

Variegated Firm Finance and Global Production Networks:
Car Component Manufacturers in Hungary and Eastern Germany

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Abstract

This study explores the financial dimension of global production networks, a major lacuna in global production networks theory only recently beginning to be addressed. It conceptually challenges accounts of capitalism as a uniform process by evidencing spatially variegated practices of capital sourcing by car component manufacturers in Hungary and Eastern Germany. It aims to determine how such patterns can be explained and understood by the firms' agency and embeddedness both in variegated forms of capitalism and, through ownership, within global production networks. The study further aims to assess potential implications on the firms' governance and on local and regional development prospects.

The research applies a mixed-methods approach combining quantitative analysis of data collected from publicly available sources with qualitative data from secondary sources. Based on a conceptual framework combining existing literature on variegated capitalism, global production networks and geographies of firm finance, it analyses the capital sources of around 160 Hungarian and 160 Eastern German car component manufacturers in the light of their location, size and ownership, arguing that financing practices (i) are not uniform but variegated, depending on historical, socio-institutional and political/regulatory contexts of regions in which firms operate, and on the firms' agency also shaping this context and (ii) are shaped by the firms' integration and relative position within networks of firms, shareholders, financial institutions and capital market investors.

The thesis empirically evidences geographical variegation in the capital sourcing patterns of the firms analysed and provides empirical evidence of variegation at regional levels. It highlights the important financial dimensions of global production networks by showing how firms owned by other firms within a global production network are financed in a way fundamentally different from those that are not. It also contributes to a better theorisation of less studied variegations of capitalism such as formerly state-socialist regions, supporting calls for a more fine-grained and nuanced analysis of geographies of finance both at and beneath the national level.

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Writing a PhD is a complex and demanding endeavour, which requires dedication and perseverance over a long period of time. It entails particular further challenges when the project is undertaken on a part time basis like this one, where the time and resources required to undertake and progress the project need to be reconciled with not only a private life but also a professional activity which both continue during that time. Such a project would therefore not be possible without the full support of all 'stakeholders' concerned, including the academic environment on the one side and both family and friends as well as the employer on the other side. I was in the fortunate situation of having this support from all three sides and would therefore like to express my gratitude to all of them.

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Abbreviations¹

ACOD	<i>Automotive Cluster Ostdeutschland GmbH</i> (association of car component manufacturers in Eastern Germany)
CME	Coordinated market economy
GCC	Global commodity chain
GPN	Global production network
GVC	Global value chain
HGB	<i>Handelsgesetzbuch</i> (German code of commerce)
LