5. Does the company disclose the unfulfilled conditions and other contingencies attaching to government assistance that have been recognised? Par. 39(c)	✓	✓	✓	✓	
193	IAS 21 (revised 1993) Effects of Changes in Foreign Exchange Rates	1. Does the company disclose the amount of exchange differences included in the net profit or loss for the period? Par. 42(a)	✓	✓	✓	✓	
194		2. Does the company disclose the net exchange differences classified as equity as a separate component of equity and a reconciliation of the amount of such exchange differences at the beginning and end of the period? Par. 42(b)	✓	✓	✓	✓	
195		3. Does the company disclose the amount of exchange differences arising during the period which is included in the carrying amount of an asset in accordance with the allowed alternative treatment in paragraph 21? Par. 42(c)	✓	✓	✓	✓	
196		4. Does the company disclose the reason for using a different currency in reporting its financial statements and the reason for any change in the reporting currency? Par. 43	✓	✓	✓	✓	
197		5. When there is a change in the classification of a significant foreign operation, does the company disclose the nature of the change in classification? Par. 44(a)	✓	✓	✓	✓	
198		6. When there is a change in the classification of a significant foreign operation, does the company disclose the reason for the change? Par. 44(b)	✓	✓	✓	✓	



No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
199		7. When there is a change in the classification of a significant foreign operation, does the company disclose the impact of the change in classification on shareholders' equity? Par. 44(c)	√	√	√	√	
200		8. When there is a change in the classification of a significant foreign operation, does the company disclose the impact on net profit or loss for each prior period presented had the change in classification occurred at the beginning of the earliest period presented? Par. 44(d)	√	√	√	√	
201	IAS 23 (revised 1993) Borrowing Costs	1. Do the financial statements disclose the accounting policy adopted for borrowing costs (e.g. interest)? Par. 29(a)	√	√	√	√	
202		2. Do the financial statements disclose the amount of borrowing costs capitalised during the period? Par. 29(b)	√	√	√	√	
203		3. Do the financial statements disclose the capitalisation rate used to determine the amount of borrowing costs eligible for capitalisation? Par. 29(c)	√	√	√	√	
204	IAS 25 (reformatted 1994) Accounting for Investments	1. Does the company distinguish current stock investment from long-term stock investment? Par. 8	√	√	√	√	
205		2. Are current stock investment carried in the balance sheet at either market value or at the lower of cost and market value? Par. 19	√	√	√	√	
206		3. Are long-term stock investment carried in the balance sheet at cost, or at the lower of cost and market value? Par. 23	√	√	√	√	
207		4. Does the company disclose the accounting policy for the determination of the carrying amount of investments? Par. 49(a; i)	√	√	√	√	
208		5. Does the company disclose the accounting policy for the treatment of	√	√	√	√	

No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
		changes in market value of current investments carried at market value? Par. 49(a; ii)					
209		6. Does the company disclose any significant amount in income for interest, royalties, dividend and rentals on long-term and current investment? Par. 49(b; i)	✓	✓		✓	
210		7. Does the company disclose any significant amount in income for profits and losses on disposal of current investments? Par. 49(b; ii)	✓	✓		✓	
211		8. Does the company disclose any significant amount in income for changes in value of such investments? Par. 49(b; iii)	✓	✓		✓	
212		9. Does the company disclose the market value of marketable investments if they are not carried at market value? Par. 49 (c)	✓	✓		✓	
213		10. Does the company disclose the fair value of investment properties if they are accounted for as long-term investments and not carried at fair value? Par. 49(d)	✓	✓		✓	
214		11. Does the company disclose the significant restrictions on the realisability of investments or the remittance of income and proceeds of disposal? Par. 49(e)	✓	✓		✓	
215		12. For enterprise whose main business is the holding of investments, has an analysis of the portfolio of investments been disclosed? Par. 49(h)	✓	✓		✓	
216	IAS 32 (revised 1998) Financial Instruments: Disclosure and Presentation	1. Does the enterprise disclose of the financial risk management objectives and policies, including policies for hedging each major type of forecasted transaction? Par. 43	X	✓		✓	
217		2. Does the enterprise disclose information about the extent and nature of the	X	✓		✓	



No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
		financial instruments, including significant terms and conditions that may affect the amount, timing and certainty of future cash flows? Par. 47(a)					
218		3. Does the enterprise disclose the accounting policy for the methods and significant assumptions applied in estimating fair value of financial assets and financial liabilities that are carried at fair value? Par. 47(b)	X	✓	✓	✓	
219		4. Does the enterprise disclose information about the enterprise's exposure to interest rate risk including contractual repricing or maturity dates, whichever dates are earlier? Par. 56(a)	X	✓	✓	✓	
220		5. Does the enterprise disclose information about the effective interest rates, when applicable? Par. 56(b)	X	✓	✓	✓	
221		6. Does the enterprise disclose information about the amount that best represents its maximum credit risk exposure at the balance sheet date? Par. 66(a)	X	✓	✓	✓	
222		7. Does the enterprise disclose information about the significant concentrations of credit risk? Par. 66(b)	X	✓	✓	✓	
223		8. When the enterprise carries one or more financial assets at an amount in excess of their fair value, does the enterprise disclose the carrying amount and the fair value of either the individual assets or appropriate groupings of those individual assets; and the reasons for not reducing the carrying amount, including the nature of the evidence that provides the basis for management's belief that the carrying amount will be recovered? Par. 88	X	✓	✓	✓	
224	IAS 33 Earnings Per Share (EPS)	1. If the number of ordinary or potential ordinary shares outstanding increases as a result of capitalisation, bonus issue, or share split, or decreases as a result of a reverse share split, and the calculation of basic and diluted earnings per share for all periods presented adjusted retrospectively, does the enterprise disclose this fact? Par. 43	X	✓	✓	✓	

No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
225		2. If these changes presented in the previous question occur after the balance sheet date but before issue of the financial statements and the per share calculations for those and any prior period financial statements presented based on the new number of shares, does the enterprise disclose this fact? Par. 43	X	✓	✓	✓	
226		3. Does the enterprise disclose on the face of the income statement for each class of ordinary shares that has a different right to share in the profit for the period the basic and diluted earnings per share? Par. 47	X	✓	✓	✓	
227		4. Even if the amounts are negative, does the enterprise presents the basic and diluted earnings per share? Par. 48	X	✓	✓	✓	
228		5. Does the enterprise disclose the amounts used as the numerators in calculating basic and diluted earnings per share, and a reconciliation of those amounts to the profit or loss for the period? Par. 49(a)	X	✓	✓	✓	
229		6. Does the enterprise disclose the weighted average number of ordinary shares used as the denominator in calculating basic and diluted earnings per share, and a reconciliation of these denominators to each other? Par. 49(b)	X	✓	✓	✓	
230	IAS 35 Discontinuing Operations	1. Does the enterprise include a description of the discontinuing operation in its financial statements beginning with the financial statements for the period in which the initial disclosure event (as defined in paragraph 16) occurs? Par. 27(a); and	X	X	✓	✓	
231		2. Does the enterprise include the date and nature of the initial disclosure event? Par. 27(b); and	X	X	✓	✓	
232		3. Does the enterprise include the date or period in which the discontinuance is expected to be completed if known or determined? Par. 27(d); and	X	X	✓	✓	
233		4. Does the enterprise include the carrying amounts, as of the balance sheet date, of the total assets and the total liabilities to be disposed? Par. 27(e); and	X	X	✓	✓	



No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
234		5. Does the enterprise include the amounts of revenue, expenses, and pre-tax profit or loss from ordinary activities attributable to the discontinuing operation during the current financial reporting period, and the income tax expense relating thereto as required by paragraph 81(h) of IAS 12? Par. 27(f); and	X	X	✓	✓	
235		6. Does the enterprise include the amount of net cash flows attributable to the operating, investing, and financing activities of the discontinuing operation during the current financial reporting period? Par. 27(g)	X	X	✓	✓	
236		7. When an enterprise disposes of assets or settles liabilities attributable to a discontinuing operation, or enters into binding agreements for the sale or settlement of such assets and liabilities, does the enterprise disclose the amount of the pre-tax gain or loss recognised on the disposal of assets/liabilities on the face of the income statement? Par. 31(a; i)	X	X	✓	✓	
237		8. When an enterprise disposes of assets or settles liabilities attributable to a discontinuing operation, or enters into binding agreements for the sale or settlement of such assets and liabilities, does the enterprise disclose the income tax expense relating to this gain or loss, as required by paragraph 81(h) of IAS 12? Par. 31(a; ii)	X	X	✓	✓	
238		9. When an enterprise disposes of assets or settles liabilities attributable to a discontinuing operation, or enters into binding agreements for the sale or settlement of such assets and liabilities, does the enterprise disclose the net selling price or range of prices (net of the expected disposal costs) of those net assets for which the enterprise has entered into one or more binding sale agreements, the expected timing of receipt of those cash flows and the carrying amount of those net assets? Par. 31(b)	X	X	✓	✓	
239		10. Does the enterprise in its financial statements for periods subsequent to	X	X	✓	✓	

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
		the one in which the initial disclosure event occurs a description of any significant changes in the amount or timing of cash flows relating to the assets and liabilities to be disposed of or settled and the events causing those changes? Par. 33				
240		11. Does the enterprise present separately for each discontinuing operation any disclosure required by this standard? Par. 38	X	X	✓	✓
241	IAS 36 Impairment of Assets	1. For each class of assets, do the financial statements disclose the amount of impairment losses recognised in the income statement during the period and the line item(s) of the income statement in which those impairment losses are included? Par. 113(a)	X	X	✓	✓
242		2. For each class of assets, do the financial statements disclose the amount of reversals of impairment losses recognised in the income statement during the period and the line item(s) of the income statement in which those impairment losses are reversed? Par. 113(b)	X	X	✓	✓
243		3. For each class of assets, do the financial statements disclose the amount on impairment losses recognised directly in equity during the period? Par. 113(c)	X	X	✓	✓
244		4. For each class of assets, do the financial statements disclose the amount of reversals of impairment losses recognised directly in equity during the period? Par. 113(d)	X	X	✓	✓
245		5. If an impairment loss for an individual asset or a cash-generating unit is recognised or reversed during the period and is material to the financial statements of the reporting enterprise as a whole, does the enterprise disclose the events and circumstances that led to the recognition or reversal of the impairment loss? Par. 117(a)	X	X	✓	✓
246		6. If an impairment loss for an individual asset or a cash-generating unit is recognised or reversed during the period and is material to the financial	X	X	✓	✓



No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
		statements of the reporting enterprise as a whole, does the enterprise disclose the amount of the impairment loss recognised or reversed? Par. 117(b)					
247		7. If an impairment loss for an individual asset or a cash-generating unit is recognised or reversed during the period and is material to the financial statements of the reporting enterprise as a whole, does the enterprise disclose, for an individual asset, the nature of the asset? Par. 117(c; i)	X	X	✓	✓	
248		8. If an impairment loss for an individual asset or a cash-generating unit is recognised or reversed during the period and is material to the financial statements of the reporting enterprise as a whole, does the enterprise disclose, for a cash-generating unit, a description of the cash-generating unit (such as whether it is a product line, a plant, a business operation)? Par. 117(d; i)	X	X	✓	✓	
249		9. If impairment losses recognised (reversed) during the period are material in aggregate to the financial statements of the reporting enterprise as a whole, does the enterprise disclose a brief description of the main losses of assets affected by impairment losses (reversals of impairment losses) for which no information is disclosed under paragraph 117? Par. 118(a)	X	X	✓	✓	
250		10. If impairment losses recognised (reversed) during the period are material in aggregate to the financial statements of the reporting enterprise as a whole, does the enterprise disclose a brief description of the main events and circumstances that led to the recognition (reversals) of these impairment losses for which no information is disclosed under paragraph 117 ? Par. 118(b)	X	X	✓	✓	
251	IAS 37 Provisions, Contingent Liabilities and	1. Does the enterprise disclose the carrying amount at the beginning and end of the period for each class of provision? Par. 84(a)	X	X	✓	✓	

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
	Contingent Assets					
252		2. Does the enterprise disclose additional provisions made in the period, including increases to existing provisions? Par. 84(b)	X	X	✓	✓
253		3. Does the enterprise disclose amount used (i.e. incurred and charged against the provision) for each for each class of provision? Par. 84(c)	X	X	✓	✓
254		4. Does the enterprise disclose unused amounts reversed during the period for each class of provision? Par. 84(d)	X	X	✓	✓
255		5. Does the enterprise disclose the increase during the period in the discounted amount arising from the passage of time and the effect of any change in the discount rate for each class of provision? Par. 84(e)	X	X	✓	✓
256		6. Does the enterprise disclose a brief description of the nature of the obligation and the expected timing of any resulting outflows of economic benefits for each class of provision? Par. 85(a)	X	X	✓	✓
257		7. Does the enterprise disclose an indication of the uncertainties about the amount or timing of those outflows by providing information about major assumptions made concerning future events as addressed in paragraph 48? Par. 85(b)	X	X	✓	✓
258		8. Does the enterprise disclose the amount of any expected reimbursement, stating the amount of any asset that has been recognised for that expected reimbursement for each class of provision? Par. 85(c)	X	X	✓	✓
259		9. Unless the possibility of any outflow in settlement is remote, does the enterprise disclose for each class of contingent liability at the balance sheet date a brief description of the nature of the contingent liability and, where practicable an estimate of its financial effect, measured under paragraphs 36-52? Par. 86(a); and	X	X	✓	✓
260		10. An indication of the uncertainties relating to the amount or timing of any	X	X	✓	✓



No.	IAS	Item	Disclosure Index				
			1995-1997	1998	1999	2000	
		outflow? Par. 86(b); and					
261		11. The possibility of any reimbursement? Par. 86(c)	X	X	✓	✓	
262		12. Where an inflow of economic benefits is probable, does the enterprise disclose a brief description of the nature of the contingent asset at the balance sheet date, and, where practicable, an estimate of their financial effect, measured using the principles set out for provisions in paragraphs 36-52? Par. 89	X	X	✓	✓	
263		13. Where any of the information required by paragraphs 86 and 89 is not provided because it is not practicable, does the enterprise disclose this fact? Par. 91	X	X	✓	✓	
264		14. In extremely rare cases, disclosure of some or all of the information required by paragraph 84-89 can be expected to prejudice seriously the position of the enterprise in a dispute with other parties on the subject matter of the provision, contingent liability or contingent asset. In such cases, does the enterprise disclose the general nature of the dispute, together with the fact that, and reason why, the information has not been disclosed? Par. 92	X	X	✓	✓	
265		15. The effect of adopting this Standard on its effective date (or earlier) should be reported as an adjustment to the opening balance of retained earnings for the period in which the Standard is first adopted. Enterprises are encouraged, but not required, to adjust the opening balance of retained earnings for the earliest period presented and to restate comparative information. If comparative information in not restated, does the enterprise disclose this fact? Par. 93	X	X	✓	✓	
266	IAS 38 Intangible Assets	1. Does the enterprise recognise internally generated brands, mastheads, publishing titles, customer lists and items similar in substance as intangible assets? To do so is non-compliance. Par. 51	X	X	✓	✓	

No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
267		2. For each class of intangible assets, distinguishing between internally generated intangible assets and other intangible assets, does the enterprise disclose the useful lives or the amortisation rates used? Par. 107(a)	X	X	✓	✓
268		3. For each class of intangible assets, distinguishing between internally generated intangible assets and other intangible assets, does the enterprise disclose the amortisation methods used? Par. 107(b)	X	X	✓	✓
269		4. For each class of intangible assets, distinguishing between internally generated intangible assets and other intangible assets, does the enterprise disclose the gross carrying amount and the accumulated amortisation (aggregated with accumulated impairment losses) at the beginning and end of the period? Par. 107(c)	X	X	✓	✓
270		5. For each class of intangible assets, distinguishing between internally generated intangible assets and other intangible assets, does the enterprise disclose the line item(s) of the income statement in which the amortisation of intangible assets is included? Par. 107(d)	X	X	✓	✓
271		6. For each class of intangible assets, distinguishing between internally generated intangible assets and other intangible assets, does the enterprise disclose a reconciliation of the carrying amount at the beginning and end of the period showing; a) addition, indicating separately those from internal development and through business combination, b) retirements and disposal, from impairment losses recognised or reversed directly in equity under IAS 36, Impairment of Assets (if any), d) impairment losses recognised in the income statement during the period under IAS 36 (if any), e) amortisation recognised during the period? Par. 107(e)	X	X	✓	✓
272		7. If an intangible asset is amortised over more than twenty years, do the financial statements disclose the reasons why the presumption that the useful	X	X	✓	✓



No.	IAS	Item	Disclosure Index			
			1995-1997	1998	1999	2000
		life of an intangible asset will not exceed twenty years from the date when the asset is available for use is rebutted and what are the factor(s) that played a significant role in determining the useful life of the asset? Par. 111(a)				
273		8. Do the financial statements disclose the aggregate amount of research and development expenditure recognised as an expense during the period? Par. 115	X	X	√	√

## APPENDIX 2

## History of international accounting standards concerned

Exposure Draft and Publication Date	Final IAS and Publication Date	Effective	Comments
E1 Disclosure of Accounting Policies (March 1974)	IAS 1 Disclosure of Accounting Policies (January 1975)	1.1.1975	Reformatted in 1994, Superseded by IAS 1 Presentation of Financial Statements (Effective 1.7.1998)
E2 Valuation and Presentation of Inventories in the Context of the Historical Cost System (September 1974)	IAS 2 Valuation and Presentation of Inventories in the Context of the Historical Cost System (October 1975)	1.1.1976	Superseded by IAS 2 Inventories (Effective 1.1.1995)
E3 Consolidated Financial Statements and the Equity Method of Accounting (December 1974)	IAS3 Consolidated Financial Statements (June 1976)	1.1.1977	Superseded by IAS 27 and IAS 28 (Effective 1.1.1990)
E4 Depreciation Accounting (June 1975)	IAS 4 Depreciation Accounting (June 1976)	1.1.1977	Reformatted in 1994
E5 Information to be Disclosed in Financial Statements (June 1975)	IAS 5 Information to be Disclosed in Financial Statements (October 1976)	1.1.1977	Reformatted in 1995 Superseded by IAS 1 Presentation of Financial Statements (Effective 1.7.1998)
E6 Accounting Treatment of Changing Prices (January 1976)	IAS 6 Accounting Response to Changing Prices (January 1977)	1.1.1978	Superseded by IAS 15 (Effective 1.1.1983)
E7 Statement of Source and Application of Funds (June 1976)	IAS 7 Statement of Changes in Financial Position (October 1977)	1.1.1979	Superseded by IAS 7 Cash Flow Statements (Effective 1.1.1994)
E8 The Treatment in the Income Statement of Unusual Items and Changing in Accounting Estimates and Accounting Policies (October 1976)	IAS 8 Unusual and Prior Period Items and Changes in Accounting Policies (February 1978)	1.1.1979	Superseded by IAS 8, Net Profit or Loss for the period. Fundamental Errors and Changes in Accounting Policies. (Effective 1.1.1995)



<b>Exposure Draft and Publication Date</b>	<b>Final IAS and Publication Date</b>	<b>Effective</b>	<b>Comments</b>
E9 Accounting for Research and Development Costs. (February 1977)	IAS 9 Accounting for Research and Development Activities. (July 1978)	1.1.1980	Superseded by IAS 9, Research and Development Costs (Effective 1.1.1995)
E10 Contingencies and Events Occurring After the Balance Sheet Date (July 1977)	IAS 10 Contingencies and Events Occurring After the Balance Sheet Date (October 1978)	1.1.1980	Reformatted in 1995
E11 Accounting for Foreign Transactions and Translation of Foreign Financial Statements (December 1977)			Re-drafted and re-exposed as E23
E12 Accounting for Construction Contracts (December 1977)	IAS 11 Accounting for Construction Contracts (March 1979)	1.1.1980	Superseded by IAS 11, Construction Contracts (Effective 1.1.1995)
E13 Accounting for Taxes on Income (April 1978)	IAS 12 Accounting for Taxes on Income (July 1979)	1.1.1981	Reformatted in 1995 Superseded by IAS 12, Income Taxes (Effective 1.1.1998)
E14 Current Assets and Current Liabilities (July 1978)	IAS 13 Presentation of Current Assets and Current Liabilities (November 1979)	1.1.1981	Reformatted in 1995 Superseded by IAS 1, Presentation of Financial Statements (Effective 1.7.1998)
E15 Reporting Financial Information by Segment (March 1980)	IAS 14 Reporting Financial Information by Segment (August 1981)	1.1.1983	Reformatted in 1995 Superseded by IAS 14, Segment Reporting (Effective 1.7.1998)
E16 Accounting for Retirement Benefits in the Financial Statements of Employers (April 1980)	IAS 19 Accounting for Retirement Benefits in the Financial Statements of Employers (January 1983)	1.1.1985	Superseded by IAS 19, Retirement Benefit Costs (Effective 1.1.1995)
E17 Information Reflecting the Effects of Changing Prices (August 1980)	IAS 15 E17 Information Reflecting the Effects of Changing Prices (November 1981)	1.1.1983	Reformatted in 1995

<b>Exposure Draft and Publication Date</b>	<b>Final IAS and Publication Date</b>	<b>Effective</b>	<b>Comments</b>
E18 Accounting for Property, Plant and Equipment in the Context of the Historical Cost System (August 1980)	IAS 16 Accounting for Property, Plant and Equipment (March 1982)	1.1.1983	Superseded by IAS 16, Property, Plant and Equipment (Effective 1.1.1995)
E19 Accounting for Leases (October 1980)	IAS 17 Accounting for Leases (September 1982)	1.1.1984	Reformatted in 1995 'See also E56'
E20 Revenue Recognition (April 1981)	IAS 18 Revenue Recognition (December 1982)	1.1.1984	Superseded by IAS 18, Revenue (Effective 1.1.1995)
E21 Accounting for Government Grants and Disclosure of Government Assistance (September 1981)	IAS 20 Accounting for Government Grants and Disclosure of Government Assistance (April 1983)	1.1.1984	Reformatted in 1995
E22 Accounting for Business Combinations (September 1981)	IAS 22 Accounting for Business Combinations (November 1983)	1.1.1985	Superseded by IAS 22, Business Combinations (Effective 1.1.1995)
E23 Accounting for the Effects of Changes in Foreign Exchange Rates (March 1982)	IAS 21 Accounting for the Effects of Changes in Foreign Exchange Rates (July 1983)	1.1.1985	Superseded by IAS 21, The Effects of Changes in Foreign Exchange Rates, (Effective 1.1.1995)
E24 Capitalisation of Borrowing Costs (November 1982)	IAS 23 Capitalisation of Borrowing Costs (March 1984)	1.1.1986	Superseded by IAS 23, Borrowing Costs (Effective 1.1.1995)
E25 Disclosure of Related Party Transactions (March 1983)	IAS 24 Related Party Disclosures (July 1984)	1.1.1986	Reformatted in 1995
E26 Accounting for Investments (October 1984)	IAS 25 Accounting for Investments (March 1986)	1.1.1987	Reformatted in 1995 Revision proposed in E62
E27 Accounting and Reporting by Retirement Benefit Plans (July 1985)	IAS 26 Accounting and Reporting by Retirement Benefit Plans (January 1987)	1.1.1988	Reformatted in 1995
E28 Accounting for Investments in Associates and Joint Ventures (July 1986)	IAS 28 Accounting for Investments in Associates (April 1989)	1.1.1990	Reformatted in 1995 Consequential amendments a998 as result of IAS 38



<b>Exposure Draft and Publication Date</b>	<b>Final IAS and Publication Date</b>	<b>Effective</b>	<b>Comments</b>
E29 Disclosure in the Financial Statements of Banks (April 1987)			Re-drafted and re-exposed as E34
E30 Consolidated Financial Statements and Accounting for Investments in Subsidiaries (September 1987)	IAS 27 Consolidated Financial Statements and Accounting for Investments in Subsidiaries (April 1989)	1.1.1990	Reformatted in 1995
E31 Financial reporting in Hyperinflationary Economies (November 1987)	IAS 29 Financial reporting in Hyperinflationary Economies (July 1989)	1.1.1990	Reformatted in 1995
E32 Comparability of Financial Statements (January 1989)	Statement of Intent on Comparability of Financial Statements (July 1990)		Ten revised International Accounting Standards published December 1993
E33 Accounting for Taxes on Income (January 1989)			Re-drafted and re-exposed as E49
E34 Disclosures in the Financial Statements of Banks and Similar Financial Institutions (July 1989)	IAS 30 Disclosures in the Financial Statements of Banks and Similar Financial Institutions (August 1990)	1.1.1991	Re-formatted for International Accounting Standards (Effective 1.1.1995)
E35 Financial Reporting of Interests in Joint Ventures (December 1989)	IAS 31 Financial Reporting of Interests in Joint Ventures (December 1990)	1.1.1992	Reformatted in 1995 Consequential amendments 1998 as a result of IAS 38
E36 Cash Flow Statements (July 1991)	IAS 7 (Revised 1992) Cash Flow Statements (December 1992)	1.1.1994	Superseded IAS 7, Statement of Changes in Financial Position
E37 Research and Development Activities (August 1991)	IAS 9 (Revised 1993) Research and Development Costs (December 1993)	1.1.1995	Revised Standard which formed part of the Comparability/Improvements Project Superseded by IAS 38, effective 1.7.1999
E38 Inventories (August 1991)	IAS 2 (Revised 1992) Inventories (December 1993)	1.1.1995	Revised Standard which formed part of the Comparability/Improvements Project

<b>Exposure Draft and Publication Date</b>	<b>Final IAS and Publication Date</b>	<b>Effective</b>	<b>Comments</b>
E39 Capabilities of Borrowing Costs (August 1991)	IAS 23 (Revised 1992) Borrowing Costs (December 1993)	1.1.1995	Revised Standard which formed part of the Comparability/Improvements Project
E40 Financial Instruments (September 1991)			Re-drafted and re-exposed as E48
E41 Revenue Recognition (May 1992)	IAS 18 (Revised 1993) Revenue (December 1993)	1.1.1995	Revised Standard which formed part of the Comparability/Improvements Project
E42 Construction Contracts (May 1992)	IAS 16 (Revised 1993) Construction Contracts (December 1993)	1.1.1995	Revised Standard which formed part of the Comparability/Improvements Project
E43 Property, Plant and Equipment (May 1992)	IAS 16 (Revised 1993) Property, Plant and Equipment (December 1993)	1.1.1995	Revised Standard which formed part of the Comparability/Improvements Project Consequential amendments as a result of IAS 38, effective 1.7.1999
E44 The Effects of Changes in Foreign Exchange Rates (May 1992)	IAS 21 (Revised 1993) The Effects of Changes in Foreign Exchange Rates (December 1993)	1.1.1995	Revised Standard which formed part of the Comparability/Improvements Project
E45 Business Combination (June 1992)	IAS 23 (Revised 1993) Business Combination (December 1993)	1.1.1995	Revised Standard which formed part of the Comparability/Improvements Project
E46 Extraordinary Items, Fundamental Errors and Changes in Accounting Policies (July 1992)	IAS 8 (Revised 1993) Net Profit or Loss for the Period, Fundamental Errors and Changes in Accounting Policies (December 1993)	1.1.1995	Revised Standard which formed part of the Comparability/Improvements Project
E47 Retirement Benefit Costs (December 1992)	IAS 19 (Revised 1993) Retirement Benefit Costs (December 1993)	1.1.1995	Revised Standard which formed part of the Comparability/Improvements Project



<b>Exposure Draft and Publication Date</b>	<b>Final IAS and Publication Date</b>	<b>Effective</b>	<b>Comments</b>
E48 Financial Instruments (January 1994)	IAS 32 Financial instruments: Disclosure and Presentation (June 1995)	1.1.1996	This portion of E48 relating to disclosure and presentation were finalised in IAS 32 E62 addresses the recognition and measurements issues not covered in IAS 32.
E49 Income Taxes (October 1994)	IAS 12 (Revised 1996) Income Taxes (October 1996)	1.1.1998	Revised Standard supersedes IAS 12, Accounting Taxes on Income. 'See also E33'
E50 Intangible Assets (June 1995)			Re-drafted and re-exposed as E60
E51 Reporting Financial Information by Segment (December 1995)	IAS 14 (Revised 1997) Segment Reporting (August 1997)	1.7.1998	Revised Standard supersedes IAS 14, Reporting Financial Information by Segment
E52 Earnings Per Share (January 1996)	IAS 33 Earnings Per Share (February 1997)	1.1.1998	
E53 Presentation of Financial Statements (July 1996)	IAS 1 (Revised 1997) Presentation of Financial Statements (August 1997)	1.7.1998	Revised Standard supersedes IAS 12, IAS 5 and IAS 13.
E54 Employee Benefits (October 1996)	IAS 19 (Revised 1998) Employee Benefits (February 1998)	1.1.1999	Revised Standard supersedes IAS 19, Retirement Benefit Costs.
E55 Impairment of Assets (May 1997)	IAS 36 E55 Impairment of Assets (June 1998)	1.7.1999	
E56 Leases (April 1997)	IAS 17 (Revised 1997) Leases (December 1997)	1.1.1999	
E58 Discontinuing Operations (August 1997)	IAS 35 Discontinuing Operations (June 1998)	1.1.1999	Supersedes paragraphs 19-22 of IAS 8.

<b>Exposure Draft and Publication Date</b>	<b>Final IAS and Publication Date</b>	<b>Effective</b>	<b>Comments</b>
E59 Provisions, Contingent Liabilities and Contingent Assets (August 1997)	IAS 37 Provisions, Contingent Liabilities and Contingent Assets (September 1998)	1.7.1999	Supersedes those parts of IAS 10 that deal with contingencies. Events after balance sheet date are being addressed in a separate IASC project.
E60 Intangible Assets (August 1997)	IAS 38 Intangible Assets (September 1998)	1.7.1999	Supersedes by IAS 9. Also resulted in consequential amendments to IAS 16, 28, and 31 relating to IAS 38.
E61 Business Combinations (August 1997)	IAS 22 Business Combinations (September 1998)	1.7.1999	Limited changes to IAS 22, Business Combinations, relating to IAS 38
E62 Financial Instruments: Recognition and Measurements (June 1998)			Comments due by 30 September 1998.

Sources: Adopted from Cairns (1995 and 1998), Epstein & Mirza (1999) and IASC (1998)



APPENDIX 3  
EXTENT OF DISCLOSURE IN COMPLIANCE WITH IAS

No.	Jordanian Industrial Companies	Industry Types	1995	1996	1997	1998	1999	2000
1	Arab Aluminium Industry / ARAL	Machinery and Metal Industry	0.2727	0.2727	0.2878	0.3485	0.4	0.4
2	National Steel Industry	Machinery and Metal Industry	0.3958	0.3958	0.4255	0.4255	0.4255	0.5636
3	The Jordan Pipes Manufacturing	Machinery and Metal Industry	0.3962	0.4151	0.4231	0.5625	0.5744	0.6122
4	Aladdin Industries	Machinery and Metal Industry	0.3968	0.3968	0.4127	0.4444	0.4762	0.4762
5	National Cable and Wire Manufacturing	Machinery and Metal Industry	0.4218	0.4218	0.3846	0.3906	0.5246	0.5263
6	Jordan New Cable Company	Machinery and Metal Industry	0.589	0.55	0.49	0.579	0.644	0.644
7	Jordan Steel	Machinery and Metal Industry	0.4035	0.4181	0.4407	0.4615	0.4717	0.6717
8	Arab Electrical Industries	Machinery and Metal Industry	0.4677	0.4531	0.4531	0.4839	0.5	0.5
9	RUM Metal Manufacturing	Machinery and Metal Industry	0.4915	0.4915	0.5085	0.5085	0.5085	0.5424
10	The Public Mining	Mining and Building Equipment	0.4678	0.4687	0.4687	0.5661	0.6666	0.6885
11	Jordan Ceramic Industries	Mining and Building Equipment	0.5357	0.5536	0.5714	0.5714	0.6071	0.6607
12	Jordan Phosphate Mines	Mining and Building Equipment	0.4098	0.4246	0.4324	0.7462	0.8965	0.9138
13	National Industries	Mining and Building Equipment	0.5079	0.5079	0.5167	0.5167	0.5161	0.1607
14	RAFIA Industries	Mining and Building Equipment	0.591	0.5692	0.5692	0.5846	0.5846	0.5846

No.	Jordanian Industrial Companies	Industry Types	1995	1996	1997	1998	1999	2000
15	Attanqeeb Construction Material	Mining and Building Equipment	0.377	0.375	0.3871	0.3871	0.3729	0.3729
16	Jordan Cement Factories	Mining and Building Equipment	0.6441	0.6441	0.678	0.6949	0.712	0.712
17	Jordan Industrial Resources Co.	Mining and Building Equipment	0.5167	0.4833	0.4677	0.4839	0.5085	0.5085
18	Jordan Petroleum Refinery	Mining and Building Equipment	0.4407	0.4746	0.5085	0.5424	0.5424	0.5763
19	Arab Potash	Mining and Building Equipment	0.5555	0.5555	0.5873	0.6842	0.807	0.807
20	International Ceramic Industries	Mining and Building Equipment	0.3846	0.2692	0.421	0.42	0.4694	0.4694
21	The Jordan Worsted Mills	Textile	0.3333	0.3333	0.3492	0.4127	0.4193	0.4516
22	The Jordan Tanning	Textile	0.5357	0.5357	0.5357	0.5893	0.5893	0.5893
23	Woollen Industries	Textile	0.361	0.377	0.3968	0.4615	0.44	0.44
24	Jordan Rock Wool Industry	Textile	0.5487	0.5625	0.5454	0.5606	0.5606	0.5757
25	EL-ZAY Ready Wear Manufacturing	Textile	0.5	0.5	0.4918	0.5246	0.5574	0.614
26	International Textile Manufacturing	Textile	0.4167	0.4375	0.4375	0.5	0.5	0.5
27	National Textile and Plastic Industries	Textile	0.42	0.4286	0.42	0.449	0.4792	0.4898
28	Jordan Dairy	Food and Other Services	0.4839	0.4839	0.4762	0.4921	0.5079	0.5238
29	General investment	Food and Other Services	0.5085	0.5246	0.5593	0.5763	0.5763	0.611
30	International Tobacco and Cigarettes	Food and Other Services	0.459	0.459	0.4839	0.5806	0.6316	0.6491
31	Arab Food and Medical Appliances	Food and Other Services	0.2712	0.3	0.3279	0.3444	0.3333	0.3333



No.	Jordanian Industrial Companies	Industry Types	1995	1996	1997	1998	1999	2000
32	Universal Modern Industries Co. for Edible Oil	Food and Other Services	0.3871	0.4	0.4489	0.5686	0.5645	0.5892
33	Kawther Investment	Food and Other Services	0.3389	0.3443	0.35	0.3278	0.4035	0.4035
34	Arab Investment and International Trade	Food and Other Services	0.459	0.459	0.4915	0.5085	0.5254	0.5085
35	Livestock and Poultry	Food and Other Services	0.4333	0.4333	0.4333	0.3968	0.4333	0.4333
36	The Union Chemical Tobacco and Cigarettes Industries	Food and Other Services	0.3478	0.4333	0.4375	0.4821	0.6481	0.8928
37	Pearl Sanitary Paper Converting	Food and Other Services	0.4347	0.5445	0.5272	0.5818	0.5833	0.6038
38	The Arab Pharmaceutical Manufacturing	Chemical	0.5385	0.5556	0.619	0.6452	0.678	0.678
39	The Industrial, Commercial and Agricultural / Al-ENTAG	Chemical	0.5968	0.606	0.6094	0.629	0.65	0.6964
40	The Arab Chemical Detergents Industries	Chemical	0.4516	0.4603	0.4762	0.5322	0.6065	0.6379
41	Dar Al-Dawa Development and Investment	Chemical	0.5	0.4861	0.4722	0.5555	0.5873	0.6032
42	Intermediate Petrochemicals Industries	Chemical	0.5106	0.5454	0.5454	0.6225	0.6225	0.6225

No.	Jordanian Industrial Companies	Industry Types	1995	1996	1997	1998	1999	2000
43	Arab Centre for Pharmaceuticals and Chemicals	Chemical	0.5238	0.5238	0.5238	0.5238	0.5238	0.5238
44	Jordan Chemical Industries	Chemical	0.4545	0.4737	0.5087	0.583	0.585	0.6
45	Universal Chemical Industries	Chemical	0.4677	0.4603	0.4603	0.4838	0.4838	0.5161
46	Jordan Industries and Match /JIMCO	Chemical	0.3833	0.3833	0.3833	0.3833	0.4167	0.3548
47	Jordan Sulpha Chemicals	Chemical	0.4127	0.3968	0.4286	0.3913	0.3913	0.4286
48	Middle East Pharmaceuticals and Chemical Med. Appliances	Chemical	0.4138	0.3965	0.4098	0.3667	0.4262	0.48
49	AL-RAZI Pharmaceutical Industries	Chemical	0.34	0.36	0.36	0.44	0.5167	0.6557
50	Union Chemical and Vegetable Oil Industries	Chemical	0.5085	0.5593	0.5738	0.5667	0.6	0.6



APPENDIX 4

CORRELATIONS AMONG SELECTED COMPANY-SPECIFIC FACTORS AND STEPWISE REGRESSION RESULTS

Pearson Correlation Coefficients – 1995\*

	Audit Firm	Size	Machinery and Metal Industry	Mining Building Equipment and	Textile	Chemical	Profitability
Size	0.41 (0.003)						
Machinery and Metal Industry	-0.098 (0.497)	0.054 (0.709)					
Mining and Building Equipment	0.153 (0.288)	0.418 (0.003)	-0.249 (0.081)				
Textile	0.217 (0.129)	-0.189 (0.189)	-0.189 (0.189)	-0.214 (0.135)			
Chemical	-0.016	-0.116	-0.278	-0.315	-0.239		

Pearson Correlation Coefficients – 1995\*

	Audit Firm	Size	Machinery and Metal Industry	Mining and Building Equipment	Textile	Chemical	Profitability
	(0.914)	(0.422)	(0.051)	(0.026)	(0.094)		
Profitability	0.003	0.243	0.043	0.216	-0.123	-0.153	
	(0.986)	(0.088)	(0.769)	(0.132)	(0.393)	(0.288)	
Structure	0.166	0.281	0.067	0.17	-0.065	-0.08	-0.412
	(0.249)	(0.048)	(0.643)	(0.237)	(0.654)	(0.58)	(0.003)

\* P-values at the 0.05 level (two-tailed) are provided in parentheses.

Pearson Correlation Coefficients – 1996\*

	Audit Firm	Size	Machinery and Metal Industry	Mining and Building Equipment	Textile	Chemical	Profitability
Size	0.38						
	0.006						
Machinery and Metal Industry	-0.116	0.026					
	(0.42)	(0.858)					



Pearson Correlation Coefficients – 1996\*

	Audit Firm	Size	Machinery and Metal Industry	Mining Building Equipment	Textile	Chemical	Profitability
Mining and Building Equipment	0.23 (0.108)	0.42 (0.002)	-0.249 (0.081)				
Textile	0.197 (0.17)	-0.21 (0.143)	-0.189 (0.189)	-0.214 (0.135)			
Chemical	-0.04 (0.78)	-0.125 (0.389)	-0.278 (0.051)	-0.315 (0.026)	-0.239 (0.094)		
Profitability	0.052 (0.719)	0.261 (0.067)	-0.014 (0.926)	0.048 (0.743)	-0.026 (0.856)	-0.138 (0.339)	
Structure	0.047 (0.744)	0.176 (0.222)	-0.001 (0.992)	0.192 (0.181)	-0.179 (0.214)	-0.104 (0.472)	-0.561 (0.0001)

\* P-values at the 0.05 level (two-tailed) are provided in parentheses.

Pearson Correlation Coefficients – 1997\*

	Audit Firm	Size	Machinery and Metal Industry	Mining and Building Equipment	Textile	Chemical	Profitability
Size	0.378 (0.007)						
Machinery and Metal Industry	-0.098 (0.497)	0.014 (0.924)					
Mining and Building Equipment	0.257 (0.072)	0.406 (0.003)	-0.249 (0.081)				
Textile	0.094 (0.517)	-0.24 (0.094)	-0.189 (0.189)	-0.214 (0.135)			
Chemical	-0.113 (0.433)	-0.103 (0.477)	-0.278 (0.051)	-0.315 (0.026)	-0.239 (0.094)		
Profitability	0.052 (0.72)	0.171 (0.236)	-0.128 (0.375)	-0.14 (0.331)	-0.016 (0.911)	0.167 (0.247)	



Pearson Correlation Coefficients – 1997\*

	Audit Firm	Size	Machinery and Metal Industry	Mining and Building Equipment	Textile	Chemical	Profitability
Structure	-0.135	0.049	0.052	0.085	-0.249	-0.026	-0.635
	(0.349)	(0.734)	(0.721)	(0.556)	(0.081)	(0.857)	(0.0001)

\* P-values at the 0.05 level (two-tailed) are provided in parentheses.

Pearson Correlation Coefficients – 1998\*

	Audit Firm	Size	Machinery and Metal Industry	Mining and Building Equipment	Textile	Chemical	Profitability
Size	0.411						
	(0.003)						
Machinery and Metal Industry	-0.08	-0.016					
	(0.583)	(0.913)					
Mining and Building Equipment	0.284	0.4	-0.249				
	(0.045)	(0.004)	(0.081)				

Pearson Correlation Coefficients – 1998\*

	Audit Firm	Size	Machinery and Metal Industry	Mining Building Equipment	Textile	Chemical	Profitability
Textile	0.113 (0.434)	-0.215 (0.133)	-0.189 (0.189)	-0.214 (0.135)			
Chemical	-0.09 (0.5360)	-0.083 (0.567)	-0.278 (0.051)	-0.315 (0.026)	-0.239 (0.094)		
Profitability	0.004 (0.977)	0.257 (0.072)	-0.173 (0.229)	-0.05 (0.733)	-0.041 (0.775)	0.11 (0.445)	
Structure	-0.187 (0.194)	-0.056 (0.7)	-0.07 (0.631)	0.091 (0.532)	-0.065 (0.6540)	0.016 (0.91)	-0.6 (0.0001)

\* P-values at the 0.05 level (two-tailed) are provided in parentheses.

Pearson Correlation Coefficients – 1999\*

	Audit Firm	Size	Machinery and Metal Industry	Mining Building Equipment	Textile	Chemical	Profitability
Size	0.357 (0.011)						



Pearson Correlation Coefficients – 1999\*

	Audit Firm	Size	Machinery and Metal Industry	Mining and Building Equipment	Textile	Chemical	Profitability
Machinery and Metal Industry	-0.116 (0.42)	-0.007 (0.964)					
Mining and Building Equipment	0.332 (0.018)	0.372 (0.008)	-0.249 (0.081)				
Textile	0.075 (0.603)	-0.219 (0.127)	-0.189 (0.189)	-0.214 (0.135)			
Chemical	-0.137 (0.344)	-0.069 (0.634)	-0.278 (0.051)	-0.315 (0.026)	-0.239 (0.094)		
Profitability	0.307 (0.030)	0.234 (0.102)	-0.066 (0.651)	-0.007 (0.963)	-0.05 (0.729)	-0.032 (0.826)	
Structure	-0.205 (0.1530)	-0.006 (0.9650)	0.083 (0.567)	0.1 (0.49)	-0.072 (0.619)	-0.145 (0.314)	-0.571 (0.0001)

\* P-values at the 0.05 level (two-tailed) are provided in parentheses.

Pearson Correlation Coefficients – 2000\*

	Audit Firm	Size	Machinery and Metal Industry	Mining Building Equipment and	Textile	Chemical	Profitability
Size	0.349 (0.013)						
Machinery and Metal Industry	-0.193 (0.1790)	-0.008 (0.954)					
Mining and Building Equipment	0.39 (0.005)	0.331 (0.0190)	-0.249 90.081)				
Textile	0.113 (0.434)	-0.228 (0.111)	-0.189 (0.189)	-0.214 (0.135)			
Chemical	-0.09 (0.5360)	-0.059 (0.684)	-0.278 (0.051)	-0.315 (0.026)	-0.239 (0.0940)		
Profitability	0.063 (0.665)	0.052 (0.72)	0.047 (0.745)	-0.113 (0.436)	-0.136 (0.347)	0.067 (0.642)	



Pearson Correlation Coefficients – 2000\*

	Audit Firm	Size	Machinery and Metal Industry	Mining and Building Equipment	Textile	Chemical	Profitability
Structure	-0.109	0.051	-0.033	0.117	-0.038	-0.075	-0.598
	(0.4520)	(0.726)	(0.8180)	(0.4170)	(0.795)	(0.605)	(0.0001)

\* P-values at the 0.05 level (two-tailed) are provided in parentheses.

Pearson Correlation Coefficients – 1995-2000\*

	Audit Firm	Size	Machinery and Metal Industry	Mining and Building Equipment	Textile	Chemical	Profitability
Size	0.38						
	(0)						
Machinery and Metal Industry	-0.117	0.01					
	(0.043)	(0.8580)					
Mining and Building Equipment	0.274	0.391	-0.249				
	(0)	(0)	(0)				

Pearson Correlation Coefficients – 1995-2000\*

	Audit Firm	Size	Machinery and Metal Industry	Mining Building Equipment and	Textile	Chemical	Profitability
Textile	0.135	-0.217	-0.189	-0.214			
	(0.019)	(0)	(0.001)	(0)			
Chemical	-0.081	-0.092	-0.278	-0.315	-0.239		
	(0.163)	(0.1110)	(0)	(0)	(0)		
Profitability	0.085	0.188	-0.041	-0.016	-0.068	0.007	
	(0.144)	(0.001)	(0.474)	(0.784)	(0.239)	(0.902)	
Structure	-0.091	0.065	0.011	0.114	-0.102	-0.065	-0.574
	(0.117)	(0.264)	(0.845)	(0.048)	(0.077)	(0.261)	(0.0001)

\* P-values at the 0.05 level (two-tailed) are provided in parentheses.



Stepwise regression Results 1995-2000

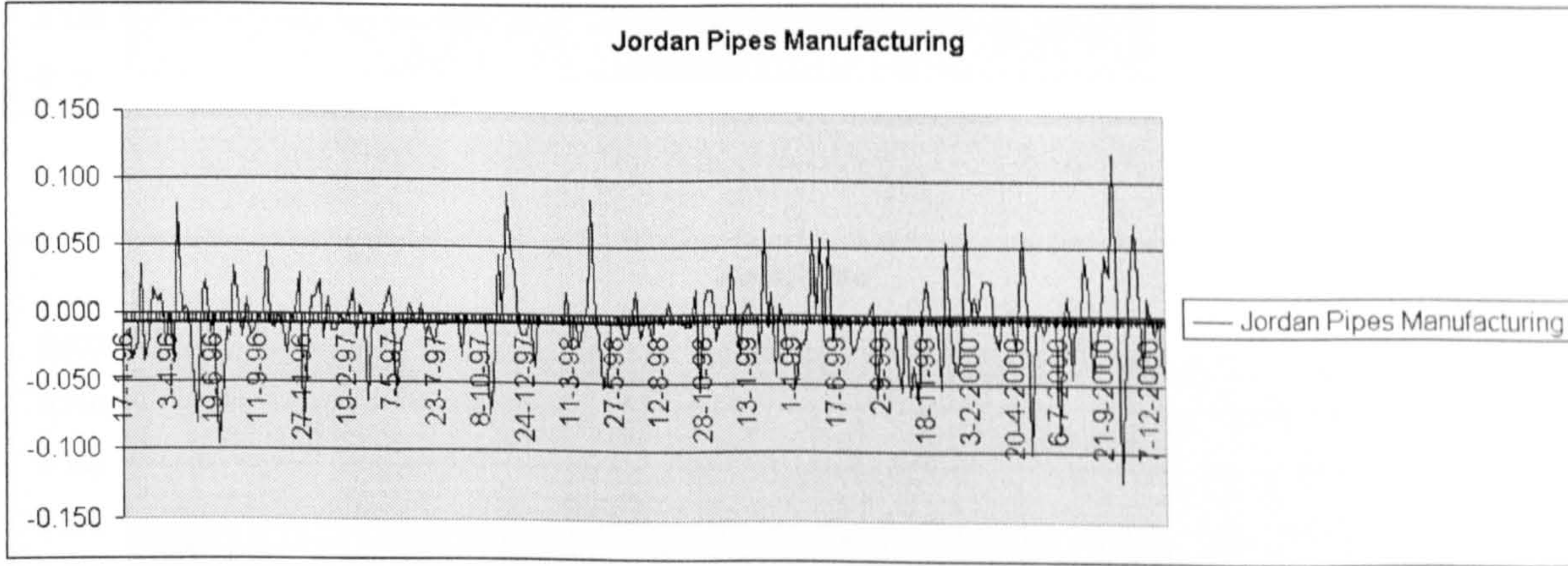
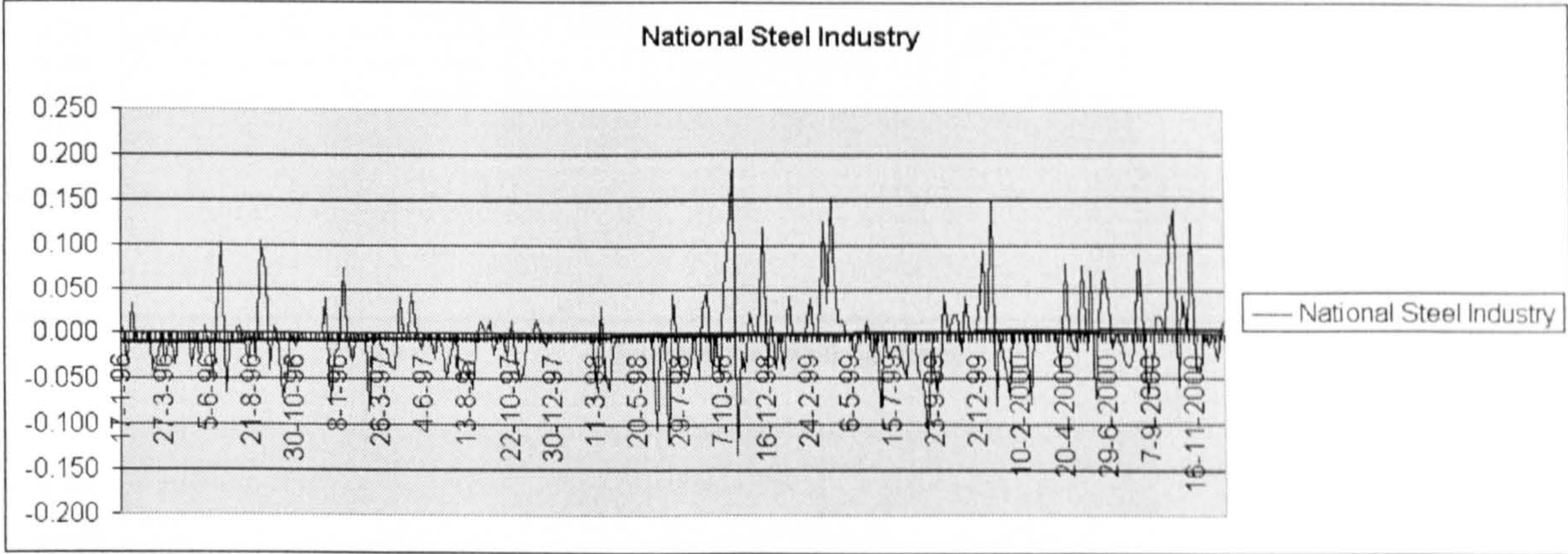
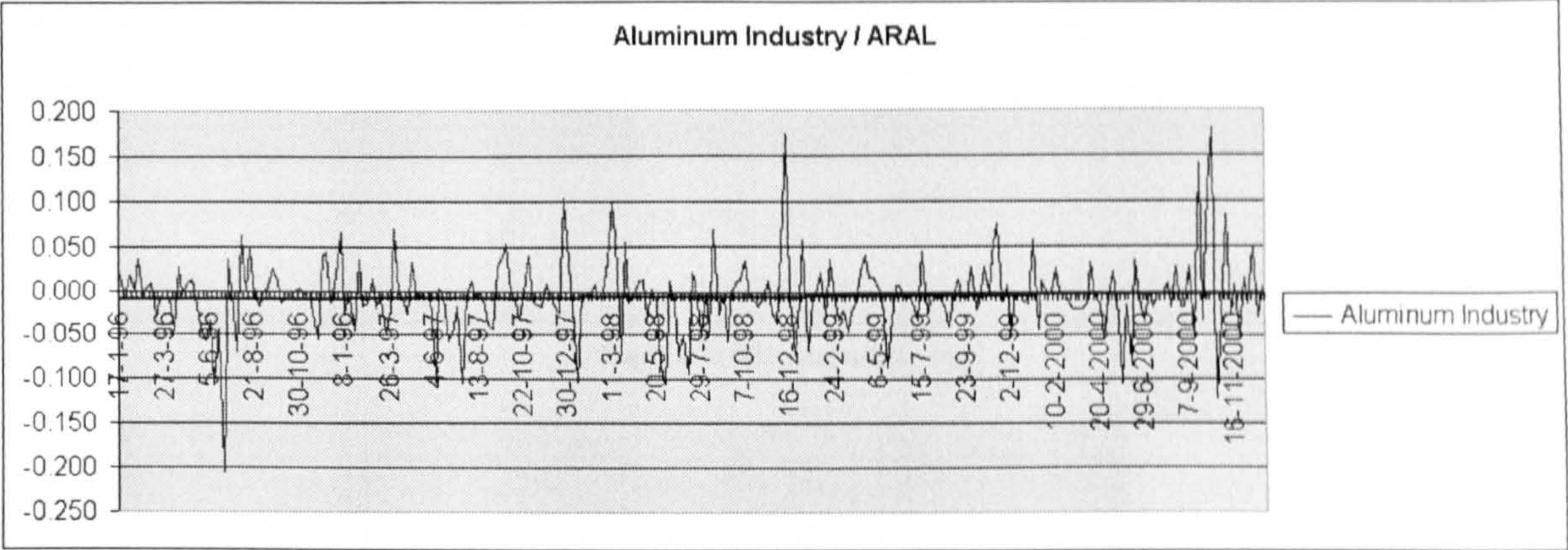
Variable	Coefficient	Standard Error	t ratio
Company Size	0.361	0.005	6.683
Audit Firm	0.212	0.013	3.715
Industry Type	0.125	0.015	2.357
R <sup>2</sup>	0.184	Adjusted R <sup>2</sup>	0.176
Standard Error	0.097	Sum of squares	3.415



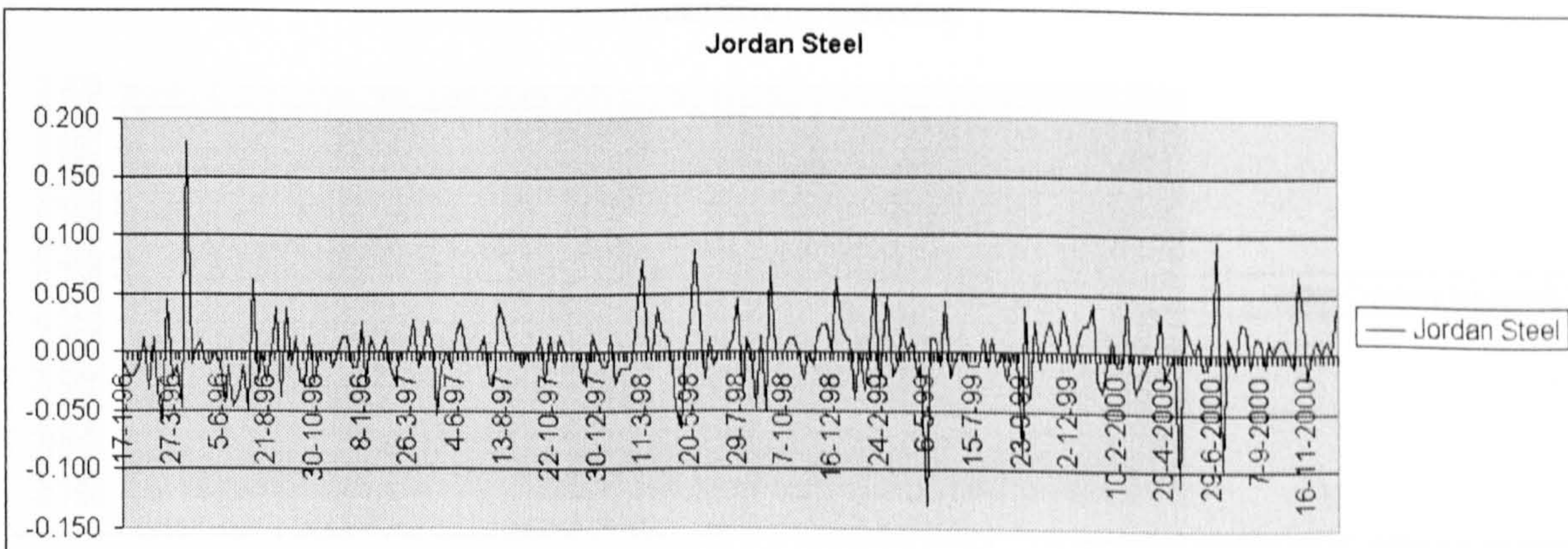
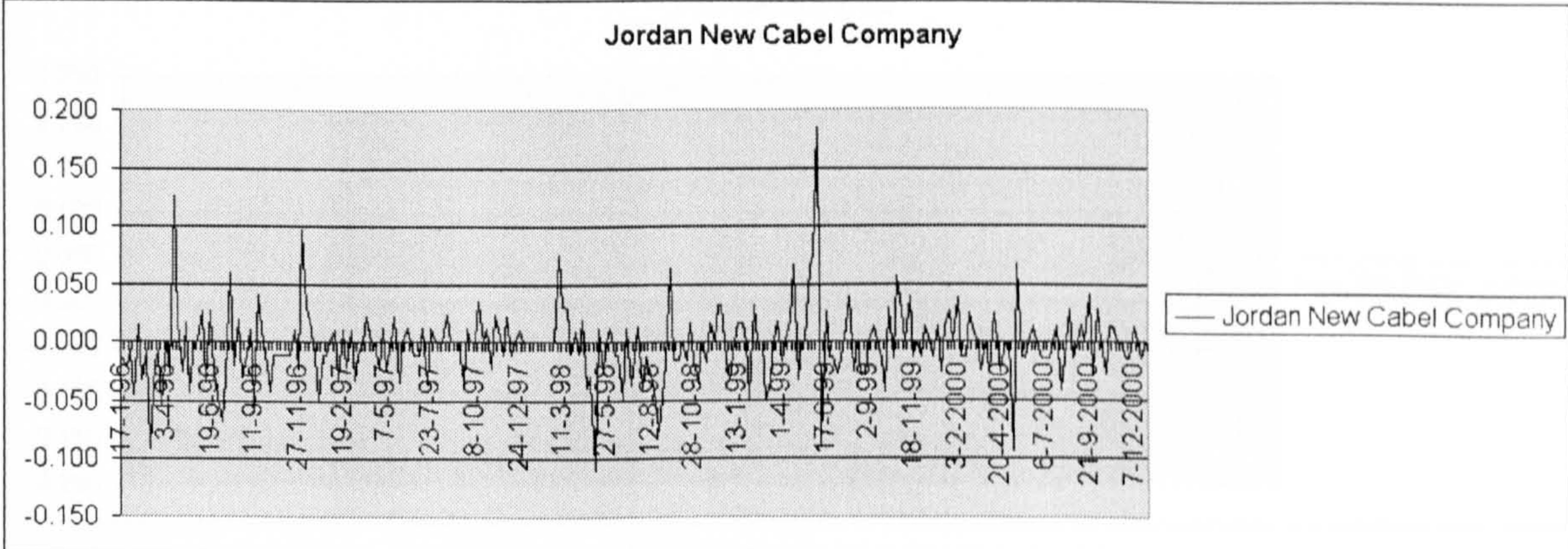
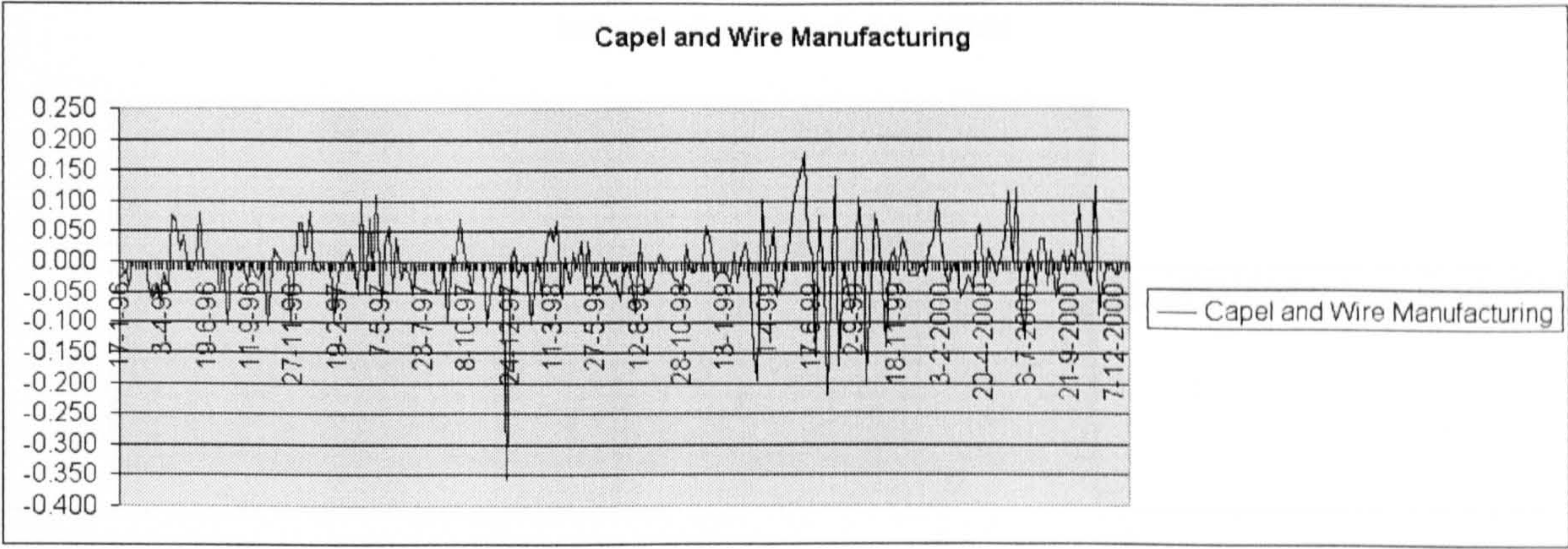
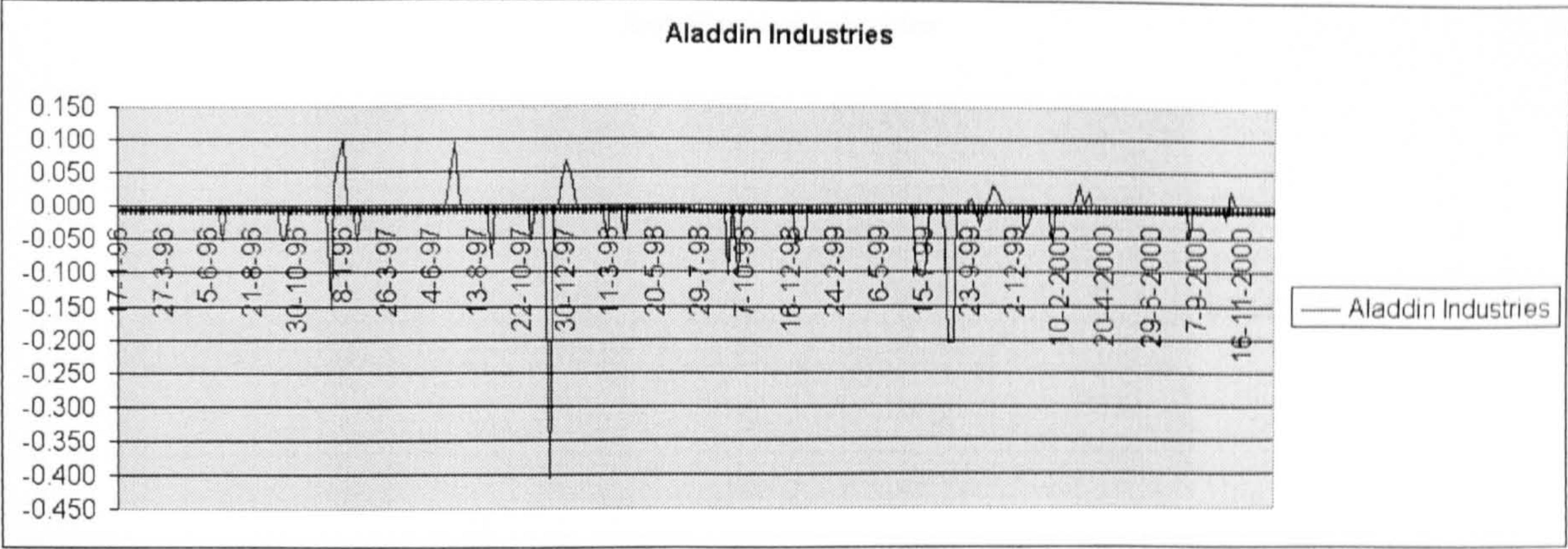
APPENDIX 5

JIC LOGARITHM WEEKLY RETURNS CHARTS

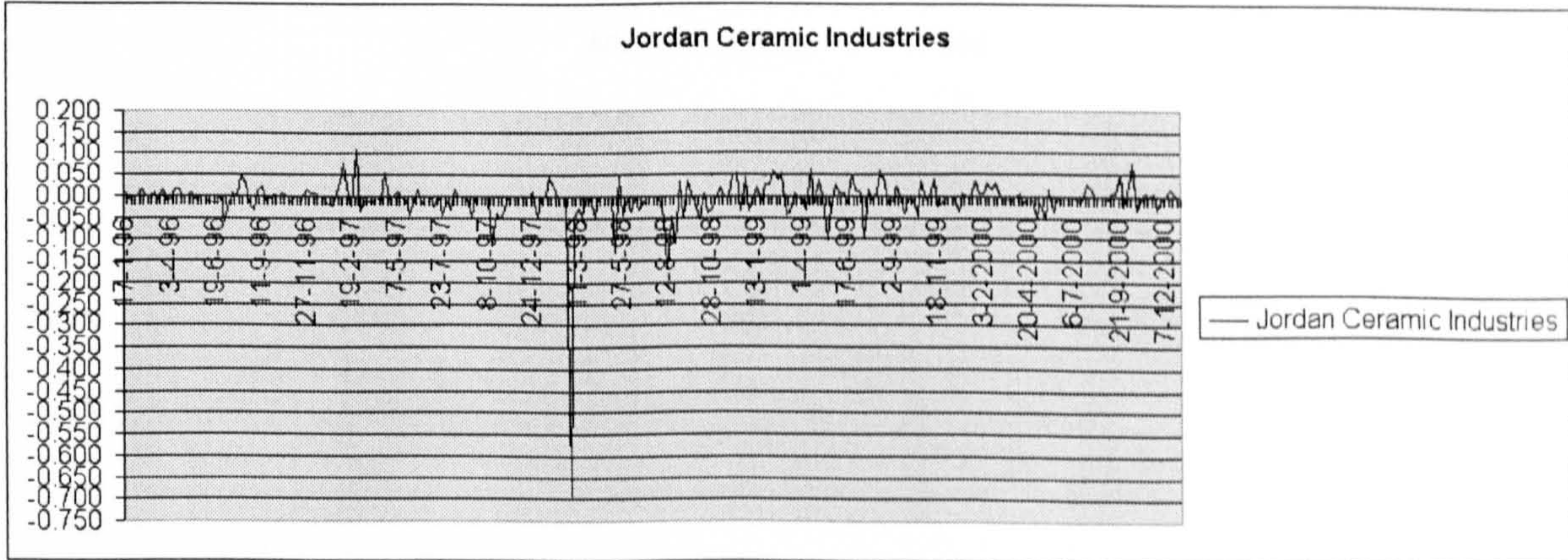
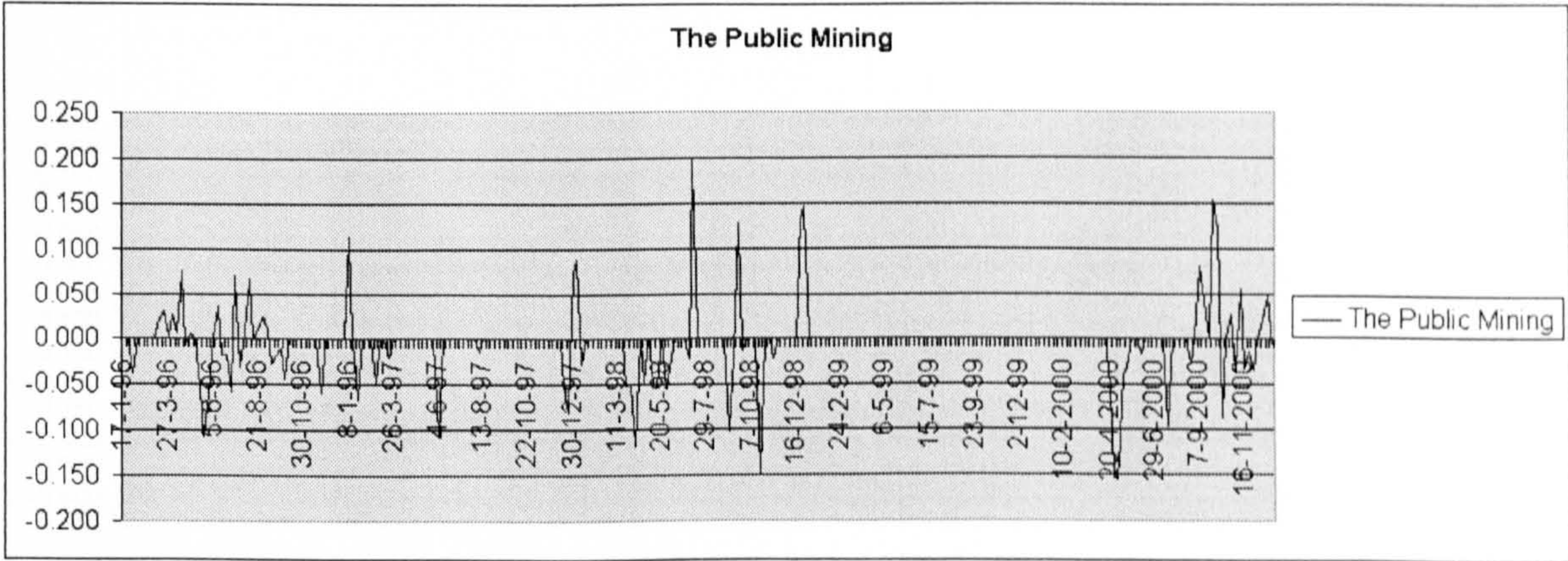
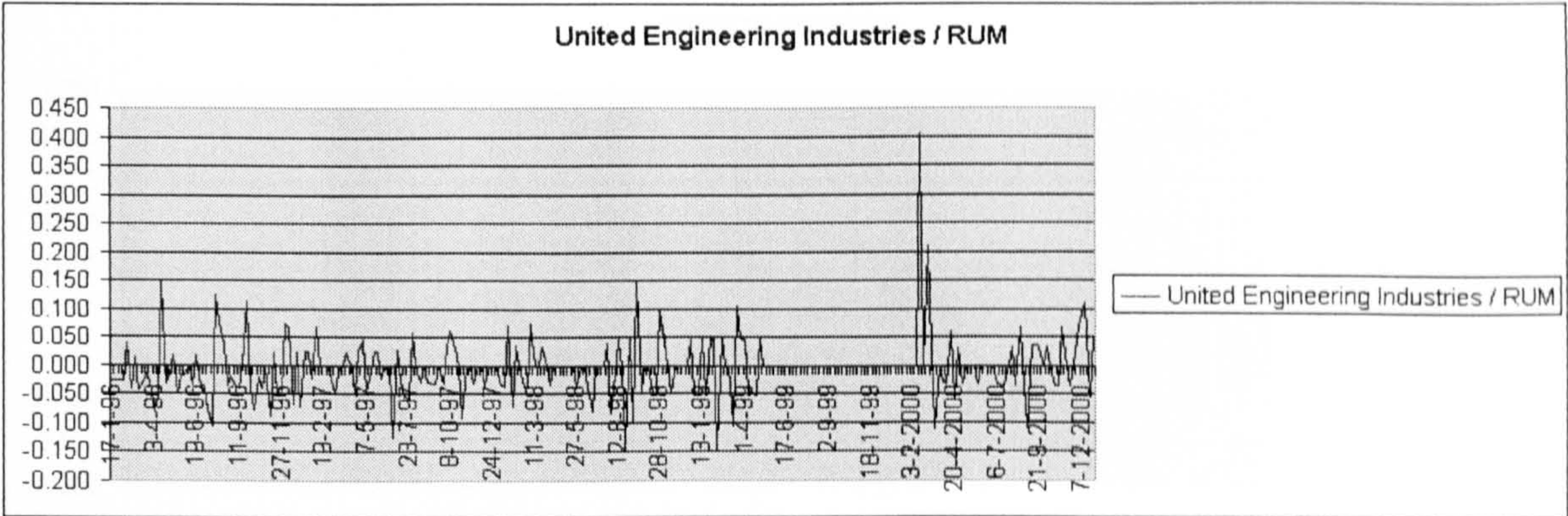
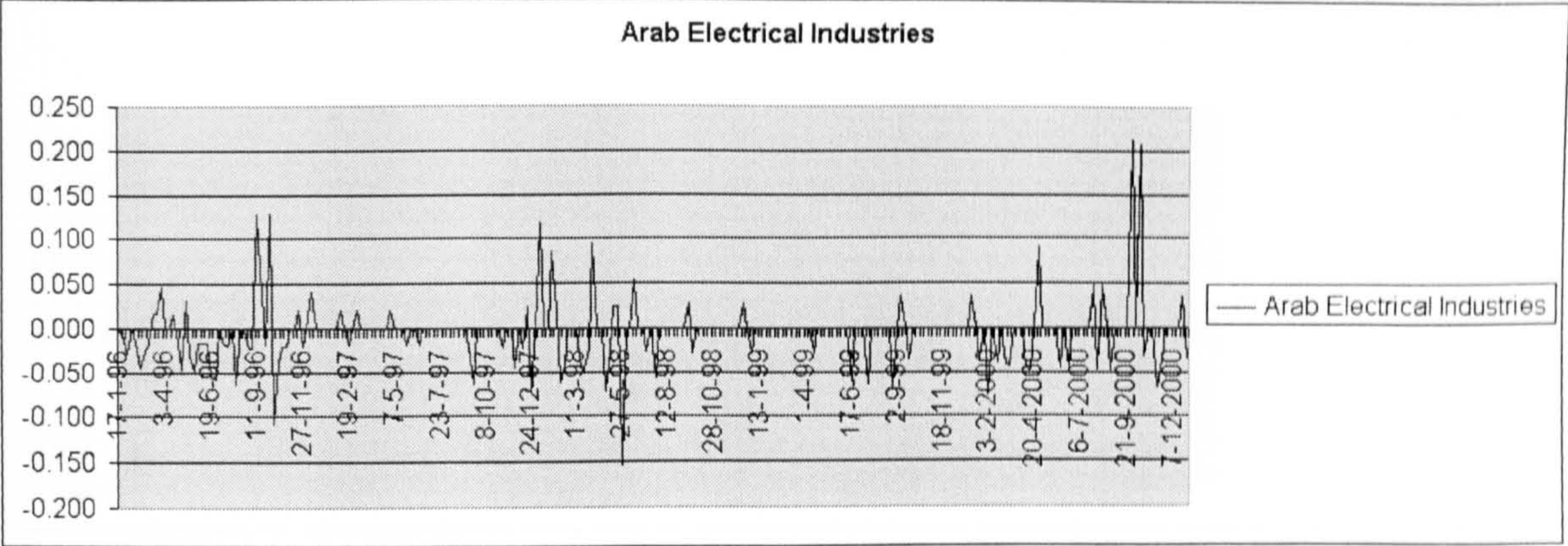
1996-2000



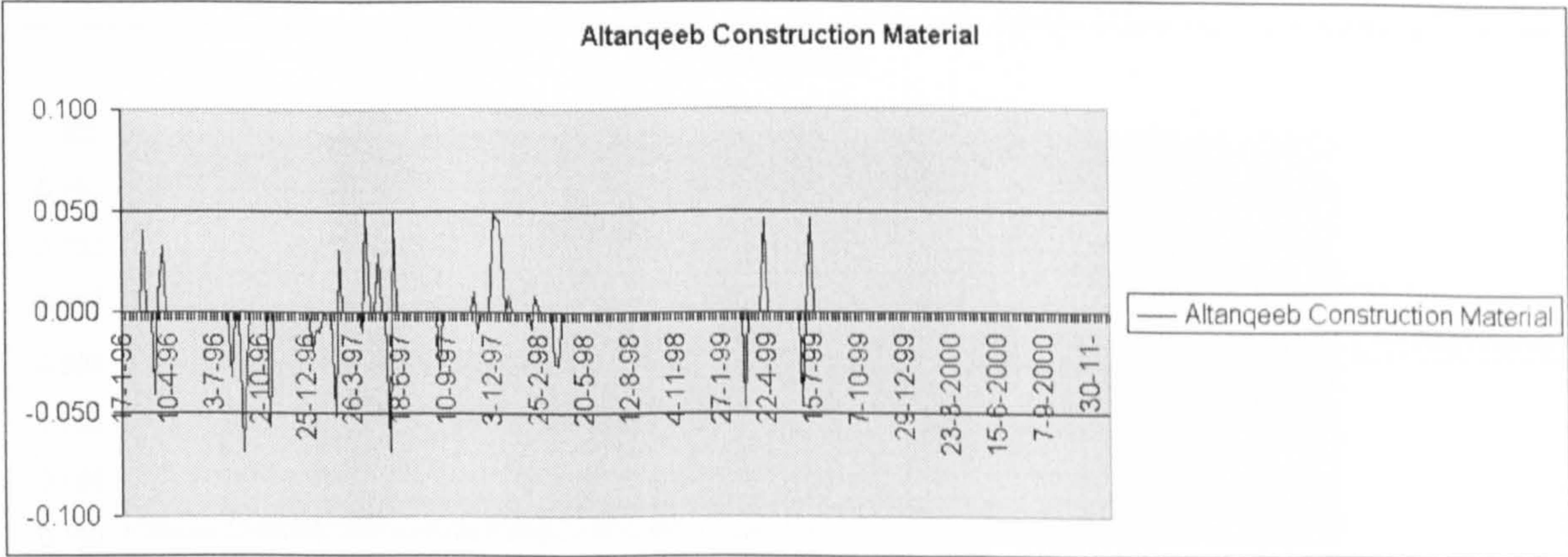
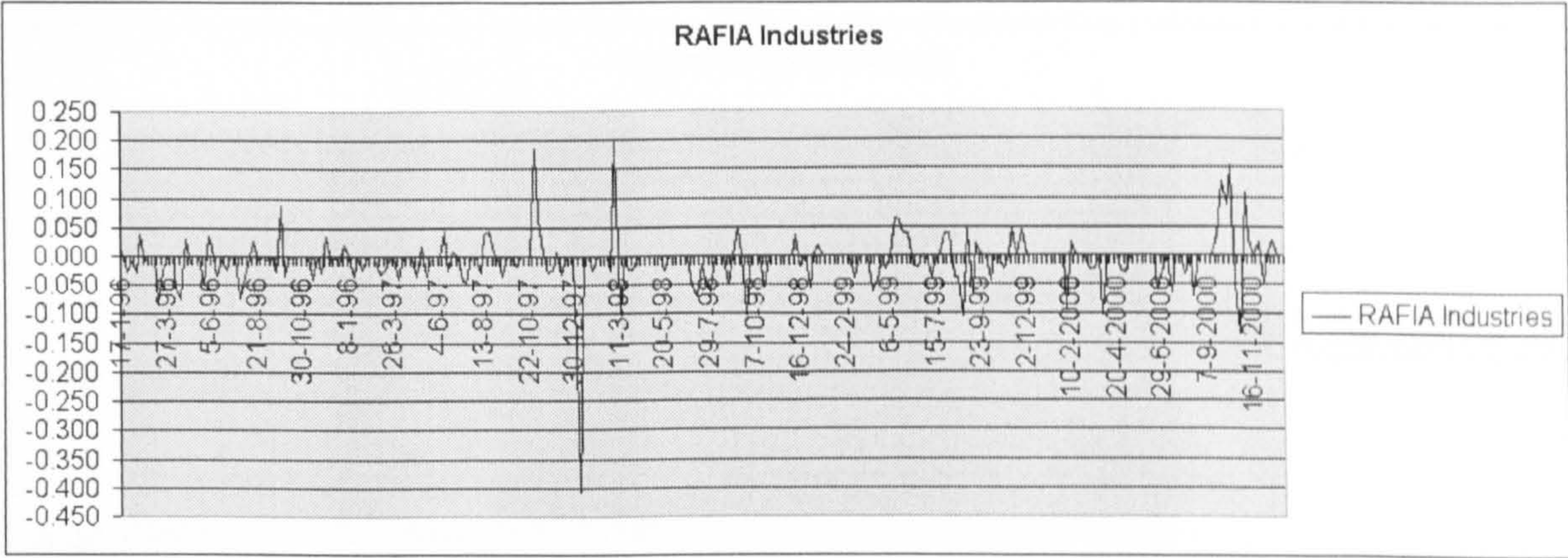
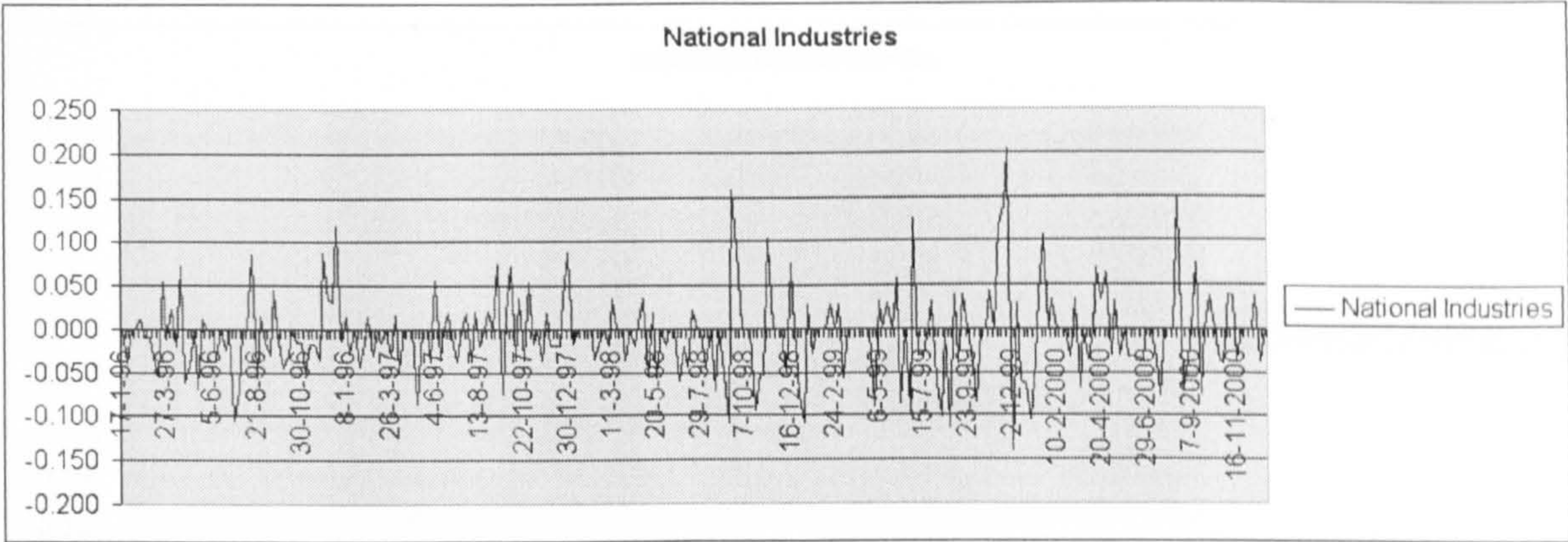
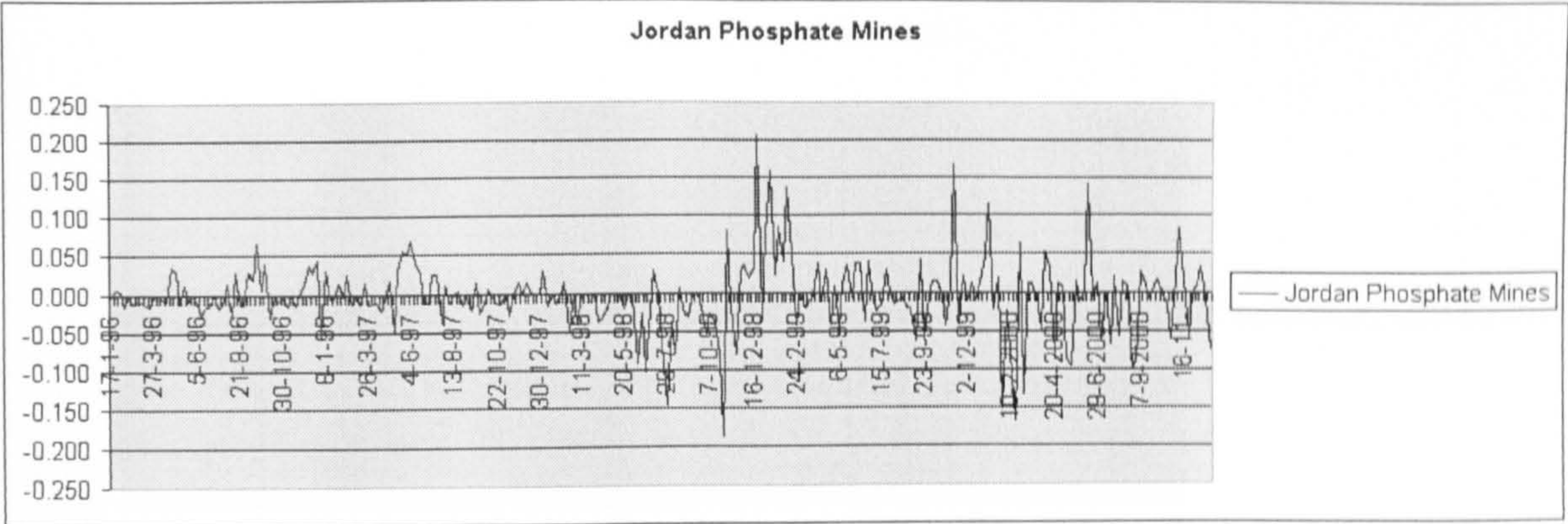




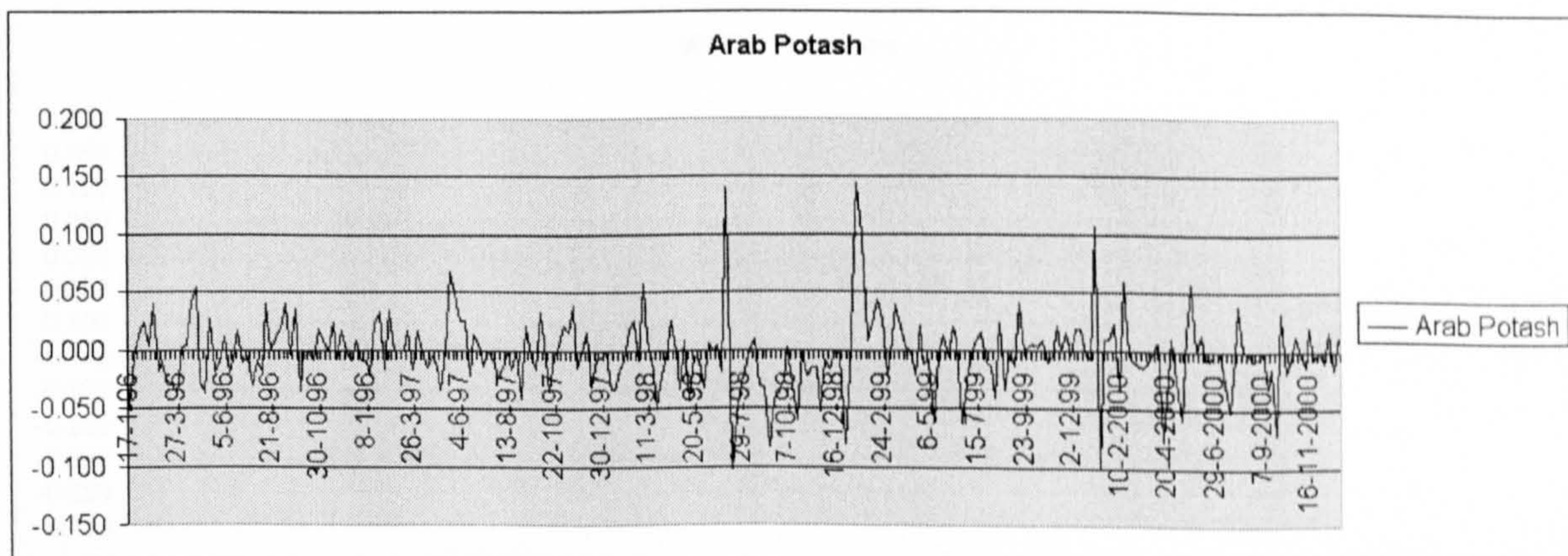
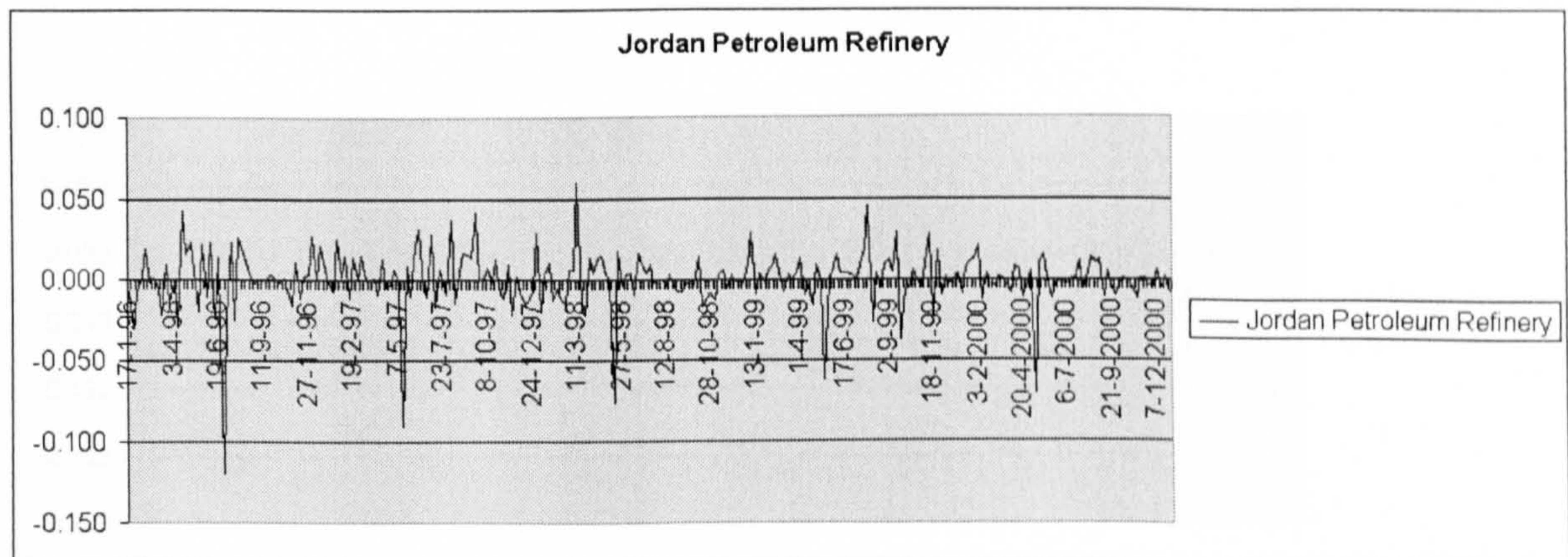
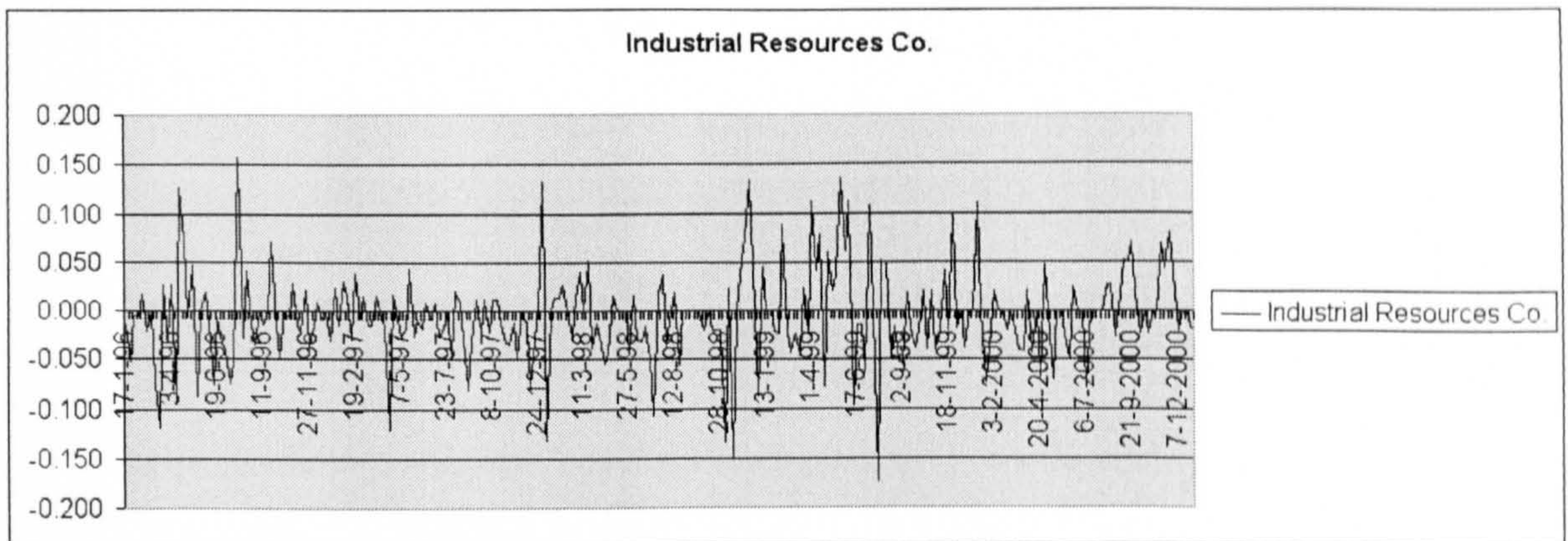
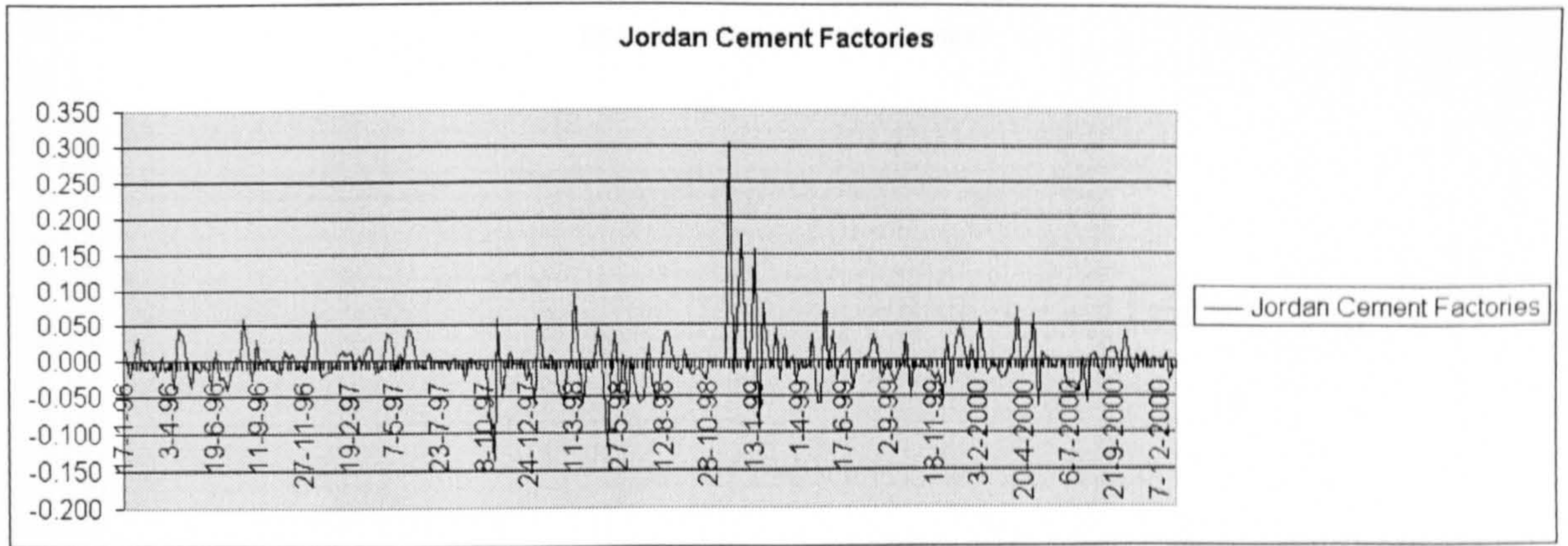




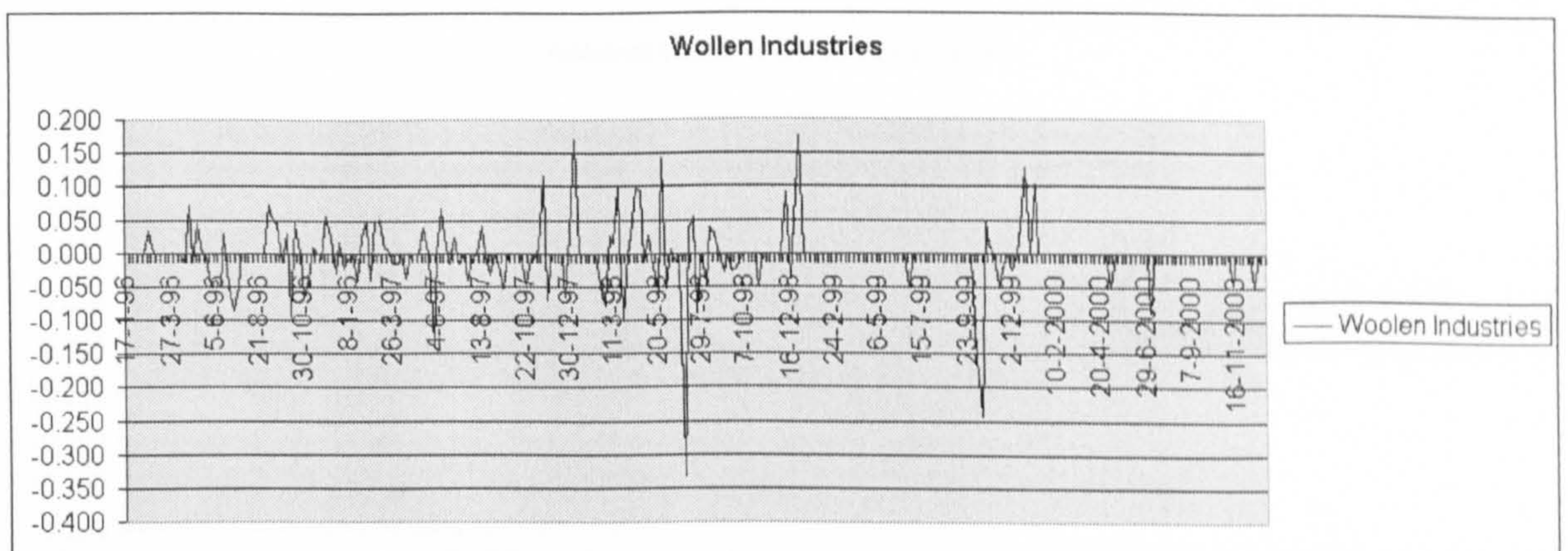
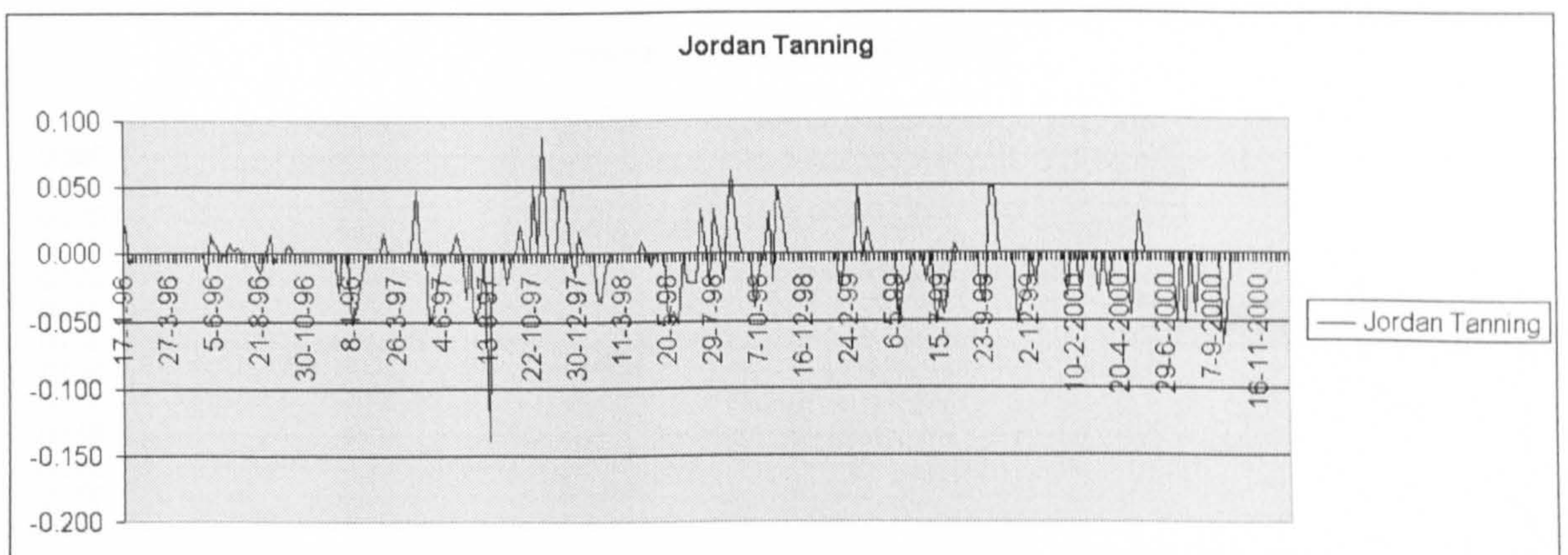
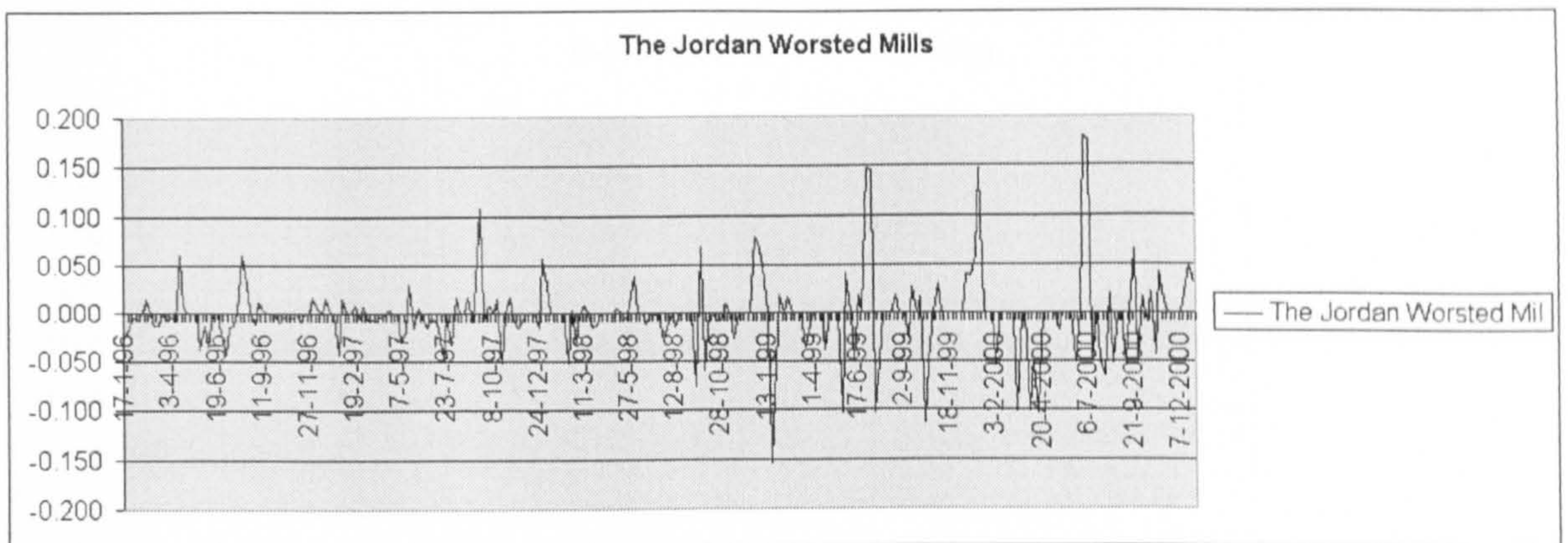
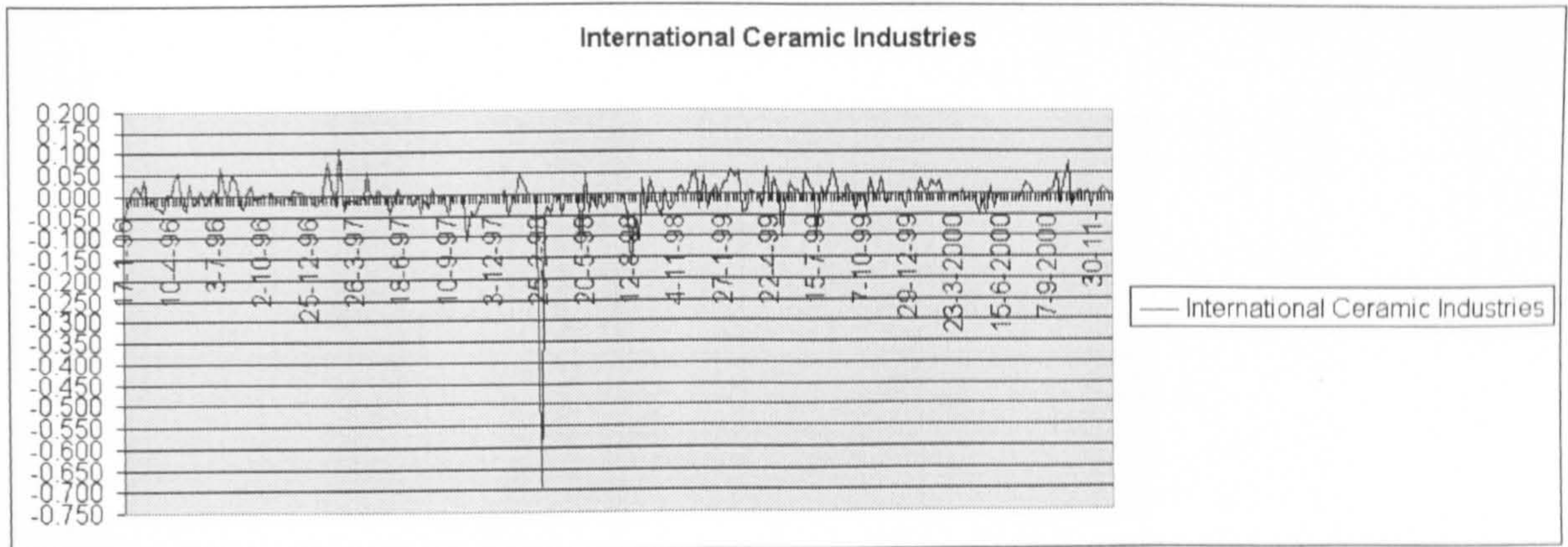




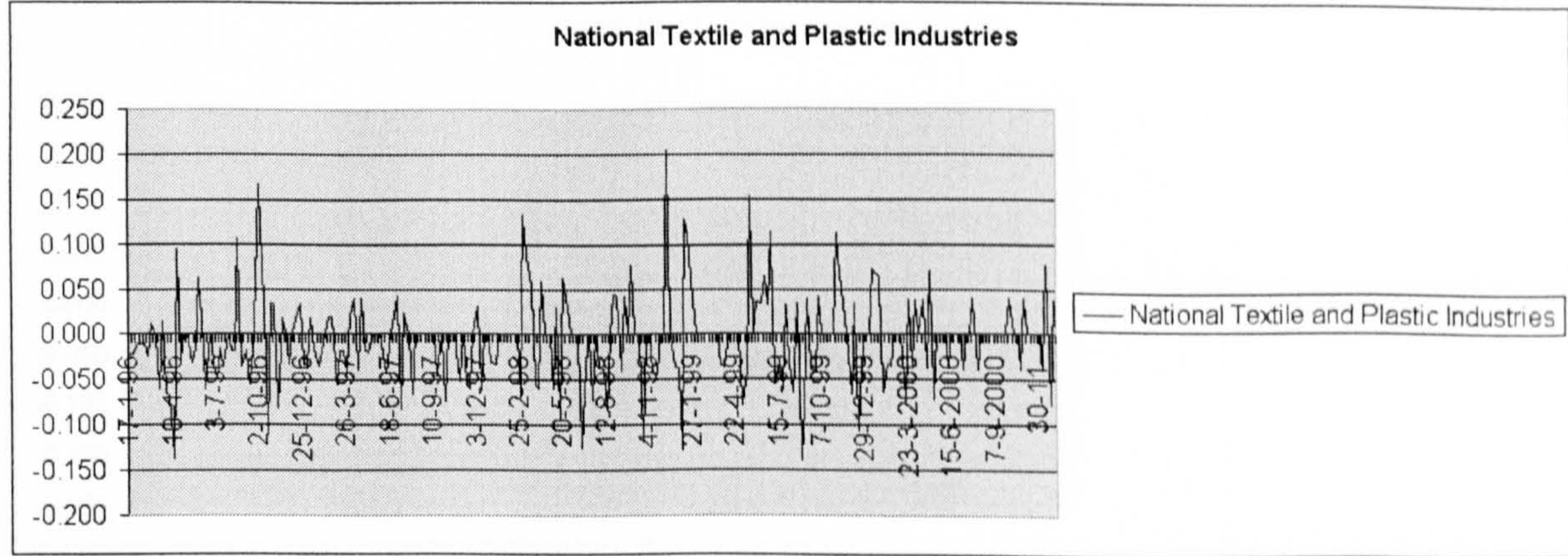
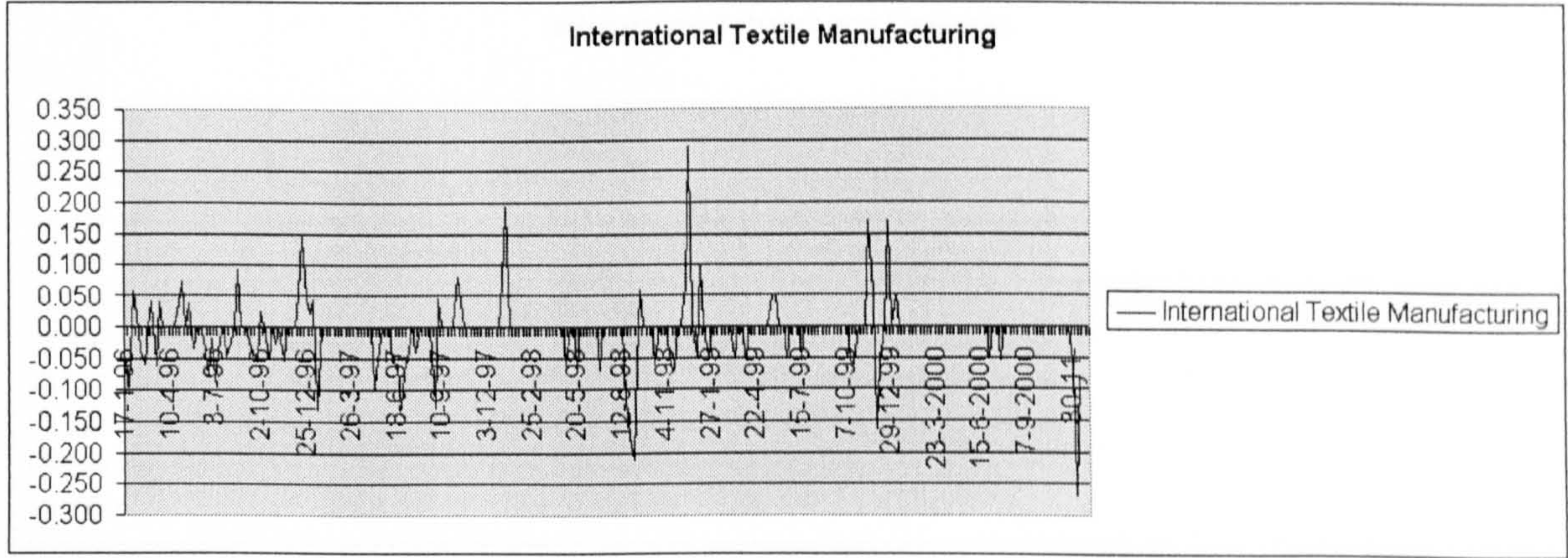
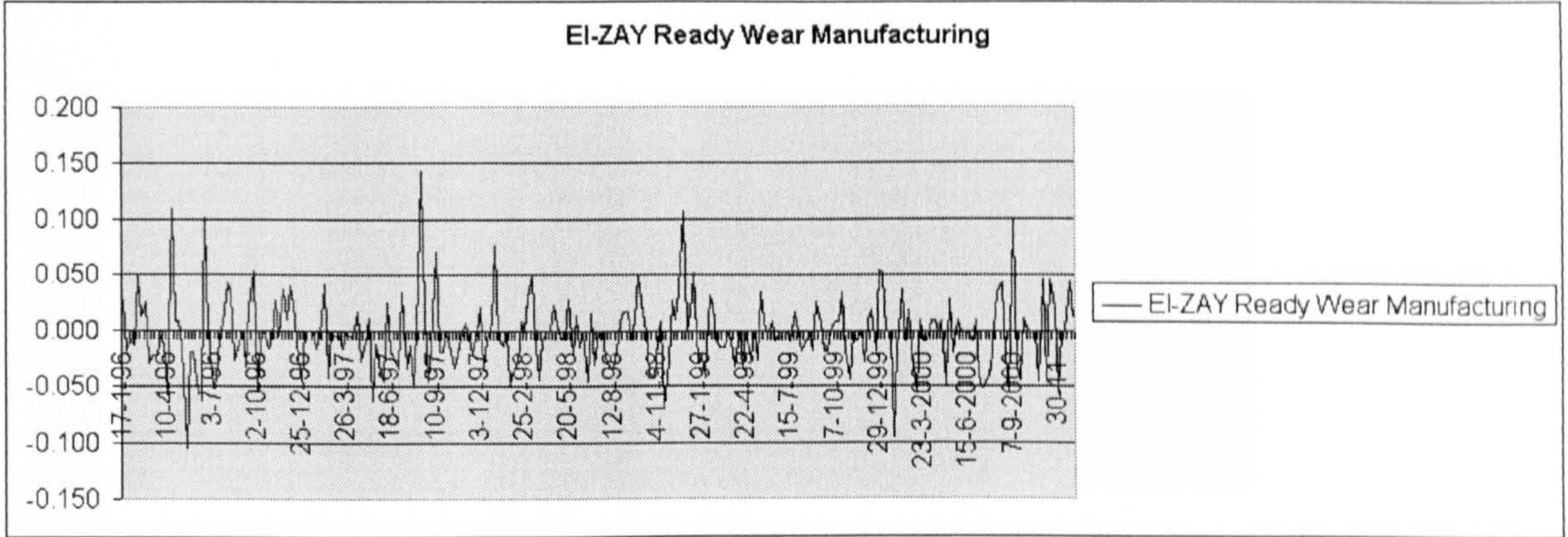
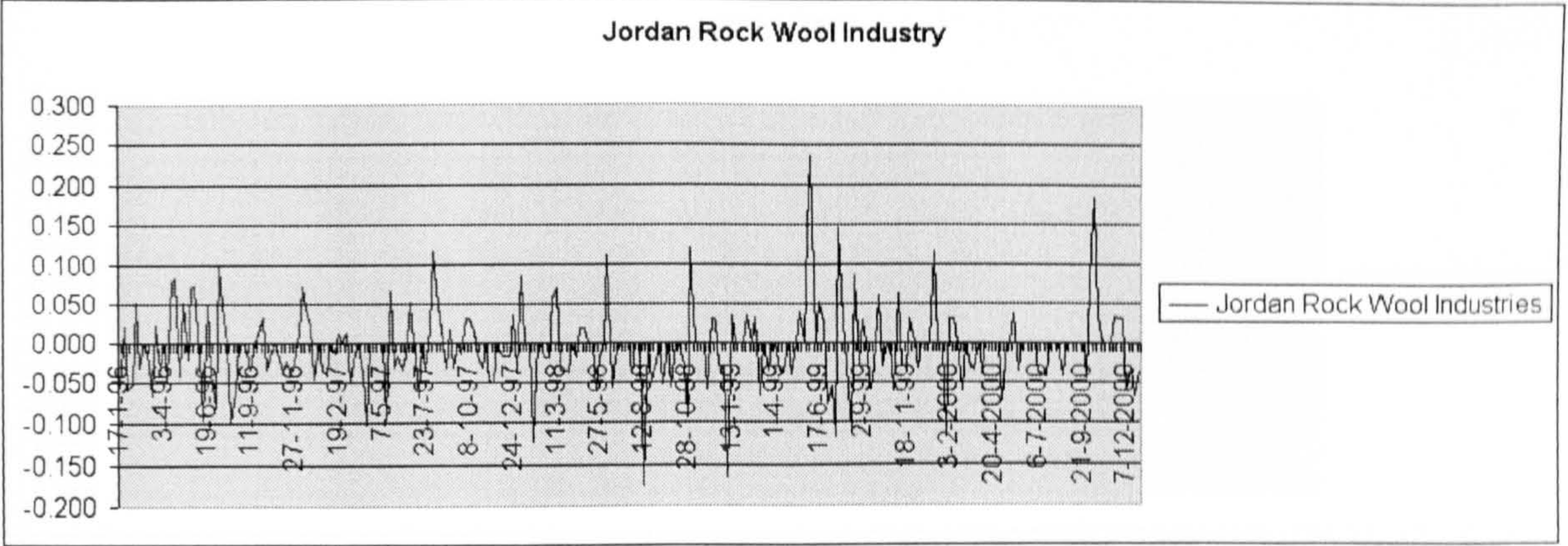




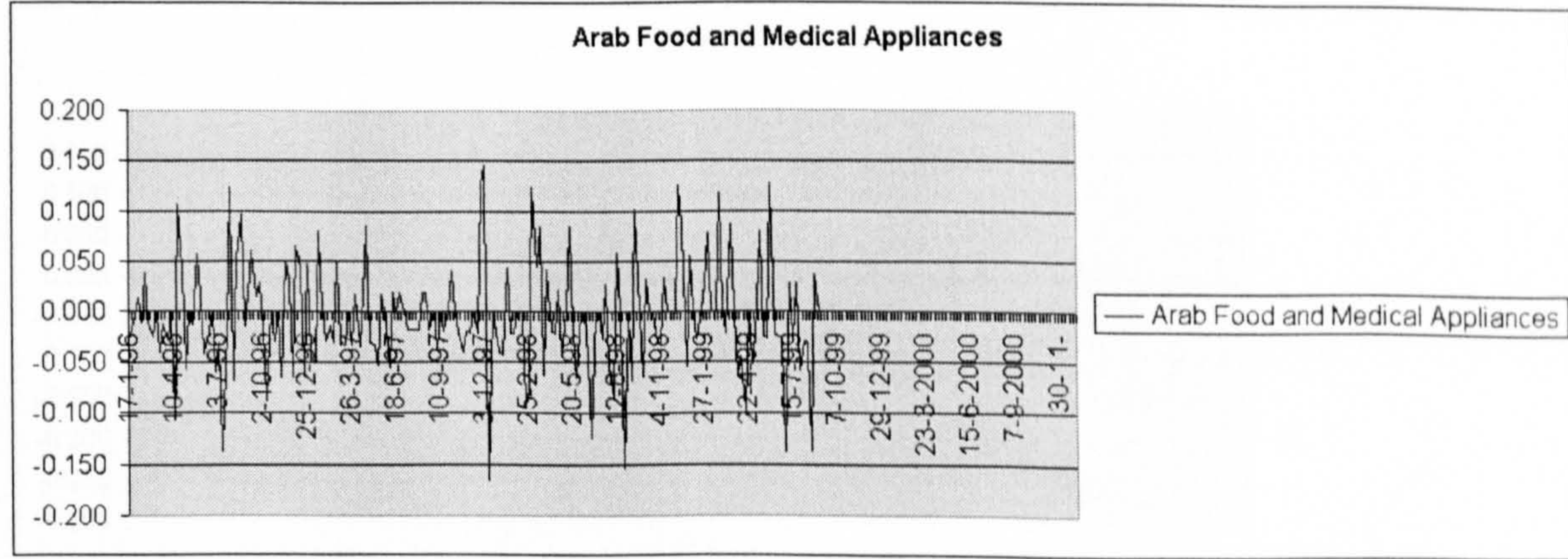
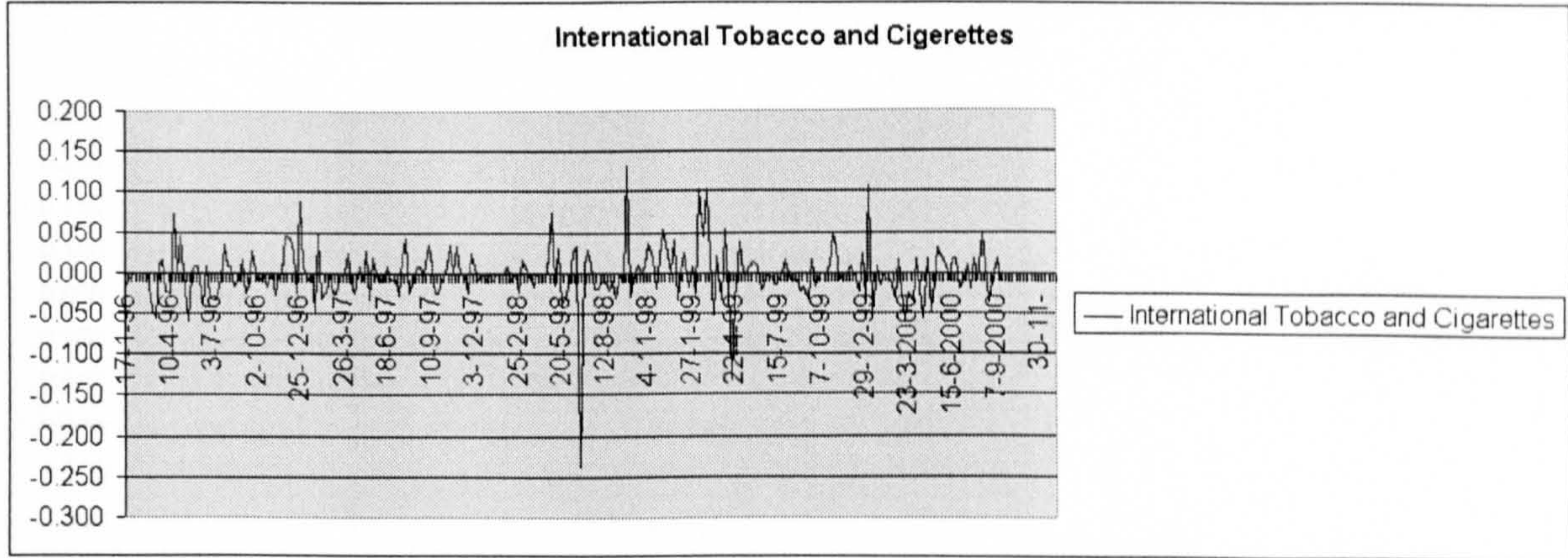
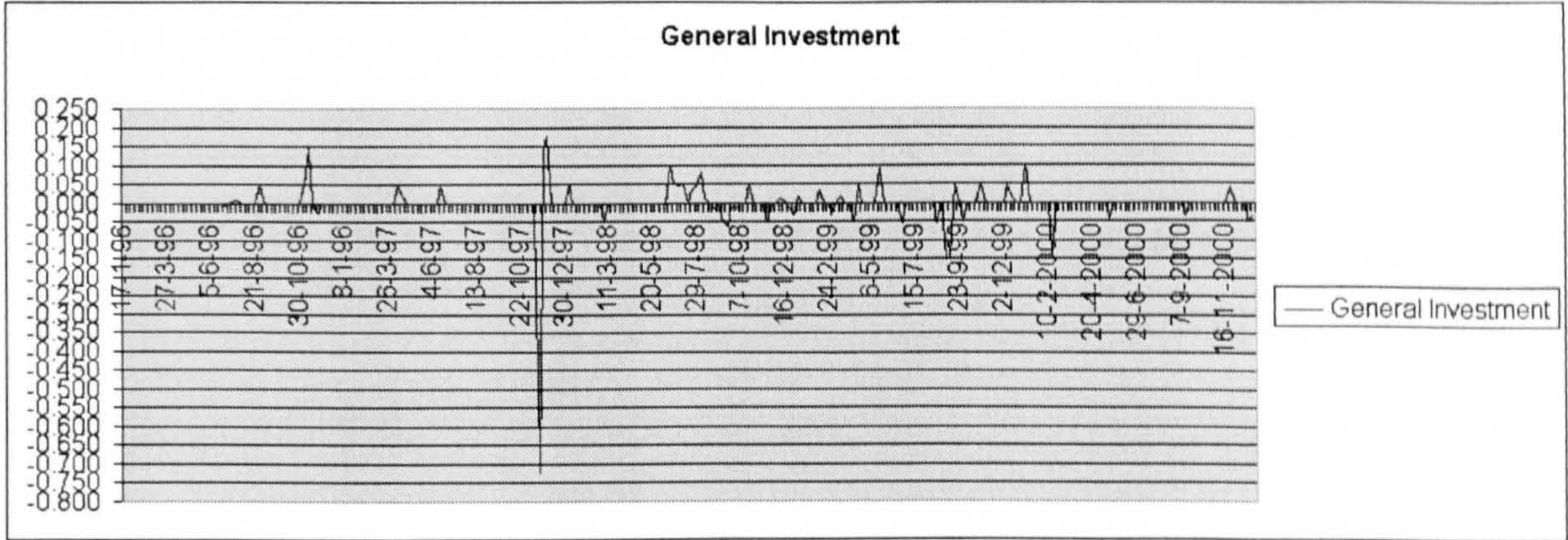
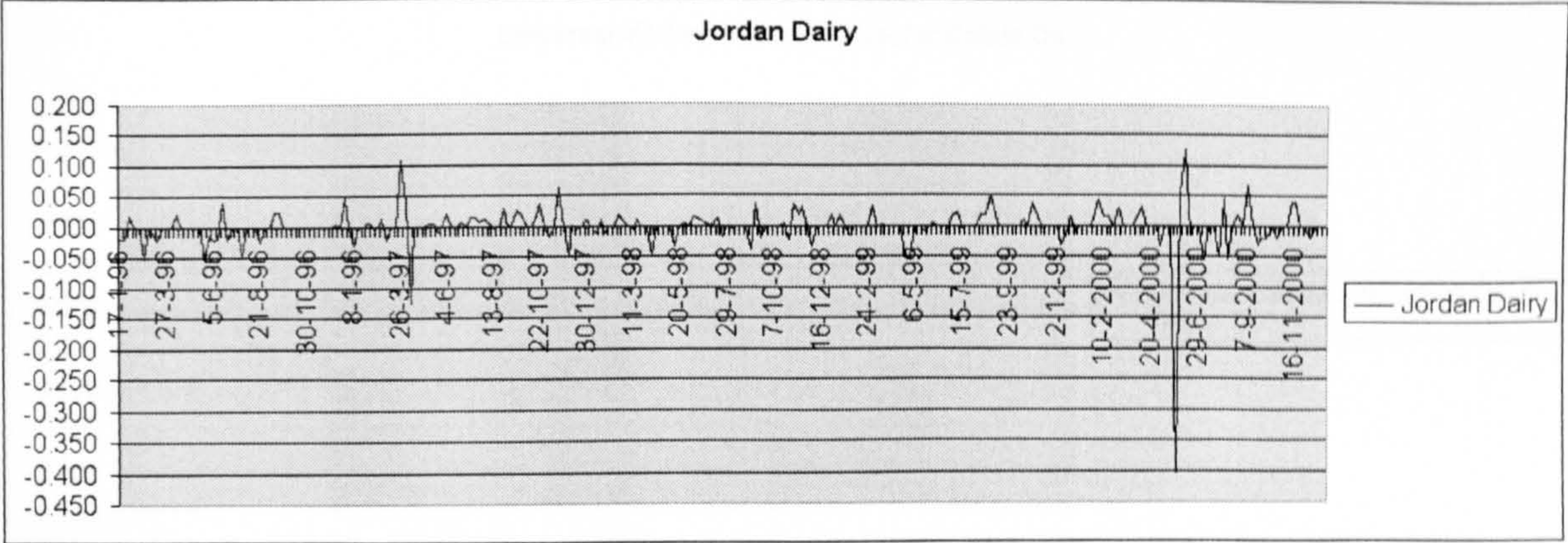




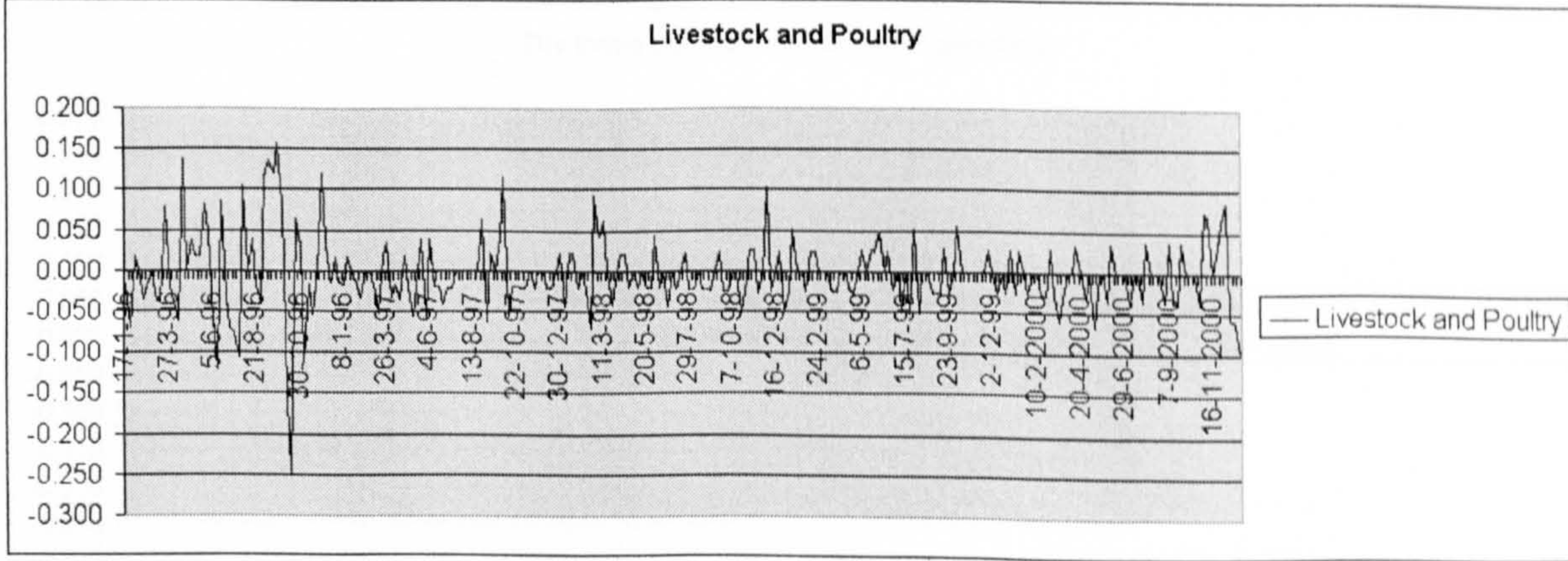
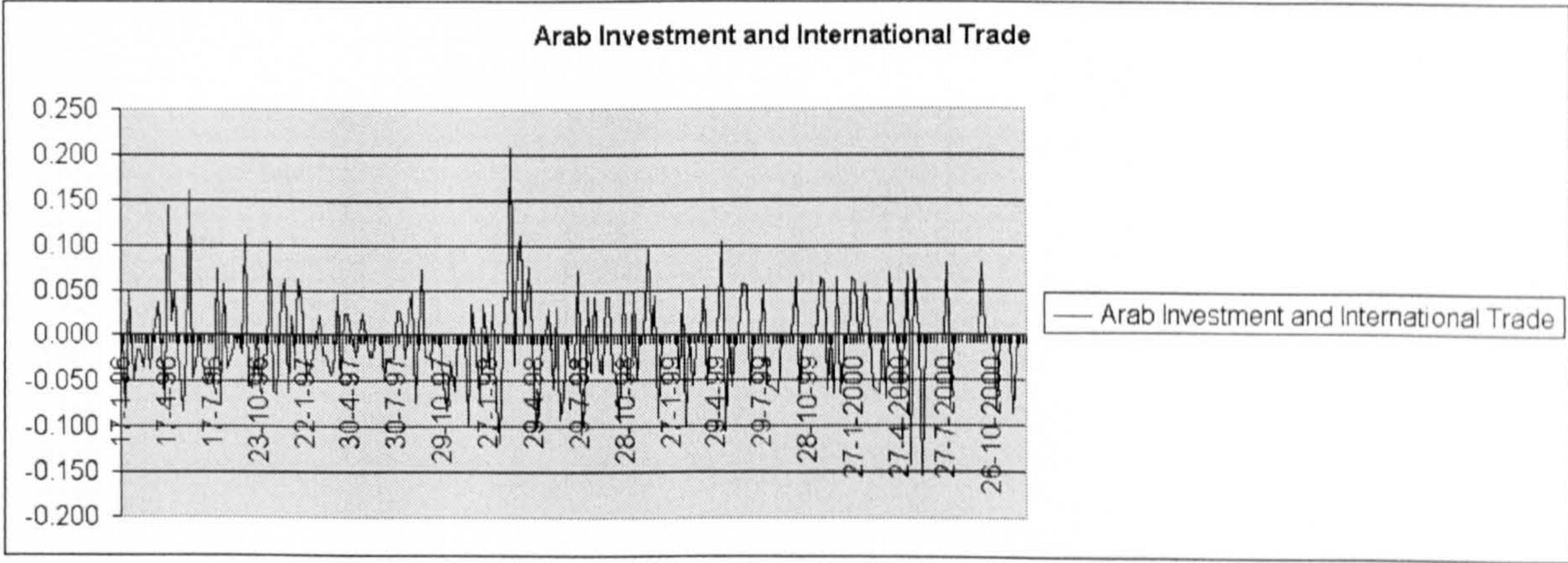
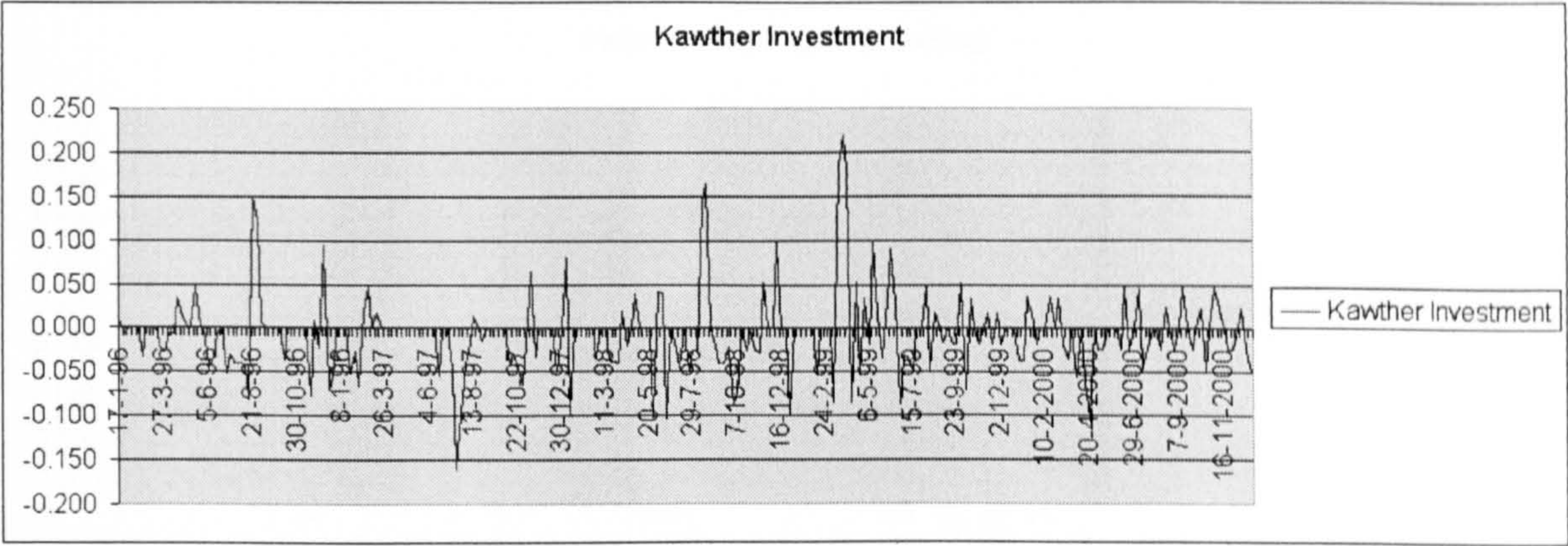
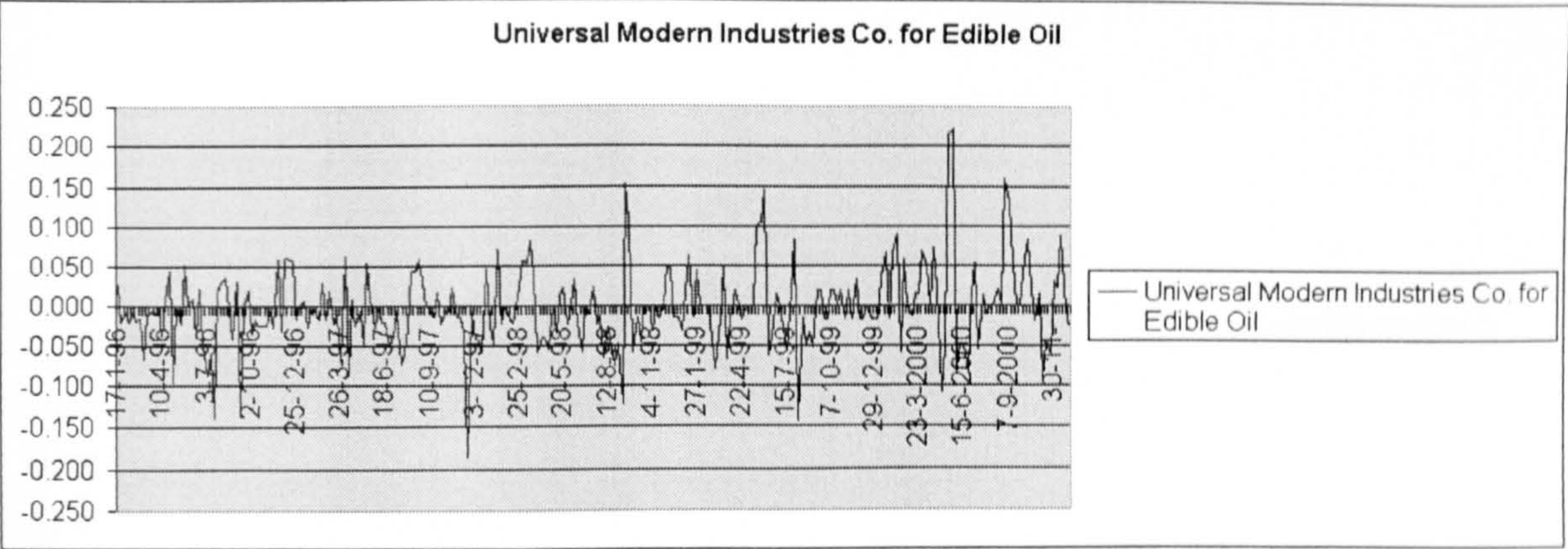




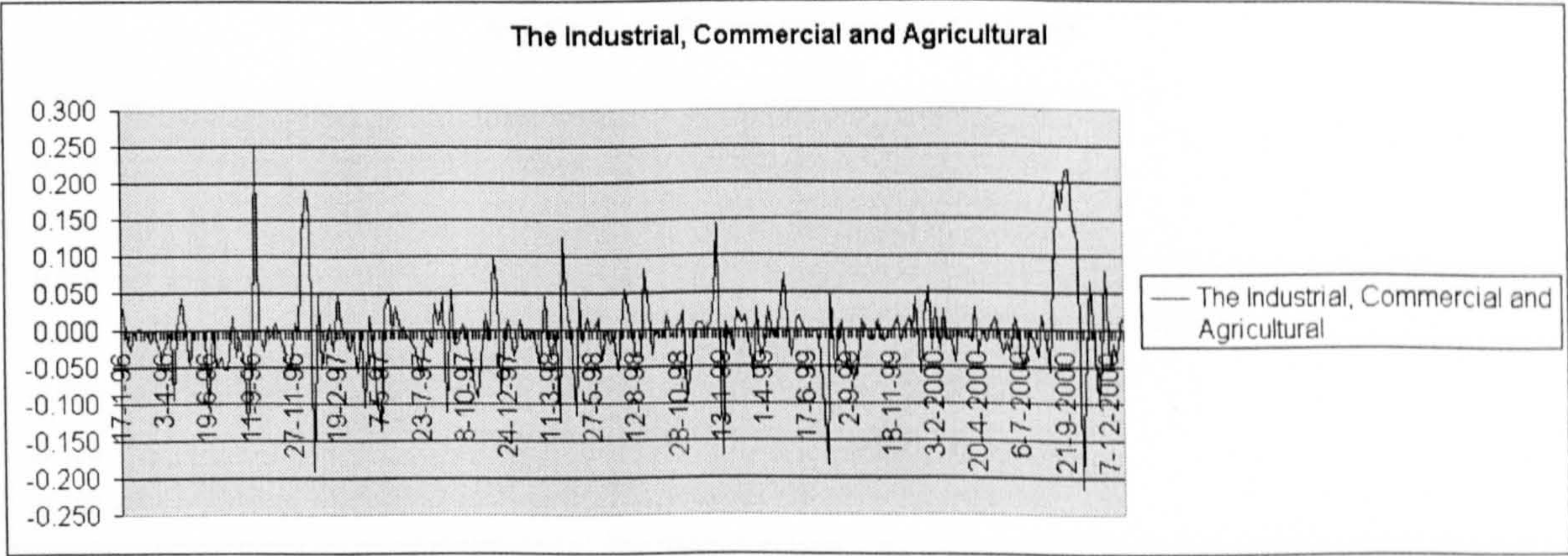
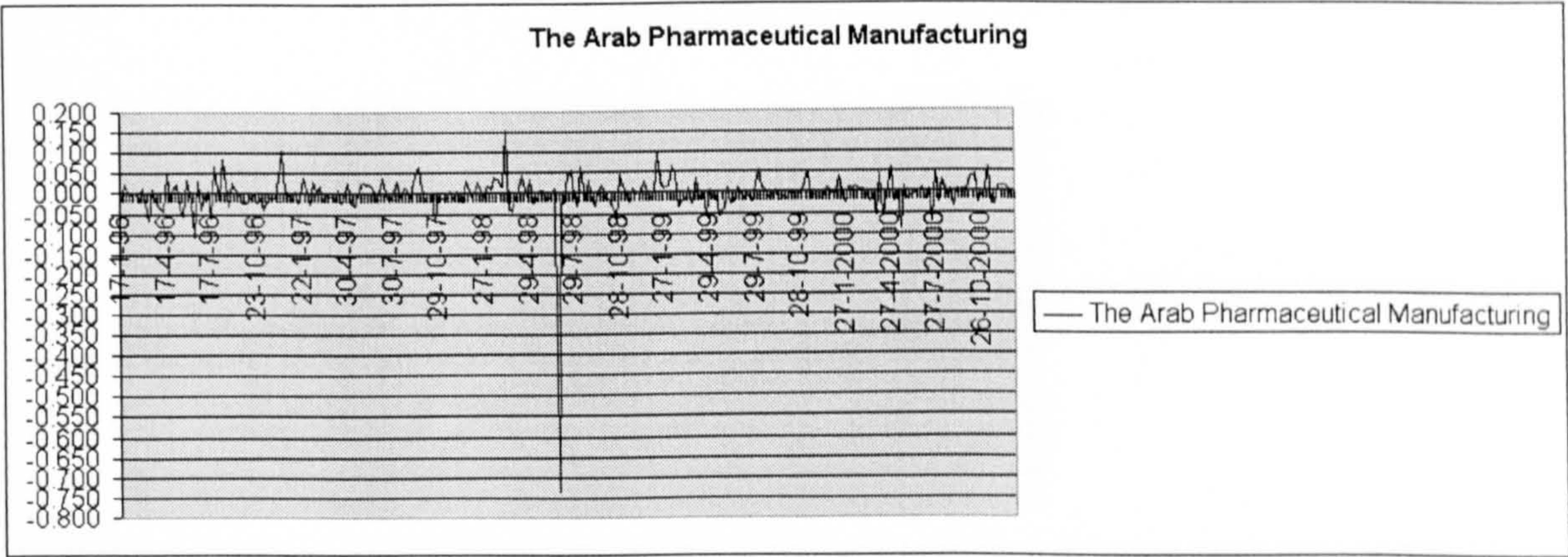
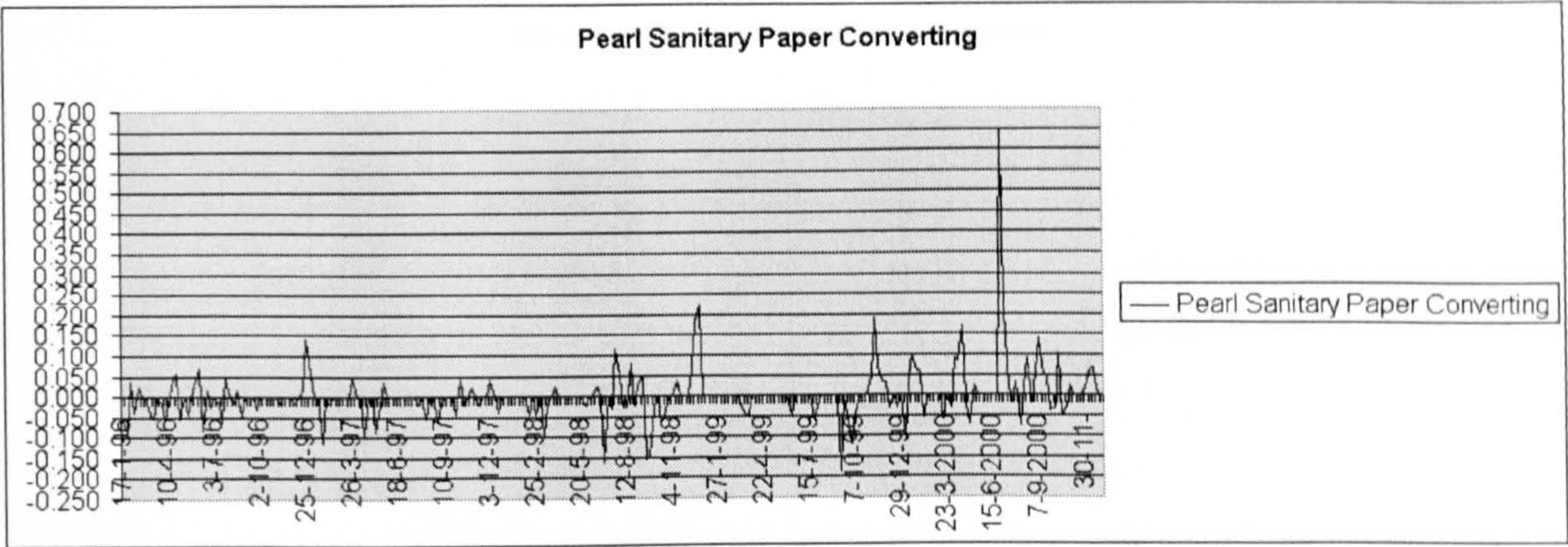
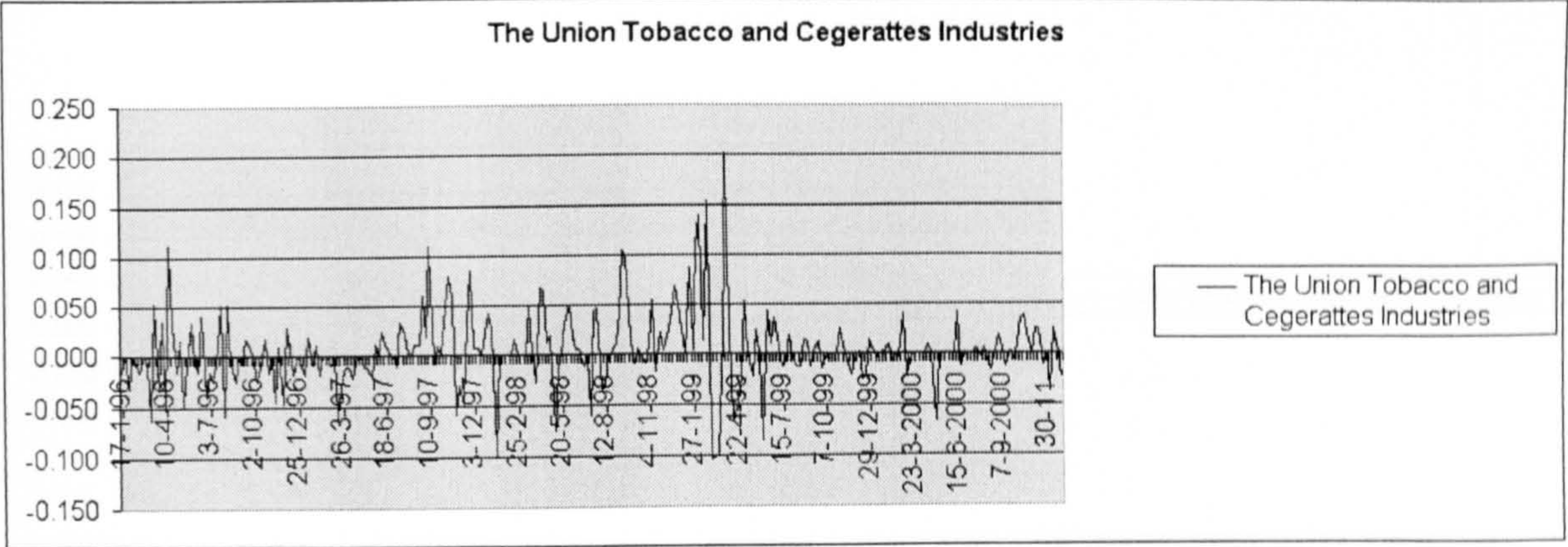




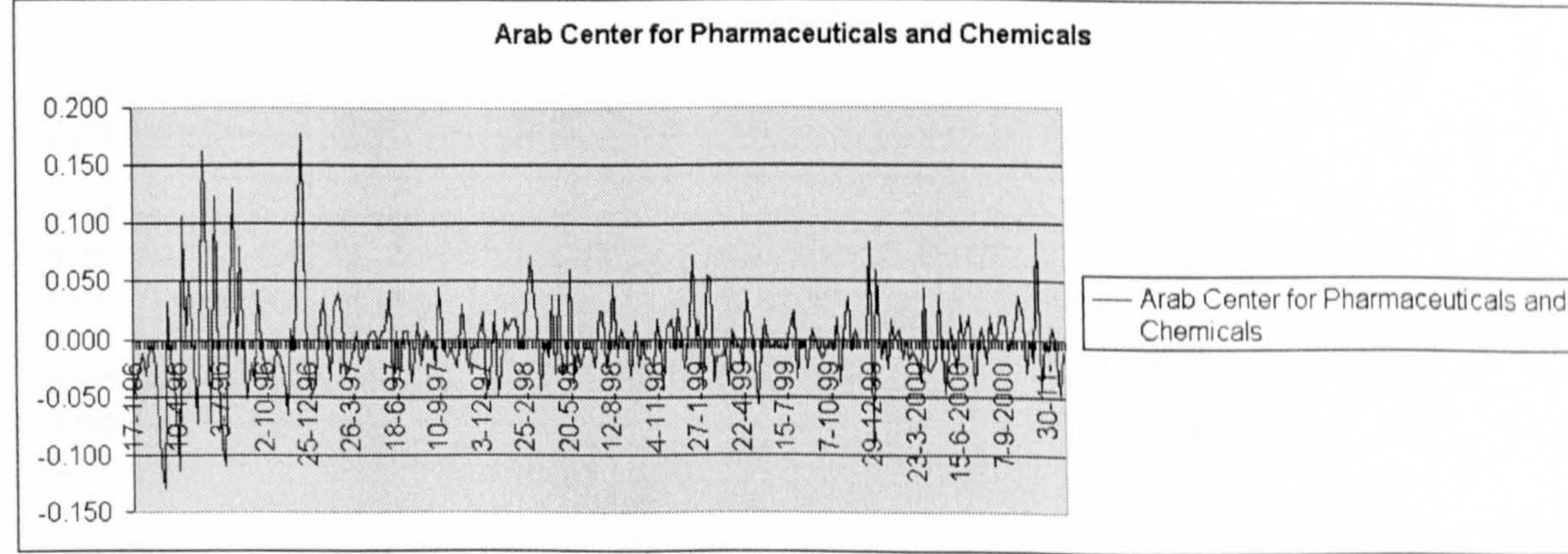
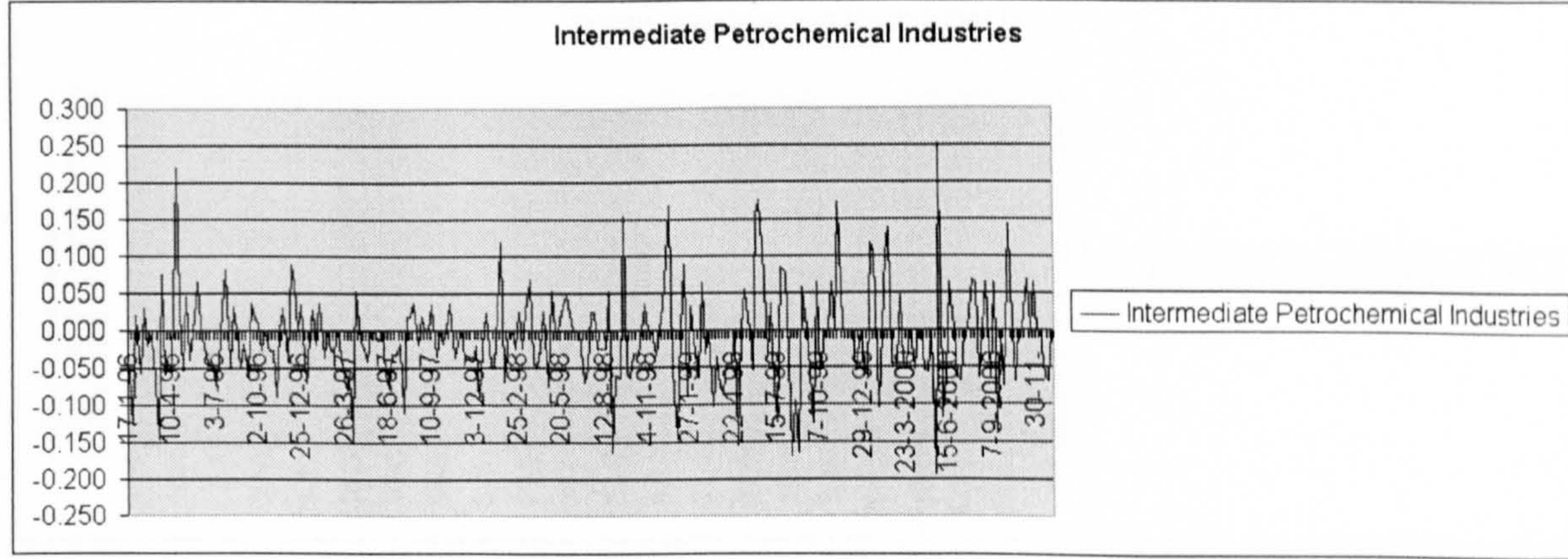
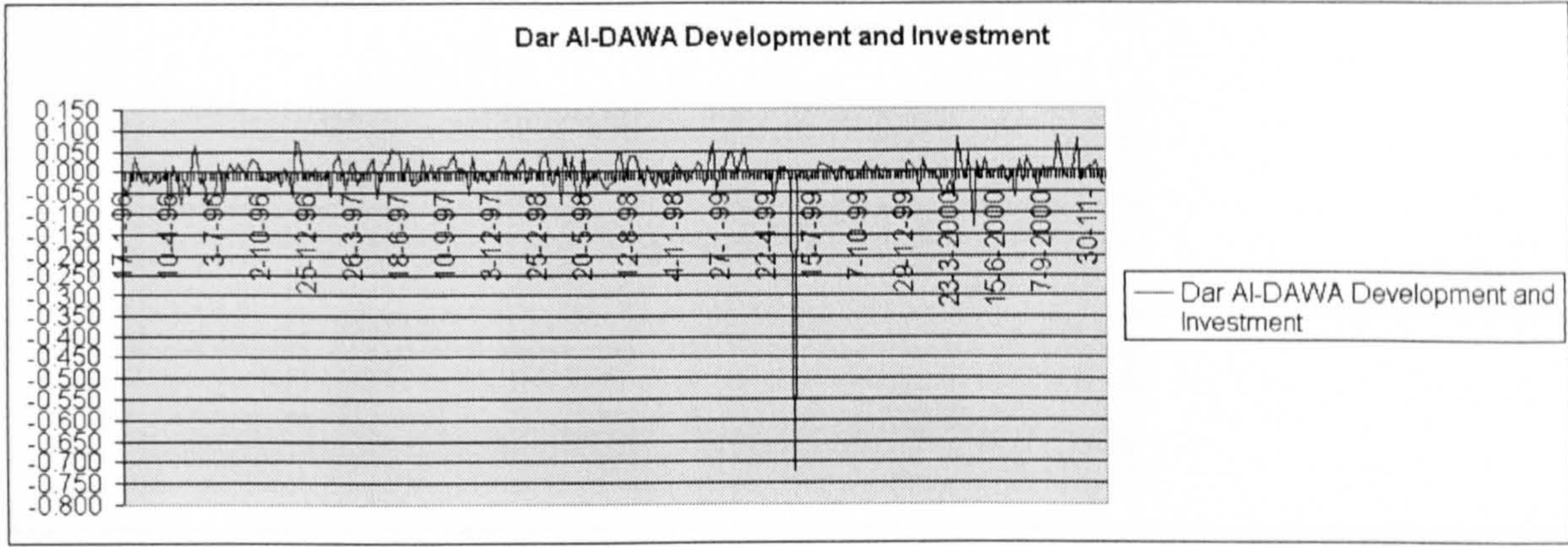
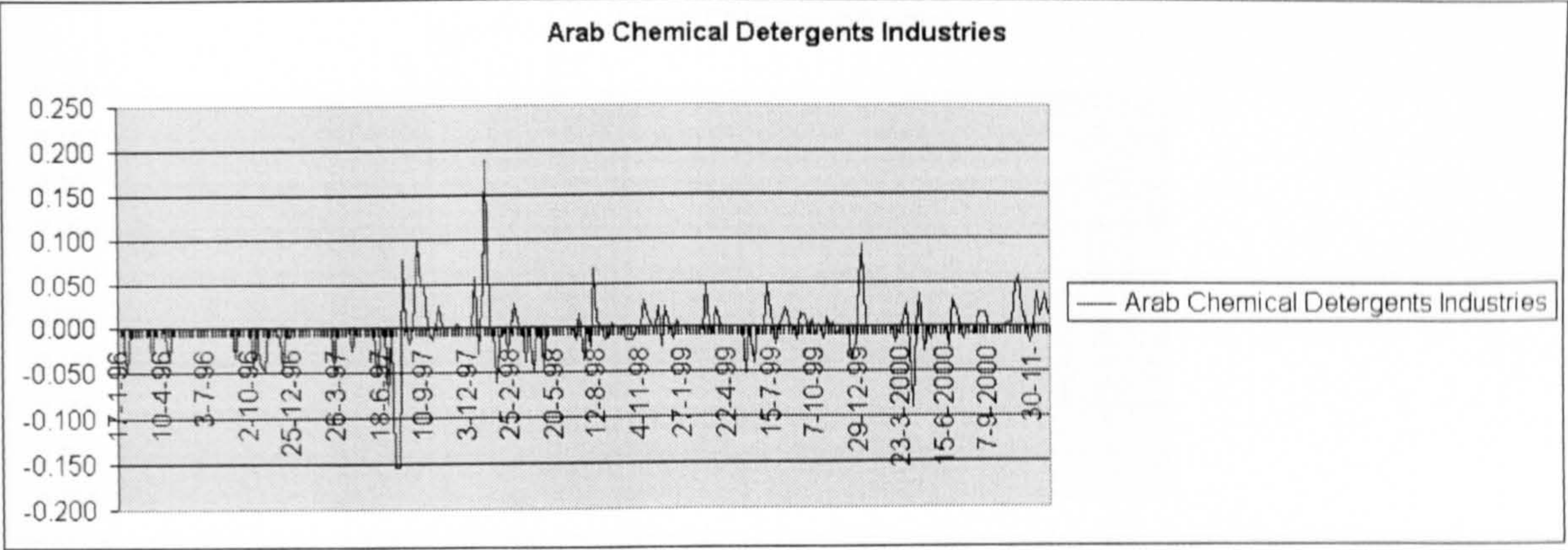




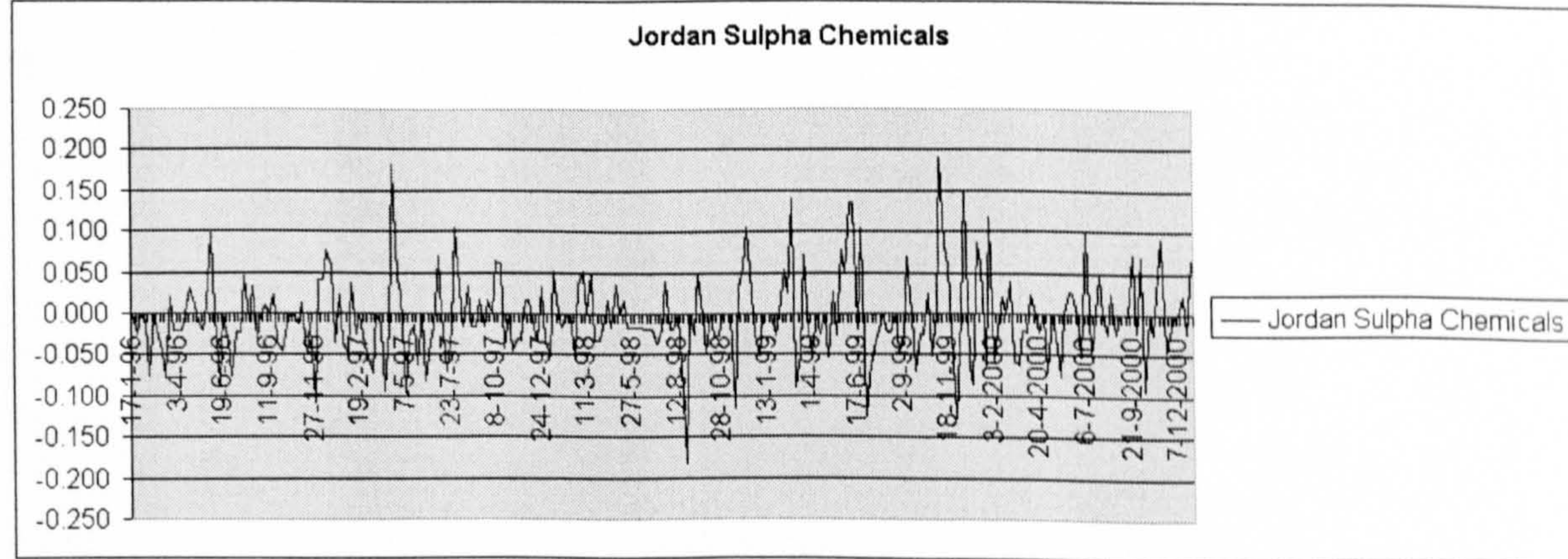
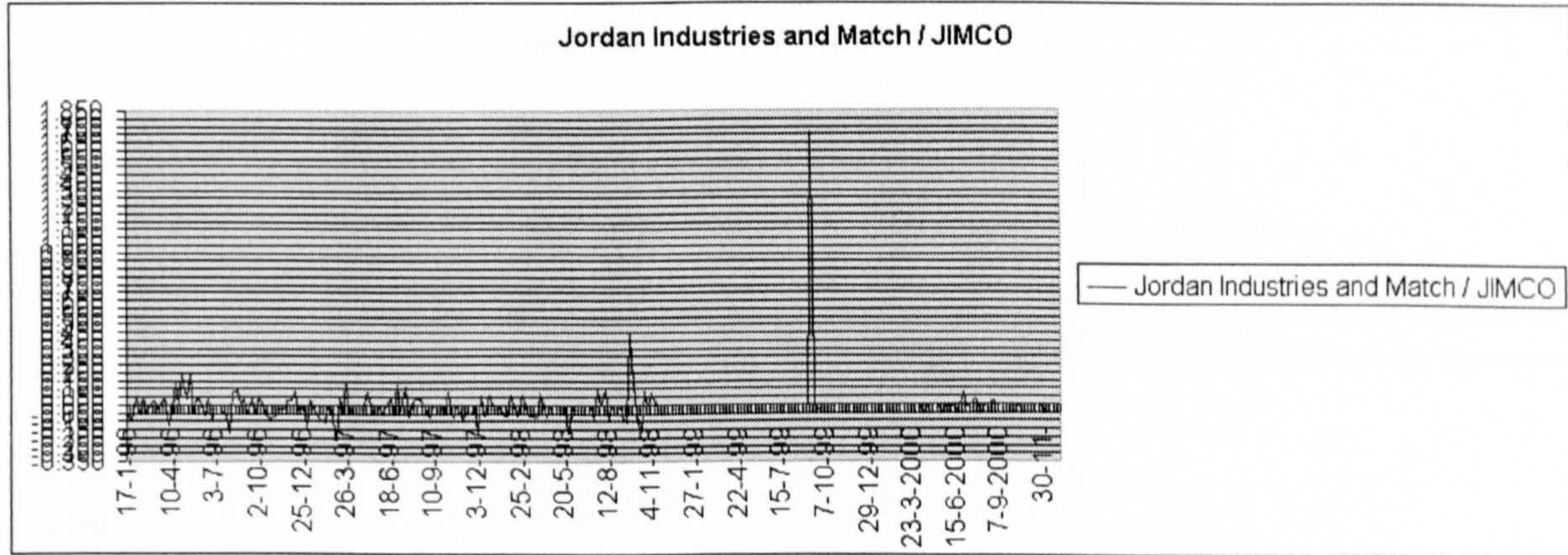
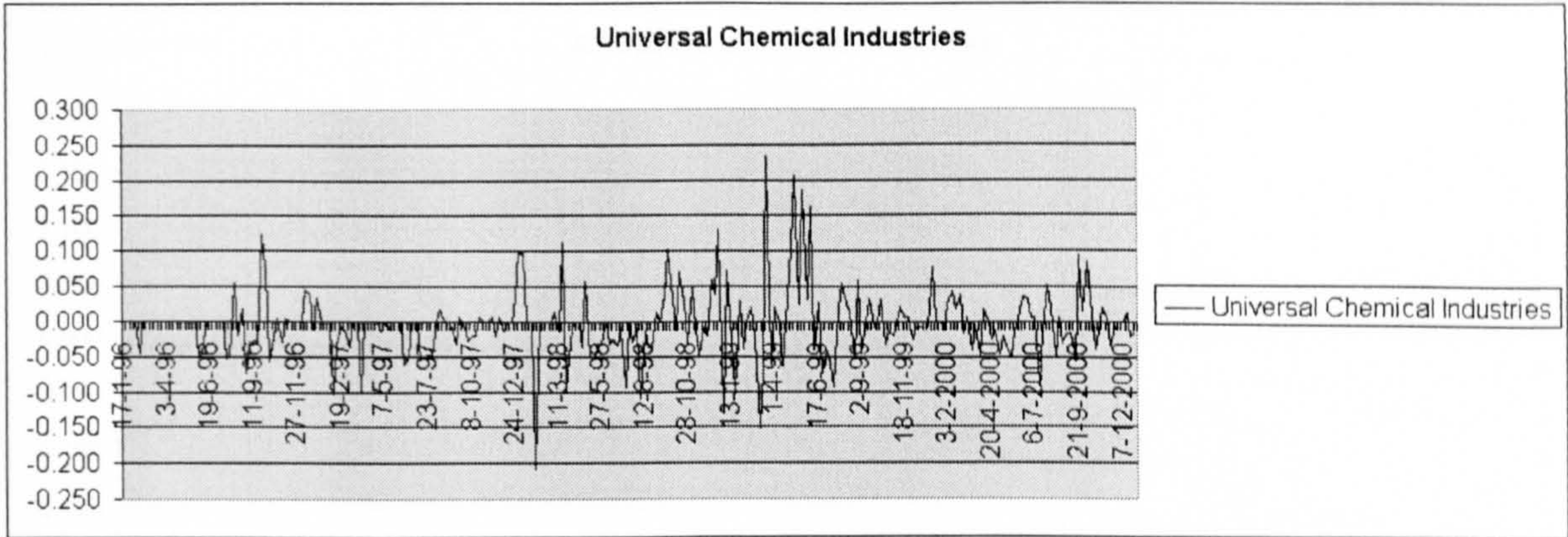
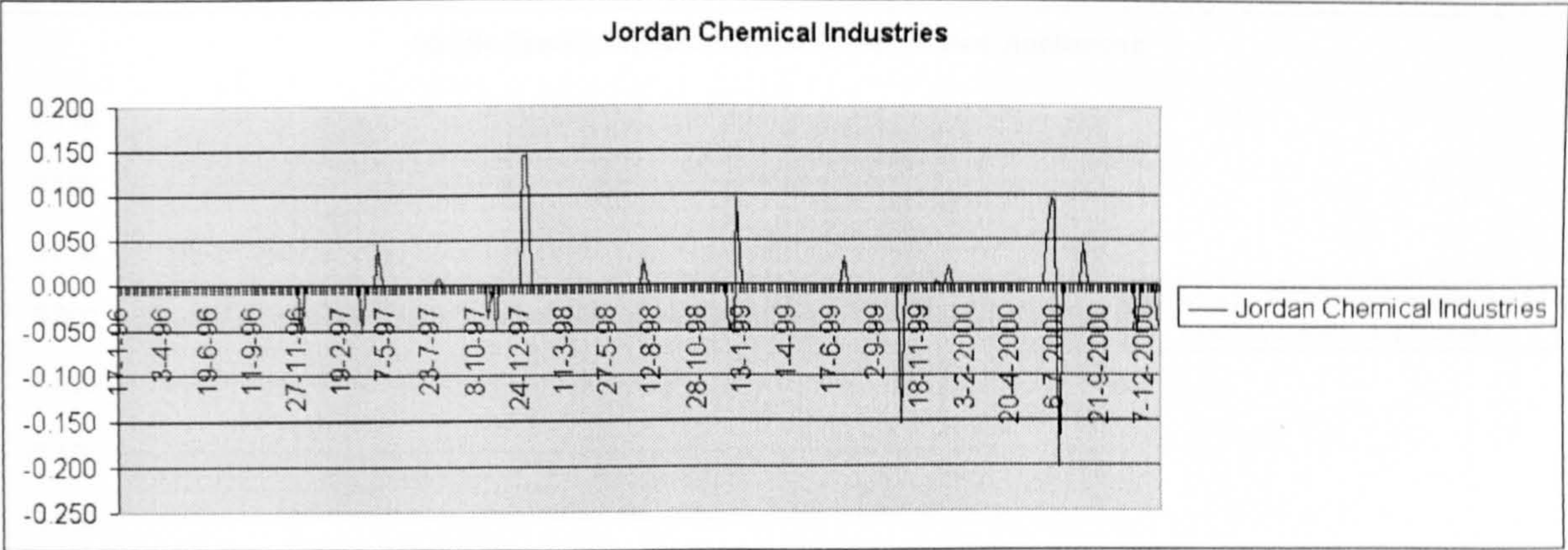




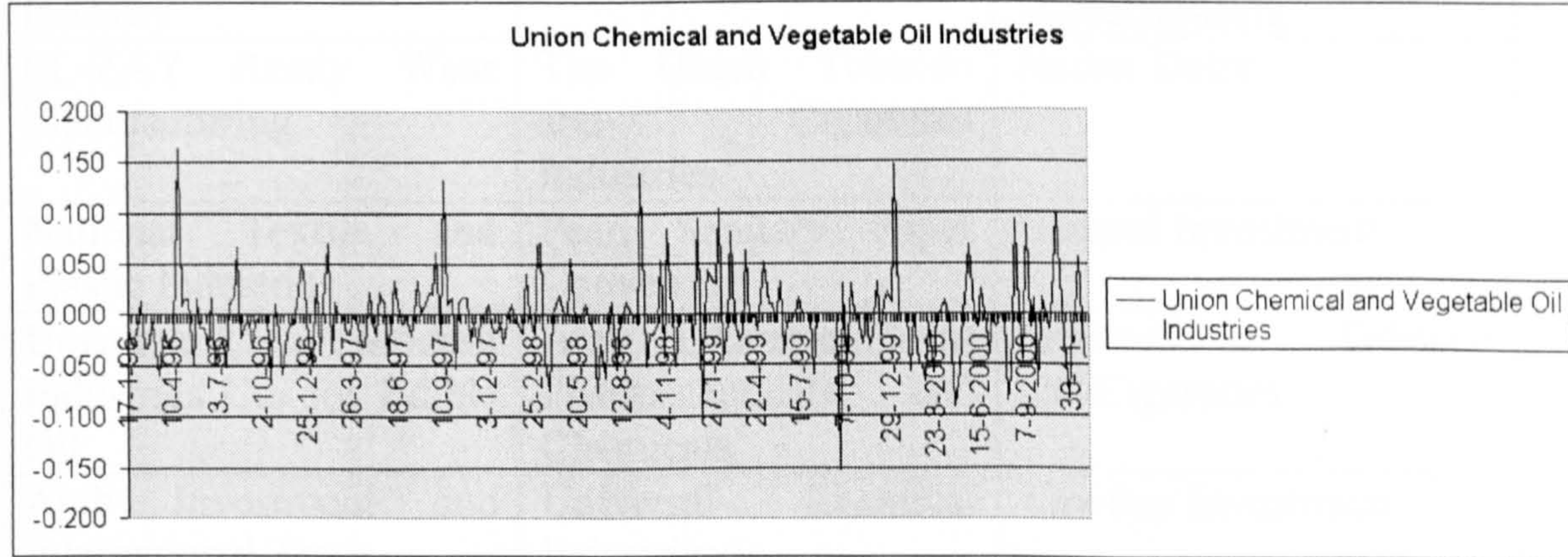
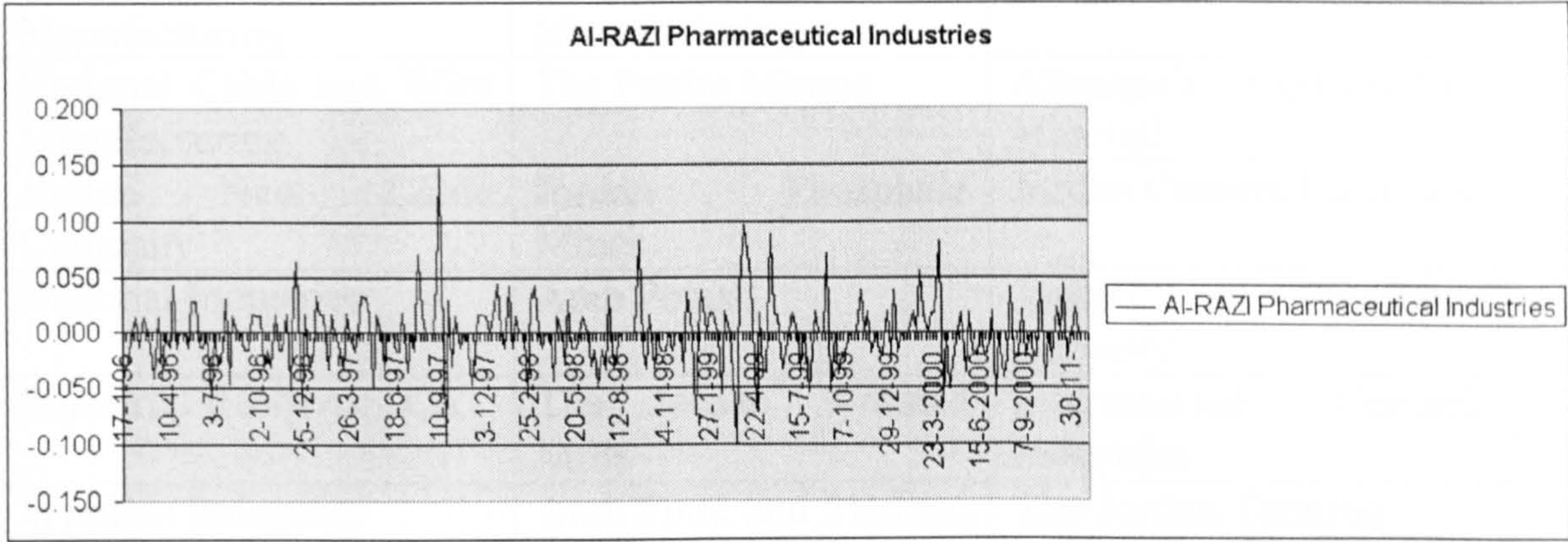
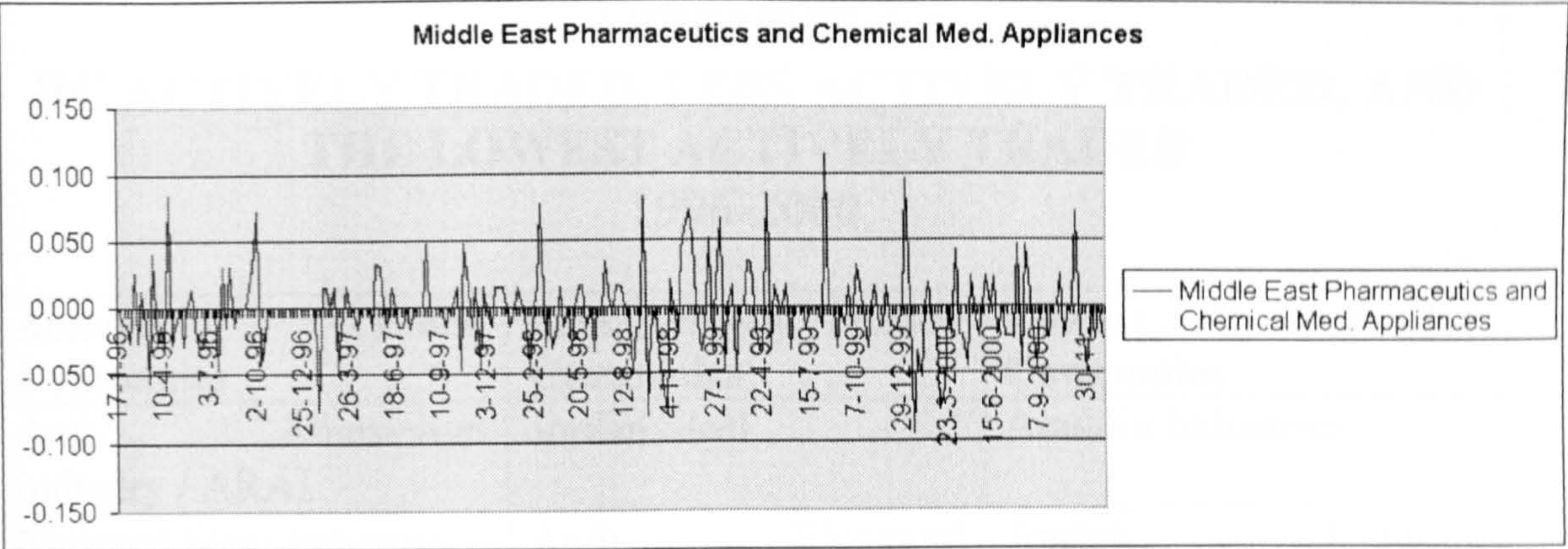














**APPENDIX 6**  
**JIC ACTIVELY TRADED, LESS ACTIVELY TRADED, AND**  
**THE LOWEST ACTIVELY TRADED**  
**1996-2000**

<b>Actively Traded Companies</b>	<b>Less Actively Traded Companies</b>	<b>Lowest Actively Traded Companies</b>
Arab Aluminium Industry / ARAL	Jordan Steel	Aladdin Industries
National Steel Industry	Arab Electrical Industries	Jordan Ceramic Industries
The Jordan Pipes Manufacturing	RUM Metal Manufacturing	RAFIA Industries
National Cable and Wire Manufacturing	The Public Mining	Attaneeb Construction Material
Jordan New Cable Company	Jordan Phosphate Mines	Jordan Cement Factories
National Industries	Arab Potash	Jordan Petroleum Refinery
Industrial Resources Co.	The Jordan Worsted Mills	International Ceramic Industries
Woollen Industries	Arab Food and Medical Appliances	The Jordan Tanning
Jordan Rock Wool Industry	Livestock and Poultry	International Textile Manufacturing
EL-ZAY Ready Wear Manufacturing	The Union Tobacco and Cigarettes Industries	Jordan Dairy
National Textile and Plastic Industries	Pearl Sanitary Paper Converting	General Investment
Universal Modern Industries Co. for Edible Oil	Arab Centre for Pharmaceuticals and Chemicals	International Tobacco and Cigarettes
Arab Investment and International Trade	Universal Chemical Industries	Kawther Investment
The Industrial, Commercial and Agricultural	Middle East and Pharmaceutics and Chemical Med. Appliances	The Arab Pharmaceutical Manufacturing
Intermediate Petrochemicals Industries	AL-RAZI Pharmaceutical Industries	The Arab Chemical Detergents Industries
Jordan Sulpha Chemicals		Dar Al-Dawa Development and Investment
Union Chemical and Vegetable Oil Industries		Jordan Chemical Industries
		Jordan Industries and Match / JIMCO

## APPENDIX 7

### INCLUDED AND EXCLUDED JIC SYSTEMATIC RISK ESTIMATED BY BETA 1996-2000

1996	Included JIC Beta	1996	Excluded JIC Beta
Arab Aluminium Industry / ARAL	0.0242	Aladdin Industries	0.2293
National Steel Industry	0.0959	Jordan Ceramic Industries	-0.0377
The Jordan Pipes Manufacturing	-0.2666	Jordan Phosphate Mines	-0.0332
National Capel and Wire Manufacturing	-0.7745	RAFIA Industries	0.2196
Jordan New Cable Company	0.3698	Attanqeeb Construction Material	-0.0656
Jordan Steel	0.2880	Jordan Cement Factories	0.5140
Arab Electrical Industries	-0.3616	Jordan Petroleum Refinery	0.1123
United Engineering Industries / RUM	0.5101	Arab Potash	0.5355
The Public Mining	-0.0704	International Ceramic Industries	0.0198
National Industries	0.5789	The Jordan Worsted Mills	0.0529
Industrial Resources Co.	1.0145	The Jordan Tanning	0.0157
Woolen Industries	0.4794	International Textile Manufacturing	-0.1578
Jordan Rock Wool Industry	-0.1756	Jordan Dairy	0.0847
EL-ZAY Ready Wear Manufacturing	0.8030	General Investment	-0.2035
National Textile and Plastic Industries	0.2883	International Tobacco and Cigarettes	0.5995
Arab Food and Medical Appliances	0.5229	Kawther Investment	-0.0115
Universal Modern Industries Co. for Edible Oil	1.0387	Pearl Sanitary Paper Converting	-0.0811
Arab Investment and International Trade	0.4192	The Arab Pharmaceutical Manufacturing	0.2718
Livestock and Poultry	1.0823	The Arab Chemical Detergents Industries	-0.3345
Union Tobacco	0.5051	Dar Al-Dawa Development and Investment	0.1867
The Industrial, Commercial and Agricultural	-1.5547	Jordan Chemical Industries	-0.0443
Intermediate Petrochemicals Industries	0.3441	Universal Chemical Industries	0.1200
Arab Center for Pharmaceuticals and Chemicals	0.5693	Jordan Industries and Match / JIMCO	0.5897



1996	Included JIC Beta	1996	Excluded JIC Beta
Jordan Sulpha Chemicals	-0.1959	AL-RAZI Pharmaceutical Industries	0.5307
Middle East Pharmaceuticals and Chemical Med. Appliances	0.1482		
Union Chemical and Vegetable Oil Industries	0.6082		

1997	Included JIC Beta	1997	Excluded JIC Beta
Arab Aluminium Industry / ARAL	-0.2705	Aladdin Industries	0.5880
National Steel Industry	-0.2146	Jordan Steel	-0.2704
The Jordan Pipes Manufacturing	-0.4758	Arab Electrical Industries	0.0714
National Capel and Wire Manufacturing	0.5394	The Public Mining	-0.2757
Jordan New Cable Company	-0.0075	Jordan Ceramic Industries	0.1049
United Engineering Industries / RUM	-0.2248	Jordan Phosphate Mines	0.1752
National Industries	-0.3699	RAFIA Industries	0.1103
Industrial Resources Co.	-0.2497	Attaneeb Construction Material	-0.0695
Woolen Industries	-0.4443	Jordan Cement Factories	0.2523
Jordan Rock Wool Industry	0.3184	Jordan Petroleum Refinery	-0.0248
EL-ZAY Ready Wear Manufacturing	-0.4863	Arab Potash	0.2903
National Textile and Plastic Industries	0.0541	International Ceramic Industries	0.1049
Arab Food and Medical Appliances	-0.6810	The Jordan Worsted Mills	-0.4373
Universal Modern Industries Co. for Edible Oil	0.4523	The Jordan Tanning	-0.3804
Arab Investment and International Trade	0.1306	International Textile Manufacturing	-0.7826
Union Tobacco	-0.1314	Jordan Dairy	0.0280
The Industrial, Commercial and Agricultural	-0.1384	General Investment	1.3093
Intermediate Petrochemicals Industries	0.2082	International Tobacco and Cigarettes	0.1587
Jordan Sulpha Chemicals	-0.0238	Kawther Investment	0.0681
AL-RAZI Pharmaceutical Industries	-0.0340	Livestock and Poultry	-0.1834

1997	Included JIC Beta	1997	Excluded JIC Beta
Union Chemical and Vegetable Oil Industries	0.1730	Pearl Sanitary Paper Converting	0.2027
		The Arab Pharmaceutical Manufacturing	-0.0867
		The Arab Chemical Detergents Industries	-0.5272
		Dar Al-Dawa Development and Investment	0.1455
		Arab Center for Pharmaceuticals and Chemicals	0.1990
		Jordan Chemical Industries	-0.4771
		Universal Chemical Industries	-0.4319
		Jordan Industries and Match / JIMCO	0.8427
		Middle East Pharmaceuticals and Chemical Med. Appliances	0.0783

1998	Included JIC Beta	1998	Excluded JIC Beta
Arab Aluminum Industry / ARAL	0.1573	Aladdin Industries	0.0213
National Steel Industry	-0.2962	Jordan Ceramic Industries	-0.8336
The Jordan Pipes Manufacturing	0.1007	RAFIA Industries	0.3639
National Capel and Wire Manufacturing	0.3199	Attanqeeb Construction Material	-0.0264
Jordan New Cable Company	0.0413	Jordan Cement Factories	-0.6312
Jordan Steel	-0.2193	Jordan Petroleum Refinery	0.0031
Arab Electrical Industries	-0.4557	International Ceramic Industries	-0.8336
United Engineering Industries / RUM	0.1651	The Jordan Worsted Mills	-0.1136
The Public Mining	0.0015	The Jordan Tanning	-0.0428
Jordan Phosphate Mines	-0.1312	International Textile Manufacturing	0.3474
National Industries	-0.1707	Jordan Dairy	0.1327
Industrial Resources Co.	0.0371	General Investment	-0.0498
Arab Potash	0.1420	International Tobacco and Cigarettes	0.0046
Woolen Industries	-0.0407	Kawther Investment	-0.1191



1998	Included JIC Beta	1998	Excluded JIC Beta
Jordan Rock Wool Industry	0.4743	Livestock and Poultry	0.1001
EL-ZAY Ready Wear Manufacturing	-0.2014	Pearl Sanitary Paper Converting	0.2225
National Textile and Plastic Industries	0.1388	The Arab Pharmaceutical Manufacturing	0.0126
Arab Food and Medical Appliances	-0.1726	The Arab Chemical Detergents Industries	0.0127
Universal Modern Industries Co. for Edible Oil	-0.0753	Dar Al-Dawa Development and Investment	-0.1116
Arab Investment and International Trade	-0.1038	Arab Center for Pharmaceuticals and Chemicals	0.0583
Union Tobacco	-0.0981	Jordan Chemical Industries	-0.0568
The Industrial, Commercial and Agricultural	0.1265	Jordan Industries and Match / JIMCO	0.5020
Intermediate Petrochemicals Industries	0.5437		
Universal Chemical Industries	0.1735		
Jordan Sulpha Chemicals	0.2552		
Middle East Pharmaceuticals and Chemical Med. Appliances	-0.1357		
AL-RAZI Pharmaceutical Industries	-0.1079		
Union Chemical and Vegetable Oil Industries	-0.2477		

1999	Included JIC Beta	1999	Excluded JIC Beta
Arab Aluminum Industry / ARAL	-0.0763	Aladdin Industries	-0.0569
National Steel Industry	0.3029	Arab Electrical Industries	0.1435
The Jordan Pipes Manufacturing	0.1964	RUM Metal Manufacturing	0.2703
National Capel and Wire Manufacturing	0.2788	The Public Mining	-
Jordan New Cable Company	0.1184	Jordan Ceramic Industries	0.2144
Jordan Steel	-0.4840	RAFLA Industries	0.0384
Jordan Phosphate Mines	-0.2862	Attanqeeb Construction Material	-0.0174
National Industries	0.4439	Jordan Cement Factories	-0.0238
Industrial Resources Co.	0.2146	Jordan Petroleum Refinery	-0.0209

1999	Included JIC Beta	1999	Excluded JIC Beta
Arab Potash	0.0616	International Ceramic Industries	0.2144
The Jordan Worsted Mills	0.1900	The Jordan Tanning	-0.0925
Woolen Industries	0.5719	International Textile Manufacturing	0.4595
Jordan Rock Wool Industry	-0.0664	Jordan Dairy	-0.0661
EL-ZAY Ready Wear Manufacturing	0.1543	General Investment	-0.1659
National Textile and Plastic Industries	0.0188	International Tobacco and Cigarettes	0.2578
Arab Food and Medical Appliances	-0.3267	Kawther Investment	-0.1096
Universal Modern Industries Co. for Edible Oil	0.2263	Livestock and Poultry	-0.1007
Arab Investment and International Trade	0.4570	The Union Tobacco and Cigarettes Industries	0.4135
The Industrial, Commercial and Agricultural	0.2424	Pearl Sanitary Paper Converting	-0.1017
Intermediate Petrochemicals Industries	-0.1790	The Arab Pharmaceutical Manufacturing	-0.0563
Universal Chemical Industries	0.8589	The Arab Chemical Detergents Industries	-0.0465
Jordan Sulpha Chemicals	-0.1751	Dar Al-Dawa Development and Investment	0.5020
Middle East Pharmaceuticals and Chemical Med. Appliances	-0.1142	Arab Center for Pharmaceuticals and Chemicals	0.1612
AL-RAZI Pharmaceutical Industries	0.1343	Jordan Chemical Industries	0.2420
Union Chemical and Vegetable Oil Industries	-0.0053	Jordan Industries and Match / JIMCO	0.6425

2000	Included JIC Beta	2000	Excluded JIC Beta
Arab Aluminum Industry / ARAL	-0.6156	Aladdin Industries	-0.0518
National Steel Industry	-0.4896	Jordan Ceramic Industries	-0.1669
The Jordan Pipes Manufacturing	-0.4859	RAFIA Industries	-0.4620
National Capel and Wire Manufacturing	-0.1246	Attanqeeb Construction Material	-
Jordan New Cable Company	0.0004	Jordan Cement Factories	0.0709
Jordan Steel	0.0754	Jordan Petroleum Refinery	0.1156
Arab Electrical Industries	-0.3500	International Ceramic Industries	-0.1669



<b>2000</b>	<b>Included JIC Beta</b>	<b>2000</b>	<b>Excluded JIC Beta</b>
United Engineering Industries / RUM	-1.1779	The Jordan Tanning	0.1360
The Public Mining	-0.1951	International Textile Manufacturing	-0.0334
Jordan Phosphate Mines	0.0012	Jordan Dairy	-0.0208
National Industries	-0.2385	General Investment	0.2284
Industrial Resources Co.	0.1281	International Tobacco and Cigarettes	0.0695
Arab Potash	0.1721	Arab Food and Medical Appliances	-
The Jordan Worsted Mills	0.1243	Kawther Investment	-0.4684
Woolen Industries	0.1445	Livestock and Poultry	-0.2446
Jordan Rock Wool Industry	-0.2016	The Union Tobacco and Cigarettes Industries	-0.0610
EL-ZAY Ready Wear Manufacturing	0.0088	The Arab Pharmaceutical Manufacturing	-0.3111
National Textile and Plastic Industries	0.1977	The Arab Chemical Detergents Industries	-0.0553
Universal Modern Industries Co. for Edible Oil	-0.0906	Dar Al-Dawa Development and Investment	-0.1564
Arab Investment and International Trade	0.2619	Arab Center for Pharmaceuticals and Chemicals	-0.0943
Pearl Sanitary Paper Converting	0.1722	Jordan Chemical Industries	-0.0069
The Industrial, Commercial and Agricultural	-0.9109	Jordan Industries and Match / JIMCO	0.0298
Intermediate Petrochemicals Industries	-0.3676		
Universal Chemical Industries	-0.1950		
Jordan Sulpha Chemicals	-0.0049		
Middle East Pharmaceuticals and Chemical Med. Appliances	-0.0852		
AL-RAZI Pharmaceutical Industries	-0.2589		
Union Chemical and Vegetable Oil Industries	-0.1751		

APPENDIX 8  
INCLUDED AND EXCLUDED JIC UNSYSTEMATIC RISK ESTIMATED BY RESIDUALS VARIANCE  
1996-2000

1996	Included Residuals Variance	JIC	1996	Excluded Residuals Variance	JIC
Arab Aluminium Industry / ARAL	0.0017813297000		Aladdin Industries	0.000632939	
National Steel Industry	0.0012928566020		Jordan Steel	0.001328655	
The Jordan Pipes Manufacturing	0.0010353252290		Arab Electrical Industries	0.001569841	
National Cable and Wire Manufacturing	0.0017549973540		United Engineering Industries / RUM	0.002796248	
Jordan New Cable Company	0.0013990997702		The Public Mining	0.001038442	
National Industries	0.0017601052187		Jordan Ceramic Industries	0.000260497	
Industrial Resources Co.	0.0023754894333		Jordan Phosphate Mines	0.000444863	
Woollen Industries	0.0012753752457		RAFIA Industries	0.000900062	
Jordan Rock Wool Industry	0.0022707932395		Attanqeeb Construction Material	0.00028372	
EL-ZAY Ready Wear Manufacturing	0.0014420270885		Jordan Cement Factories	0.000511271	
National Textile and Plastic Industries	0.0026506561729		Jordan Petroleum Refinery	0.000554283	
Universal Modern Industries Co. for Edible Oil	0.0018512089952		Arab Potash	0.000507737	
Arab Investment and International Trade	0.0031948865915		International Ceramic Industries	0.000583714	
The Industrial, Commercial and Agricultural	0.0039143892498		The Jordan Worsteds Mills	0.000343776	
Intermediate Petrochemicals Industries	0.0035989508937		The Jordan Tanning	0.000049494	
Jordan Sulpha Chemicals	0.0015614809750		International Textile Manufacturing	0.002060761	
Union Chemical and Vegetable Oil Industries	0.0013079638645		Jordan Dairy	0.000346239	
			General Investment	0.000528856	
			International Tobacco and Cigarettes	0.000790114	
			Arab Food and Medical Appliances	0.002741470	



1996	Included Residuals Variance	JIC	1996	Excluded Residuals Variance	JIC
			Kawther Investment	0.001775217	
			Livestock and Poultry	0.006427445	
			Union Tobacco	0.001049127	
			Pearl Sanitary Paper Converting	0.001573941	
			The Arab Pharmaceutical Manufacturing	0.001337795	
			The Arab Chemical Detergents Industries	0.000231518	
			Dar Al-Dawa Development and Investment	0.001284542	
			Arab Centre for Pharmaceuticals and Chemicals	0.004564951	
			Jordan Chemical Industries	0.000053576	
			Universal Chemical Industries	0.001096565	
			Jordan Industries and Match / JIMCO	0.005325044	
			Middle East Pharmaceuticals and Chemical Med. Appliances	0.000702249	
			AL-RAZI Pharmaceutical Industries	0.000664759	

1997	Included Residuals Variance	JIC	1997	Excluded Residuals Variance	JIC
Arab Aluminium Industry / ARAL	0.0013903934155		Aladdin Industries	0.003977355	
National Steel Industry	0.0006969631170		Jordan Steel	0.000280085	
The Jordan Pipes Manufacturing	0.0005957260801		Arab Electrical Industries	0.000285738	
National Cable and Wire Manufacturing	0.0041456690863		United Engineering Industries / RUM	0.001350024	
Jordan New Cable Company	0.0003195838700		The Public Mining	0.000876226	
National Industries	0.0011578865941		Jordan Ceramic Industries	0.001018659	

Industrial Resources Co.	0.0012343629461	Jordan Phosphate Mines	0.000563551
Woollen Industries	0.0013804945941	RAFIA Industries	0.001257499
Jordan Rock Wool Industry	0.0013396797646	Attanqeeb Construction Material	0.000436069
EL-ZAY Ready Wear Manufacturing	0.0010729190195	Jordan Cement Factories	0.000842101
National Textile and Plastic Industries	0.0008979079196	Jordan Petroleum Refinery	0.000370393
Universal Modern Industries Co. for Edible Oil	0.0016529043175	Arab Potash	0.000465674
Arab Investment and International Trade	0.0012176403529	International Ceramic Industries	0.001018659
The Industrial, Commercial and Agricultural	0.0027430069567	The Jordan Worsted Mills	0.000511832
Intermediate Petrochemicals Industries	0.0014112943549	The Jordan Tanning	0.000983735
Jordan Sulpha Chemicals	0.0024261219020	International Textile Manufacturing	0.001581866
Union Chemical and Vegetable Oil Industries	0.0009974459117	Jordan Dairy	0.00081552
		General Investment	0.010833726
		International Tobacco and Cigarettes	0.000417428
		Arab Food and Medical Appliances	0.002026187
		Kawther Investment	0.00119622
		Livestock and Poultry	0.000992818
		Union Tobacco	0.001026257
		Pearl Sanitary Paper Converting	0.000955796
		The Arab Pharmaceutical Manufacturing	0.000502416
		The Arab Chemical Detergents Industries	0.001635074
		Dar Al-Dawa Development and Investment	0.000712029
		Arab Centre for Pharmaceuticals and Chemicals	0.000575914
		Jordan Chemical Industries	0.000502456
		Universal Chemical Industries	0.000935951
		Jordan Industries and Match / JIMCO	0.0042907
		Middle East Pharmaceuticals and Chemical Med. Appliances	0.000488444



			AL-RAZI Pharmaceutical Industries	0.001213770
<b>1998</b>		<b>Included JIC Residuals Variance</b>	<b>1998</b>	<b>Excluded JIC Residuals Variance</b>
Arab Aluminium Industry / ARAL		0.0023961056291	Aladdin Industries	0.00061727
National Steel Industry		0.0027783111235	Jordan Steel	0.000927743
The Jordan Pipes Manufacturing		0.0004581538822	Arab Electrical Industries	0.001426672
National Cable and Wire Manufacturing		0.0012198494190	United Engineering Industries / RUM	0.002404924
Jordan New Cable Company		0.0009237052369	The Public Mining	0.003260009
National Industries		0.0021164985353	Jordan Ceramic Industries	0.01004462
Industrial Resources Co.		0.0024453793862	Jordan Phosphate Mines	0.003120726
Woollen Industries		0.0054806129057	RAFIA Industries	0.004550799
Jordan Rock Wool Industry		0.0022134655020	Attanqeeb Construction Material	0.000028968
EL-ZAY Ready Wear Manufacturing		0.0008437599977	Jordan Cement Factories	0.003577794
National Textile and Plastic Industries		0.0032926036471	Jordan Petroleum Refinery	0.000271039
Universal Modern Industries Co. for Edible Oil		0.0023307494490	Arab Potash	0.001278463
Arab Investment and International Trade		0.0042138745489	International Ceramic Industries	0.01004462
The Industrial, Commercial and Agricultural		0.0017391376000	The Jordan Worsted Mills	0.000671363
Intermediate Petrochemicals Industries		0.0034894658665	The Jordan Tanning	0.000494662
Jordan Sulpha Chemicals		0.0018659267371	International Textile Manufacturing	0.004713563
Union Chemical and Vegetable Oil Industries		0.0016420239922	Jordan Dairy	0.000241455
			General Investment	0.000830192
			International Tobacco and Cigarettes	0.001968708
			Arab Food and Medical Appliances	0.003383492
			Kawther Investment	0.002721674
			Livestock and Poultry	0.001105271

		Union Tobacco	0.001403516
		Pearl Sanitary Paper Converting	0.00411734
		The Arab Pharmaceutical Manufacturing	0.011685943
		The Arab Chemical Detergents Industries	0.001115547
		Dar Al-Dawa Development and Investment	0.00089721
		Arab Centre for Pharmaceuticals and Chemicals	0.000650866
		Jordan Chemical Industries	0.00053297
		Universal Chemical Industries	0.003454984
		Jordan Industries and Match / JIMCO	0.007499771
		Middle East Pharmaceuticals and Chemical Med. Appliances	0.001143615
		AL-RAZI Pharmaceutical Industries	0.000725369

1999	Included JIC Residuals Variance	1999	Excluded JIC Residuals Variance
Arab Aluminium Industry / ARAL	0.0008526343373	Aladdin Industries	0.002167003
National Steel Industry	0.0025344063000	Jordan Steel	0.000796290
The Jordan Pipes Manufacturing	0.0008773631294	Arab Electrical Industries	0.000279653
National Cable and Wire Manufacturing	0.0075053911680	RUM Metal Manufacturing	0.001370607
Jordan New Cable Company	0.0015632027428	The Public Mining	-
National Industries	0.0041808558764	Jordan Ceramic Industries	0.001126314
Industrial Resources Co.	0.0033394611706	Jordan Phosphate Mines	0.002294769
Woollen Industries	0.0018946658391	RAFIA Industries	0.00097444
Jordan Rock Wool Industry	0.0040833267955	Attanqeeb Construction Material	0.000169529
EL-ZAY Ready Wear Manufacturing	0.0004402667546	Jordan Cement Factories	0.001656444
National Textile and Plastic Industries	0.0036110660095	Jordan Petroleum Refinery	0.000269413



1999	Included JIC Residuals Variance	1999	Excluded JIC Residuals Variance
Universal Modern Industries Co. for Edible Oil	0.0022123788151	Arab Potash	0.001079001
Arab Investment and International Trade	0.0019281448725	International Ceramic Industries	0.001126314
The Industrial, Commercial and Agricultural	0.0023934991569	The Jordan Worsted Mills	0.002512945
Intermediate Petrochemicals Industries	0.0061792244725	The Jordan Tanning	0.000472435
Jordan Sulpha Chemicals	0.0047793775641	International Textile Manufacturing	0.002368485
Union Chemical and Vegetable Oil Industries	0.0016207508824	Jordan Dairy	0.000280987
		General Investment	0.00146297
		International Tobacco and Cigarettes	0.001185574
		Arab Food and Medical Appliances	0.002287207
		Kawther Investment	0.003664043
		Livestock and Poultry	0.000648779
		The Union Tobacco and Cigarettes Industries	0.003033674
		Pearl Sanitary Paper Converting	0.002167061
		The Arab Pharmaceutical Manufacturing	0.000756098
		The Arab Chemical Detergents Industries	0.000320315
		Dar Al-Dawa Development and Investment	0.010456342
		Arab Centre for Pharmaceuticals and Chemicals	0.0008597
		Jordan Chemical Industries	0.000635764
		Universal Chemical Industries	0.004698370
		Jordan Industries and Match / JIMCO	0.056549438
		Middle East Pharmaceutics and Chemical Med. Appliances	0.000927462
		AL-RAZI Pharmaceutical Industries	0.001400084

2000	Included JIC Residuals Variance	2000	Excluded JIC Residuals Variance
Arab Aluminium Industry / ARAL	0.0024045221959	Aladdin Industries	0.00014489
National Steel Industry	0.0021826479759	Jordan Steel	0.001034167
The Jordan Pipes Manufacturing	0.0014799992822	Arab Electrical Industries	0.002588881
National Cable and Wire Manufacturing	0.0024405268314	United Engineering Industries / RUM	0.004870153
Jordan New Cable Company	0.0005791916448	The Public Mining	0.002376559
National Industries	0.0010341665053	Jordan Ceramic Industries	0.00046086
Industrial Resources Co.	0.0018905463449	Jordan Phosphate Mines	0.003721736
Woollen Industries	0.0004815277980	RAFIA Industries	0.002214891
Jordan Rock Wool Industry	0.0022518701853	Attanqeeb Construction Material	-
EL-ZAY Ready Wear Manufacturing	0.0012088462882	Jordan Cement Factories	0.000693754
National Textile and Plastic Industries	0.0013309602529	Jordan Petroleum Refinery	0.000148884
Universal Modern Industries Co. for Edible Oil	0.0012830838706	Arab Potash	0.001091974
Arab Investment and International Trade	0.0023544657606	International Ceramic Industries	0.00046086
The Industrial, Commercial and Agricultural	0.0054520841724	The Jordan Worsteds Mills	0.003022231
Intermediate Petrochemicals Industries	0.0060562315862	The Jordan Tanning	0.000317223
Jordan Sulpha Chemicals	0.0022438762744	International Textile Manufacturing	0.001931717
Union Chemical and Vegetable Oil Industries	0.0023168741117	Jordan Dairy	0.004101299
		General Investment	0.000681951
		International Tobacco and Cigarettes	0.000686135
		Arab Food and Medical Appliances	-
		Kawther Investment	0.000773894
		Livestock and Poultry	0.001326041
		The Union Tobacco and Cigarettes Industries	0.000324257
		Pearl Sanitary Paper Converting	0.011076433



2000	Included JIC Residuals Variance	2000	Excluded JIC Residuals Variance
		The Arab Pharmaceutical Manufacturing	0.000832574
		The Arab Chemical Detergents Industries	0.000618038
		Dar Al-Dawa Development and Investment	0.001315728
		Arab Center for Pharmaceuticals and Chemicals	0.000690809
		Jordan Chemical Industries	0.001352295
		Universal Chemical Industries	0.001283084
		Jordan Industries and Match / JIMCO	0.000355942
		Middle East Pharmaceutics and Chemical Med. Appliances	0.001157299
		AL-RAZI Pharmaceutical Industries	0.000759585

# APPENDIX 9

## A- TREASURY BILLS AND RISK FREE RATE

### 1996-2000

1996								
Issue Number	Issue Date	Maturity Date	Period	Size (Million JD)	Selling Price (Per 1000 JD)	Period/365	(1000/Selling Price)-1	Yearly Risk Free Rate
first/1996	01/02/1996	02/05/1996	91	10	978.4	0.2493	0.0221	0.0886
second/1996	02/03/1996	02/06/1996	92	10	978.72	0.2521	0.0217	0.0863
third/1996	01/04/1996	01/07/1996	91	10	978.25	0.2493	0.0222	0.0892
fourth/1996	04/05/1996	03/08/1996	91	10	977.91	0.2493	0.0226	0.0906
fifth/1996	02/06/1996	02/09/1996	92	10	978.06	0.2521	0.0224	0.089
sixth/1996	20/06/1996	20/06/1997	365	35.4				
Yearly Average Risk Free Rate								0.0887

**Risk Free Rate: Selling Price = per 1000 JD /  $1 + r$  (Period/365) (Money Market Securities, Chapter 4, P.117)**

1997								
Issue Number	Issue Date	Maturity Date	Period	Size (Million JD)	Selling Price (Per 1000 JD)	Period/365	(1000/Selling price)-1	Yearly Risk Free Rate
first/1997	21/06/1997	22/06/1998	366	35.4	-	-	-	0.08
Total								
Yearly Average Risk Free Rate								0.08

1998								
Issue Number	Issue Date	Maturity Date	Period	Size (Million JD)	Selling Price (Per 1000 JD)	Period/365	(1000/Selling price)-1	Yearly Risk Free Rate



first/1998/1	22/06/1998	22/06/1999	365	35.4					0.08
first/1998/2	20/07/1998	20/01/1999	184	54		96.583	0.5041	0.0354	0.0702
second/1998	22/11/1998	22/05/1999	181	75		95.504	0.4959	0.0471	0.0949
third/1998	22/11/1998	21/02/1999	91	25		97.706	0.2493	0.0235	0.0942
Yearly Average Risk Free Rate									0.0848

1999									
Issue Number	Issue Date	Maturity Date	Period	Size (Million JD)	Selling Price (Per 1000 JD)	Period/365	(1000/Selling price)-1	Yearly Risk Free Rate	
first/1999	30/01/1999	31/07/1999	182	64	95.365	0.4986	0.0486	0.0975	
second/1999	21/02/1999	23/05/1999	91	25	97.69	0.2493	0.0236	0.0948	
third/1999	23/05/1999	23/11/1999	184	100	95.529	0.5041	0.0468	0.0928	
fourth/1999	23/06/1999	22/12/1999	182	36	95.799	0.4986	0.0439	0.0879	
fifth/1999	01/08/1999	31/01/2000	183	64	96.302	0.5014	0.0384	0.0766	
sixth/1999	26/09/1999	26/03/2000	182	50	96.593	0.4986	0.0353	0.0707	
seventh/1999	23/11/1999	23/05/2000	181	100	96.882	0.4959	0.0322	0.0649	
eighth/1999	22/12/1999	22/06/2000	183	36	96.99	0.5014	0.031	0.0619	
Yearly Average Risk Free Rate									0.0809

2000									
Issue Number	Issue Date	Maturity Date	Period	Size (Million JD)	Selling Price (Per 1000 JD)	Period/365	(1000/Selling price)-1	Yearly Risk Free Rate	
first/2000	31/01/2000	31/07/2000	182	64	97.438	0.4986	0.0263	0.0527	
second/2000	26/03/2000	26/09/2000	184	70	97.015	0.5041	0.0308	0.061	
third/2000	23/05/2000	19/11/2000	180	100	96.978	0.4932	0.0312	0.0632	
Fourth/2000	22/06/2000	24/12/2000	185	70	96.867	0.5068	0.0323	0.0638	

2000								
Issue Number	Issue Date	Maturity Date	Period	Size (Million JD)	Selling Price (Per 1000 JD)	Period/365	(1000/Selling price)-1	Yearly Risk Free Rate
fifth/2000	31/07/2000	28/01/2001	181	100	97.028	0.4959	0.0306	0.0618
sixth/2000	26/09/2000	25/03/2001	180	70	97.036	0.4932	0.0305	0.0619
seventh/2000	19/11/2000	20/05/2001	182	100	97.035	0.4986	0.0306	0.0613
Eighth/2000	24/12/2000	24/06/2001	182	70	97.066	0.4986	0.0302	0.0606
Yearly Average Risk Free Rate								0.0608

B- AMMAN STOCK EXCHANGE GENERAL INDEX AND MARKET RETURN  
1996-2000

Date	ASE General Index	Monthly Logarithm Market Return	Yearly Logarithm Market Return	Average Yearly Logarithm Market Return
31-1-96	154.4657	-	-	-0.0071
28-2-96	153.9665	-0.00324	-0.03884	
31-3-96	145.2915	-0.05799	-0.69591	
24-4-96	150.8078	0.037264	0.447164	
29-5-96	146.9709	-0.02577	-0.30926	
30-6-96	141.4236	-0.03847	-0.4617	
31-7-96	136.8336	-0.03299	-0.39593	
31-8-96	144.3361	0.053379	0.640544	
30-9-96	147.95	0.02473	0.296759	
30-10-96	148.1196	0.001145	0.013745	
30-11-96	152.8857	0.031671	0.380049	
30-12-96	153.4632	0.00377	0.045241	
29-1-97	153.1627	-0.00196	-0.02352	
				0.09785



Date	ASE General Index	Monthly Logarithm Market Return	Yearly Logarithm Market Return	Average Yearly Logarithm Market Return
26-2-97	156.8193	0.023594	0.283123	
31-3-97	151.78	-0.03266	-0.39194	
30-4-97	150.2247	-0.0103	-0.1236	
31-5-97	162.76	0.080145	0.961738	
30-6-97	158.66	-0.02551	-0.30616	
30-7-97	166.87	0.050452	0.605418	
31-8-97	165.74	-0.00679	-0.08154	
30-9-97	176.21	0.061256	0.735074	
29-10-97	170.99	-0.03007	-0.36086	
30-11-97	171.34	0.002045	0.024538	
30-12-97	169.2388	-0.01234	-0.14807	0.005259
27-1-98	166.8317	-0.01432	-0.1719	
28-2-98	169.6355	0.016666	0.199994	
31-3-98	165.775	-0.02302	-0.27625	
29-4-98	170.3247	0.027075	0.324903	
31-5-98	179.7966	0.05412	0.649436	
30-6-98	174.6348	-0.02913	-0.34955	
29-7-98	180.1665	0.031185	0.374215	
31-8-98	179.4825	-0.0038	-0.04564	
30-9-98	171.2489	-0.04696	-0.56351	
31-10-98	161.8176	-0.05665	-0.67978	
30-11-98	165.1558	0.020419	0.245031	
30-12-98	170.1312	0.029681	0.356169	
31-1-99	178.5719	0.048422	0.581059	
28-2-99	182.5446	0.022003	0.264039	-0.01647

Date	ASE General Index	Monthly Logarithm Market Return	Yearly Logarithm Market Return	Average Yearly Logarithm Market Return
31-3-99	180.4547	-0.01152	-0.13818	
29-4-99	173.6971	-0.03817	-0.458	
31-5-99	170.8049	-0.01679	-0.2015	
30-6-99	168.3223	-0.01464	-0.17569	
29-7-99	166.8264	-0.00893	-0.10713	
31-8-99	162.8757	-0.02397	-0.28759	
30-9-99	157.9398	-0.03077	-0.36928	
31-10-99	157.8564	-0.00053	-0.00634	
30-11-99	162.0093	0.025968	0.311613	
29-12-99	167.3517	0.032444	0.389324	
31-1-2000	162.622	-0.02867	-0.34403	-0.22935
29-2-2000	159.2656	-0.02085	-0.25026	
30-3-2000	153.5746	-0.03639	-0.43665	
27-4-2000	146.525	-0.04699	-0.56388	
31-5-2000	147.7045	0.008018	0.096215	
29-6-2000	143.1737	-0.03116	-0.37386	
31-7-2000	138.9928	-0.02964	-0.35563	
31-8-2000	134.4905	-0.03293	-0.39514	
28-9-2000	132.6499	-0.01378	-0.16537	
31-10-2000	136.0246	0.025123	0.301475	
30-11-2000	134.2026	-0.01349	-0.16183	
21-12-2000	133.0528	-0.0086	-0.10325	



## APPENDIX 10

**INCLUDED AND EXCLUDED JIC COST OF EQUITY CAPITAL ESTIMATED BY EXPECTED RETURN  
1996-2000**

1996	Included JIC Cost of Equity Capital	1996	Excluded JIC Cost of Equity Capital
Arab Aluminium Industry / ARAL	0.094	Aladdin Industries	0.087
National Steel Industry	0.075	Jordan Ceramic Industries	0.100
The Jordan Pipes Manufacturing	0.100	Jordan Phosphate Mines	0.118
National Cable and Wire Manufacturing	0.050	RAFIA Industries	0.085
Jordan New Cable Company	0.107	Attanqeeb Construction Material	0.114
Jordan Steel	0.103	Jordan Cement Factories	0.094
Arab Electrical Industries	0.071	Jordan Petroleum Refinery	0.115
United Engineering Industries / RUM	0.114	Arab Potash	0.080
The Public Mining	0.085	International Ceramic Industries	0.090
National Industries	0.139	The Jordan Worsteds Mills	0.129
Industrial Resources Co.	0.113	The Jordan Tanning	0.091
Woollen Industries	0.103	International Textile Manufacturing	0.090
Jordan Rock Wool Industry	0.115	Jordan Dairy	0.081
EL-ZAY Ready Wear Manufacturing	0.141	General Investment	0.093
National Textile and Plastic Industries	0.110	International Tobacco and Cigarettes	0.079
Arab Food and Medical Appliances	0.119	Kawther Investment	0.088
Universal Modern Industries Co. for Edible Oil	0.143	Pearl Sanitary Paper Converting	0.011
Arab Investment and International Trade	0.114	The Arab Pharmaceutical Manufacturing	0.072
Livestock and Poultry	0.085	The Arab Chemical Detergents Industries	0.098
Union Tobacco	0.102	Dar Al-Dawa Development and Investment	0.087
The Industrial, Commercial and Agricultural	0.106	Jordan Chemical Industries	0.118

1996	Included JIC Cost of Equity Capital	1996	Excluded JIC Cost of Equity Capital
Intermediate Petrochemicals Industries	0.117	Universal Chemical Industries	0.079
Arab Centre for Pharmaceuticals and Chemicals	0.095	Jordan Industries and Match / JIMCO	0.115
Jordan Sulpha Chemicals	0.096	AL-RAZI Pharmaceutical Industries	0.100
Middle East Pharmaceuticals and Chemical Med. Appliances	0.119		
Union Chemical and Vegetable Oil Industries	0.087		

1997	Included JIC Cost of Equity Capital	1997	Excluded JIC Cost of Equity Capital
Arab Aluminium Industry / ARAL	0.069	Aladdin Industries	0.077
National Steel Industry	0.056	Jordan Steel	0.069
The Jordan Pipes Manufacturing	0.109	Arab Electrical Industries	0.062
National Cable and Wire Manufacturing	0.107	The Public Mining	0.058
Jordan New Cable Company	0.080	Jordan Ceramic Industries	0.093
United Engineering Industries / RUM	0.068	Jordan Phosphate Mines	0.096
National Industries	0.056	RAFIA Industries	0.079
Industrial Resources Co.	0.083	Attanqeeb Construction Material	0.095
Woollen Industries	0.087	Jordan Cement Factories	0.085
Jordan Rock Wool Industry	0.073	Jordan Petroleum Refinery	0.058
EL-ZAY Ready Wear Manufacturing	0.073	Arab Potash	0.046
National Textile and Plastic Industries	0.090	International Ceramic Industries	0.061
Arab Food and Medical Appliances	0.071	The Jordan Worsted Mills	0.103
Universal Modern Industries Co. for Edible Oil	0.079	The Jordan Tanning	0.041
Arab Investment and International Trade	0.078	International Textile Manufacturing	0.081
Union Tobacco	0.054	Jordan Dairy	0.145



1997	Included JIC Cost of Equity Capital	1997	Excluded JIC Cost of Equity Capital
The Industrial, Commercial and Agricultural	0.109	General Investment	0.088
Intermediate Petrochemicals Industries	0.066	International Tobacco and Cigarettes	0.083
Jordan Sulpha Chemicals	0.066	Kawther Investment	0.090
AL-RAZI Pharmaceutical Industries	0.089	Livestock and Poultry	0.076
Union Chemical and Vegetable Oil Industries	0.086	Pearl Sanitary Paper Converting	0.089
		The Arab Pharmaceutical Manufacturing	0.087
		The Arab Chemical Detergents Industries	0.090
		Dar Al-Dawa Development and Investment	0.056
		Arab Center for Pharmaceuticals and Chemicals	0.058
		Jordan Chemical Industries	0.122
		Universal Chemical Industries	0.084
		Jordan Industries and Match / JIMCO	0.084
		Middle East Pharmaceuticals and Chemical Med. Appliances	0.085

1998	Included JIC Cost of Equity Capital	1998	Excluded JIC Cost of Equity Capital
Arab Aluminium Industry / ARAL	0.093	Aladdin Industries	0.086
National Steel Industry	0.070	Jordan Ceramic Industries	0.043
The Jordan Pipes Manufacturing	0.090	RAFIA Industries	0.103
National Cable and Wire Manufacturing	0.101	Attanqeeb Construction Material	0.084
Jordan New Cable Company	0.087	Jordan Cement Factories	0.053
Jordan Steel	0.074	Jordan Petroleum Refinery	0.085
Arab Electrical Industries	0.062	International Ceramic Industries	0.043
United Engineering Industries / RUM	0.093	The Jordan Worsted Mills	0.083

1998	Included JIC Cost of Equity Capital	1998	Excluded JIC Cost of Equity Capital
The Public Mining	0.085	The Jordan Tanning	0.079
Jordan Phosphate Mines	0.078	International Textile Manufacturing	0.083
National Industries	0.076	Jordan Dairy	0.102
Industrial Resources Co.	0.087	General Investment	0.091
Arab Potash	0.092	International Tobacco and Cigarettes	0.082
Woollen Industries	0.109	Kawther Investment	0.079
Jordan Rock Wool Industry	0.075	Livestock and Poultry	0.090
EL-ZAY Ready Wear Manufacturing	0.092	Pearl Sanitary Paper Converting	0.080
National Textile and Plastic Industries	0.076	The Arab Pharmaceutical Manufacturing	0.085
Arab Food and Medical Appliances	0.085	The Arab Chemical Detergents Industries	0.085
Universal Modern Industries Co. for Edible Oil	0.081	Dar Al-Dawa Development and Investment	0.079
Arab Investment and International Trade	0.080	Arab Center for Pharmaceuticals and Chemicals	0.088
Union Tobacco	0.096	Jordan Chemical Industries	0.082
The Industrial, Commercial and Agricultural	0.091	Jordan Industries and Match / JIMCO	0.110
Intermediate Petrochemicals Industries	0.112		
Universal Chemical Industries	0.093		
Jordan Sulpha Chemicals	0.098		
Middle East Pharmaceuticals and Chemical Med. Appliances	0.078		
AL-RAZI Pharmaceutical Industries	0.079		
Union Chemical and Vegetable Oil Industries	0.072		
1999	Included JIC Cost of Equity Capital	1999	Excluded JIC Cost of Equity Capital
Arab Aluminium Industry / ARAL	0.077	Aladdin Industries	-



1999	Included JIC Cost of Equity Capital	1999	Excluded JIC Cost of Equity Capital
National Steel Industry	0.096	Arab Electrical Industries	0.067
The Jordan Pipes Manufacturing	0.091	RUM Metal Manufacturing	0.103
National Cable and Wire Manufacturing	0.095	The Public Mining	0.092
Jordan New Cable Company	0.087	Jordan Ceramic Industries	0.092
Jordan Steel	0.057	RAFIA Industries	0.083
Jordan Phosphate Mines	0.084	Attanqeeb Construction Material	0.080
National Industries	0.090	Jordan Cement Factories	0.080
Industrial Resources Co.	0.109	Jordan Petroleum Refinery	0.080
Arab Potash	0.078	International Ceramic Industries	0.092
The Jordan Worsted Mills	0.089	The Jordan Tanning	0.076
Woollen Industries	0.082	International Textile Manufacturing	0.104
Jordan Rock Wool Industry	0.065	Jordan Dairy	0.078
EL-ZAY Ready Wear Manufacturing	0.092	General Investment	0.073
National Textile and Plastic Industries	0.104	International Tobacco and Cigarettes	0.094
Arab Food and Medical Appliances	0.075	Kawther Investment	0.076
Universal Modern Industries Co. for Edible Oil	0.093	Livestock and Poultry	0.102
Arab Investment and International Trade	0.072	The Union Tobacco and Cigarettes Industries	0.076
The Industrial, Commercial and Agricultural	0.072	Pearl Sanitary Paper Converting	0.124
Intermediate Petrochemicals Industries	0.075	The Arab Pharmaceutical Manufacturing	0.078
Universal Chemical Industries	0.088	The Arab Chemical Detergents Industries	0.079
Jordan Sulpha Chemicals	0.081	Dar Al-Dawa Development and Investment	0.106
Middle East Pharmaceuticals and Chemical Med. Appliances	0.078	Arab Center for Pharmaceuticals and Chemicals	0.089
AL-RAZI Pharmaceutical Industries	0.088	Jordan Chemical Industries	0.093
Union Chemical and Vegetable Oil Industries	0.094	Jordan Industries and Match / JIMCO	0.113

2000	Included JIC Cost of Equity Capital	2000	Excluded JIC Cost of Equity Capital
Arab Aluminium Industry / ARAL	0.030	Aladdin Industries	0.058
National Steel Industry	0.036	Jordan Ceramic Industries	0.052
The Jordan Pipes Manufacturing	0.037	RAFIA Industries	0.038
National Cable and Wire Manufacturing	0.055	Attanqeeb Construction Material	-
Jordan New Cable Company	0.061	Jordan Cement Factories	0.064
Jordan Steel	0.065	Jordan Petroleum Refinery	0.067
Arab Electrical Industries	0.043	International Ceramic Industries	0.052
United Engineering Industries / RUM	0.002	The Jordan Tanning	0.068
The Public Mining	0.051	International Textile Manufacturing	0.059
Jordan Phosphate Mines	0.061	Jordan Dairy	0.060
National Industries	0.049	General Investment	0.072
Industrial Resources Co.	0.067	International Tobacco and Cigarettes	0.064
Arab Potash	0.069	Arab Food and Medical Appliances	-
The Jordan Worsteds Mills	0.067	Kawther Investment	0.037
Woollen Industries	0.068	Livestock and Poultry	0.049
Jordan Rock Wool Industry	0.051	The Union Tobacco and Cigarettes Industries	0.058
EL-ZAY Ready Wear Manufacturing	0.061	The Arab Pharmaceutical Manufacturing	0.045
National Textile and Plastic Industries	0.071	The Arab Chemical Detergents Industries	0.058
Universal Modern Industries Co. for Edible Oil	0.056	Dar Al-Dawa Development and Investment	0.053
Arab Investment and International Trade	0.074	Arab Center for Pharmaceuticals and Chemicals	0.056
Pearl Sanitary Paper Converting	0.069	Jordan Chemical Industries	0.060
The Industrial, Commercial and Agricultural	0.015	Jordan Industries and Match / JIMCO	0.062
Intermediate Petrochemicals Industries	0.042		
Universal Chemical Industries	0.051		



2000		Included JIC Cost of Equity Capital	2000	Excluded JIC Cost of Equity Capital
Jordan Sulpha Chemicals		0.061		
Middle East Pharmaceuticals and Chemical Med. Appliances		0.057		
AL-RAZI Pharmaceutical Industries		0.048		
Union Chemical and Vegetable Oil Industries		0.052		

## APPENDIX 11

**CORRELATION COEFFICIENTS BETWEEN  
VARIABLES (EXTENT OF DISCLOSURE, BUSINESS  
RISK, AND FINANCIAL RISK) AND STEPWISE  
REGRESSION RESULTS  
1996-2000**

**Pearson Correlation Coefficients – 1996\***

	<b>Business Risk</b>	<b>Financial Risk</b>
<b>Disclosure</b>	-0.17037	0.052865
	(0.405342)	(0.797579)
<b>Business Risk</b>		0.210122
		(0.302877)
* P-values at the 0.05 level (two-tailed) are provided in parentheses		

**Pearson Correlation Coefficients – 1997\***

	<b>Business Risk</b>	<b>Financial Risk</b>
<b>Disclosure</b>	-0.35491	0.183428
	(0.114401)	(0.426097)
<b>Business Risk</b>		0.035884
		(0.877277)
* P-values at the 0.05 level (two-tailed) are provided in parentheses		

**Pearson Correlation Coefficients – 1998\***

	<b>Business Risk</b>	<b>Financial Risk</b>
<b>Disclosure</b>	0.560564	0.058253
	(0.001918)	(0.768421)
<b>Business Risk</b>		-0.0477
		(0.809528)
* P-values at the 0.05 level (two-tailed) are provided in parentheses		

**Pearson Correlation Coefficients – 1999\***

	<b>Business Risk</b>	<b>Financial Risk</b>
<b>Disclosure</b>	0.459457	0.181987
	(0.020856)	(0.383943)
<b>Business Risk</b>		-0.21746
		(0.296404)
* P-values at the 0.05 level (two-tailed) are provided in parentheses		

**Pearson Correlation Coefficients – 2000\***

	<b>Business Risk</b>	<b>Financial Risk</b>
<b>Disclosure</b>	0.710271	-0.11427
	(3.32E-05)	(0.570345)
<b>Business Risk</b>		-0.07578
		(0.707164)
* P-values at the 0.05 level (two-tailed) are provided in parentheses		



**Pearson Correlation Coefficients – 1996-2000\***

	<b>Business Risk</b>	<b>Financial Risk</b>
<b>Disclosure</b>	0.521161	0.070816
	(3.23E-10)	(0.428851)
<b>Business Risk</b>		-0.06644
		(0.457996)
* P-values at the 0.05 level (two-tailed) are provided in parentheses		

**Stepwise regression Results 1996-2000**

<b>Variable</b>	<b>Coefficient</b>	<b>Standard Error</b>	<b>t-ratio</b>
<b>Extent of Disclosure</b>	-0.0388	0.017709	-2.1909*
<b>R<sup>2</sup></b>	0.036698	<b>Adjusted R<sup>2</sup></b>	0.029052
<b>Standard Error</b>	0.022964	<b>Sum of Squares</b>	0.068976

\* P-value at 0.05 level (two-tailed) statistically significant (Sig. 0.03)

APPENDIX 12  
INCLUDED AND EXCLUDED JIC SHARE PRICE VOLATILITY ESTIMATED BY STANDARD  
DEVIATION  
1996-2000

1996	Included Standard Deviation	JIC	1996	Excluded Standard Deviation	JIC
Arab Aluminium Industry / ARAL	0.042206824		Aladdin Industries	0.025302287	
National Steel Industry	0.035973135		Jordan Ceramic Industries	0.01614596	
The Jordan Pipes Manufacturing	0.032328972		Jordan Phosphate Mines	0.021095162	
National Cable and Wire Manufacturing	0.042868928		RAFIA Industries	0.03011099	
Jordan New Cable Company	0.037655772		Attanqeeb Construction Material	0.01686238	
Jordan Steel	0.036606636		Jordan Cement Factories	0.023403152	
Arab Electrical Industries	0.039847816		Jordan Petroleum Refinery	0.023580091	
United Engineering Industries / RUM	0.053217598		Arab Potash	0.023395426	
The Public Mining	0.032235576		International Ceramic Industries	0.024160843	
National Industries	0.042501591		The Jordan Worsted Mills	0.018551109	
Industrial Resources Co.	0.050174468		The Jordan Tanning	0.007037332	
Woollen Industries	0.036153644		International Textile Manufacturing	0.045433351	
Jordan Rock Wool Industry	0.047697951		Jordan Dairy	0.01863371	
EL-ZAY Ready Wear Manufacturing	0.039127751		General Investment	0.023121505	
National Textile and Plastic Industries	0.051595493		International Tobacco and Cigarettes	0.028978002	
Arab Food and Medical Appliances	0.052718143		Kawther Investment	0.042133789	
Universal Modern Industries Co. for Edible Oil	0.044721851		Pearl Sanitary Paper Converting	0.039684434	
Arab Investment and International Trade	0.05673744		The Arab Pharmaceutical Manufacturing	0.036714551	
Livestock and Poultry	0.081172738		The Arab Chemical Detergents Industries	0.015715231	
Union Tobacco	0.032928522		Dar Al-Dawa Development and Investment	0.035908296	



<b>1996</b>		<b>Included Standard Deviation</b>	<b>JIC</b>	<b>1996</b>		<b>Excluded Standard Deviation</b>	<b>JIC</b>
The Industrial, Commercial and Agricultural		0.065175699		Jordan Chemical Industries		0.007337917	
Intermediate Petrochemicals Industries		0.060127436		Universal Chemical Industries		0.033145327	
Arab Centre for Pharmaceuticals and Chemicals		0.067894275		Jordan Industries and Match / JIMCO		0.073301419	
Jordan Sulpha Chemicals		0.039582522		AL-RAZI Pharmaceutical Industries		0.026525528	
Middle East Pharmaceuticals and Chemical Med. Appliances		0.026557198					
Union Chemical and Vegetable Oil Industries		0.036865097					

<b>1997</b>		<b>Included Standard Deviation</b>	<b>JIC</b>	<b>1997</b>		<b>Excluded Standard Deviation</b>	<b>JIC</b>
Arab Aluminium Industry / ARAL		0.037593533		Aladdin Industries		0.063918306	
National Steel Industry		0.02667039		Jordan Steel		0.017406274	
The Jordan Pipes Manufacturing		0.02581743		Arab Electrical Industries		0.016949991	
National Cable and Wire Manufacturing		0.06508957		The Public Mining		0.029999086	
Jordan New Cable Company		0.017877435		Jordan Ceramic Industries		0.031970195	
United Engineering Industries / RUM		0.036956874		Jordan Phosphate Mines		0.02394035	
National Industries		0.034650593		RAFIA Industries		0.035514527	
Industrial Resources Co.		0.035409912		Attanqeeb Construction Material		0.020918447	
Woollen Industries		0.037976735		Jordan Cement Factories		0.029359767	
Jordan Rock Wool Industry		0.037031538		Jordan Petroleum Refinery		0.019250185	
EL-ZAY Ready Wear Manufacturing		0.033864998		Arab Potash		0.022181582	
National Textile and Plastic Industries		0.02998028		International Ceramic Industries		0.031970195	
Arab Food and Medical Appliances		0.046595811		The Jordan Worsted Mills		0.023908427	
Universal Modern Industries Co. for Edible Oil		0.041435297		The Jordan Tanning		0.032077464	
Arab Investment and International Trade		0.034970609		International Textile Manufacturing		0.04211118	

<b>1997</b>	<b>Included JIC Standard Deviation</b>	<b>1997</b>	<b>Excluded JIC Standard Deviation</b>
Union Tobacco	0.032119211	Jordan Dairy	0.028562196
The Industrial, Commercial and Agricultural	0.052431246	General Investment	0.10662879
Intermediate Petrochemicals Industries	0.037747266	International Tobacco and Cigarettes	0.020622598
Jordan Sulpha Chemicals	0.04925775	Kawther Investment	0.034607204
AL-RAZI Pharmaceutical Industries	0.034843783	Livestock and Poultry	0.031674974
Union Chemical and Vegetable Oil Industries	0.031730013	Pearl Sanitary Paper Converting	0.031123056
		The Arab Pharmaceutical Manufacturing	0.022466885
		The Arab Chemical Detergent Industries	0.041495861
		Dar Al-Dawa Development and Investment	0.026806921
		Arab Center for Pharmaceuticals and Chemicals	0.024254585
		Jordan Chemical Industries	0.023950513
		Universal Chemical Industries	0.031532186
		Jordan Industries and Match / JIMCO	0.06717674
		Middle East Pharmaceuticals and Chemical Med. Appliances	0.022144782

<b>1998</b>	<b>Included JIC Standard Deviation</b>	<b>1998</b>	<b>Excluded JIC Standard Deviation</b>
Arab Aluminium Industry / ARAL	0.049155637	Aladdin Industries	0.024851992
National Steel Industry	0.053383848	Jordan Ceramic Industries	0.103007435
The Jordan Pipes Manufacturing	0.021597549	RAFIA Industries	0.068254095
National Cable and Wire Manufacturing	0.036100235	Attanqeeb Construction Material	0.005434559
Jordan New Cable Company	0.030414698	Jordan Cement Factories	0.06246872
Jordan Steel	0.031094663	Jordan Petroleum Refinery	0.016462925



1998	Included JIC Standard Deviation	1998	Excluded JIC Standard Deviation
Arab Electrical Industries	0.03994721	International Ceramic Industries	0.103007435
United Engineering Industries / RUM	0.049266008	The Jordan Worsted Mills	0.026112555
The Public Mining	0.057096184	The Jordan Tanning	0.022274852
Jordan Phosphate Mines	0.055988876	International Textile Manufacturing	0.029610795
National Industries	0.04626293	Jordan Dairy	0.015994133
Industrial Resources Co.	0.049461878	General Investment	0.028847498
Arab Potash	0.035984732	International Tobacco and Cigarettes	0.044370477
Woollen Industries	0.074040185	Kawther Investment	0.052280258
Jordan Rock Wool Industry	0.048956532	Livestock and Poultry	0.033368499
EL-ZAY Ready Wear Manufacturing	0.029610795	Pearl Sanitary Paper Converting	0.064480281
National Textile and Plastic Industries	0.057518395	The Arab Pharmaceutical Manufacturing	0.108102474
Arab Food and Medical Appliances	0.058375431	The Arab Chemical Detergents Industries	0.033402325
Universal Modern Industries Co. for Edible Oil	0.048325997	Dar Al-Dawa Development and Investment	0.030122069
Arab Investment and International Trade	0.06498255	Arab Center for Pharmaceuticals and Chemicals	0.025566164
Union Tobacco	0.037568298	Jordan Chemical Industries	0.023143376
The Industrial, Commercial and Agricultural	0.041859331	Jordan Industries and Match / JIMCO	0.087777925
Intermediate Petrochemicals Industries	0.061074828		
Universal Chemical Industries	0.05898734		
Jordan Sulpha Chemicals	0.04380586		
Middle East Pharmaceuticals and Chemical Med. Appliances	0.034037994		
AL-RAZI Pharmaceutical Industries	0.027109527		
Union Chemical and Vegetable Oil Industries	0.041133623		



1999	Included Standard Deviation	JIC	1999	Excluded Standard Deviation	JIC
Arab Aluminium Industry / ARAL	0.029264621		Aladdin Industries	0.046574084	
National Steel Industry	0.050932011		Arab Electrical Industries	0.017119019	
The Jordan Pipes Manufacturing	0.030040017		RUM Metal Manufacturing	0.037656002	
National Cable and Wire Manufacturing	0.086924564		The Public Mining	-	
Jordan New Cable Company	0.039652917		Jordan Ceramic Industries	0.034002355	
Jordan Steel	0.030794755		RAFIA Industries	0.031231576	
Jordan Phosphate Mines	0.048455467		Attanqeeb Construction Material	0.01302821	
National Industries	0.065641039		Jordan Cement Factories	0.040704143	
Industrial Resources Co.	0.058046598		Jordan Petroleum Refinery	0.016423048	
Arab Potash	0.032885115		International Ceramic Industries	0.034002355	
The Jordan Worsted Mills	0.050362904		The Jordan Tanning	0.021863293	
Woollen Industries	0.045901062		International Textile Manufacturing	0.050056082	
Jordan Rock Wool Industry	0.063923273		Jordan Dairy	0.016847444	
EL-ZAY Ready Wear Manufacturing	0.021347747		General Investment	0.03848216	
National Textile and Plastic Industries	0.060093542		International Tobacco and Cigarettes	0.035053296	
Arab Food and Medical Appliances	0.04854392		Kawther Investment	0.060595826	
Universal Modern Industries Co. for Edible Oil	0.04738777		Livestock and Poultry	0.025600064	
Arab Investment and International Trade	0.045427994		The Union Tobacco and Cigarettes Industries	0.056077684	
The Industrial, Commercial and Agricultural	0.049311492		Pearl Sanitary Paper Converting	0.046623675	
Intermediate Petrochemicals Industries	0.078740214		The Arab Pharmaceutical Manufacturing	0.027533745	
Universal Chemical Industries	0.071952994		The Arab Chemical Detergents Industries	0.017936325	
Jordan Sulpha Chemicals	0.069276693		Dar Al-Dawa Development and Investment	0.103052852	
Middle East Pharmaceutics and Chemical Med. Appliances	0.030592139		Arab Center for Pharmaceuticals and Chemicals	0.029606868	
AL-RAZI Pharmaceutical Industries	0.037574392		Jordan Chemical Industries	0.025957765	



<b>1999</b>	<b>Included JIC Standard Deviation</b>	<b>1999</b>	<b>Excluded JIC Standard Deviation</b>
Union Chemical and Vegetable Oil Industries	0.040259418	Jordan Industries and Match / JIMCO	0.238364088

<b>2000</b>	<b>Included JIC Standard Deviation</b>	<b>2000</b>	<b>Excluded JIC Standard Deviation</b>
Arab Aluminium Industry / ARAL	0.051466118	Aladdin Industries	0.012108017
National Steel Industry	0.048343578	Jordan Ceramic Industries	0.021882123
The Jordan Pipes Manufacturing	0.040400573	RAFIA Industries	0.048502603
National Cable and Wire Manufacturing	0.049503022	Attaneeb Construction Material	-
Jordan New Cable Company	0.024066312	Jordan Cement Factories	0.026400855
Jordan Steel	0.032214576	Jordan Petroleum Refinery	0.012550126
Arab Electrical Industries	0.051651394	International Ceramic Industries	0.021882123
United Engineering Industries / RUM	0.075926096	The Jordan Tanning	0.018141988
The Public Mining	0.049001383	International Textile Manufacturing	0.043960129
Jordan Phosphate Mines	0.061005995	Jordan Dairy	0.064042835
National Industries	0.04389976	General Investment	0.026750495
Industrial Resources Co.	0.037738273	International Tobacco and Cigarettes	0.026253672
Arab Potash	0.033332457	Arab Food and Medical Appliances	-
The Jordan Worsteds Mills	0.055065334	Kawther Investment	0.030253856
Woolen Industries	0.022248405	Livestock and Poultry	0.036939868
Jordan Rock Wool Industry	0.047729392	The Union Tobacco and Cigarettes Industries	0.01807416
EL-ZAY Ready Wear Manufacturing	0.034768878	The Arab Pharmaceutical Manufacturing	0.029915637
National Textile and Plastic Industries	0.036825658	The Arab Chemical Detergents Industries	0.024900373
Universal Modern Industries Co. for Edible Oil	0.06873689	Dar Al-Dawa Development and Investment	0.036489879
Arab Investment and International Trade	0.048976992	Arab Center for Pharmaceuticals and Chemicals	0.026391705

<b>2000</b>	<b>Included JIC Standard Deviation</b>	<b>2000</b>	<b>Excluded JIC Standard Deviation</b>
Pearl Sanitary Paper Converting	0.105334837	Jordan Chemical Industries	0.036774241
The Industrial, Commercial and Agricultural	0.077375285	Jordan Industries and Match / JIMCO	0.018882016
Intermediate Petrochemicals Industries	0.078379469		
Universal Chemical Industries	0.03616131		
Jordan Sulpha Chemicals	0.047369738		
Middle East Pharmaceuticals and Chemical Med. Appliances	0.034087944		
AL-RAZI Pharmaceutical Industries	0.028333909		
Union Chemical and Vegetable Oil Industries	0.048339269		



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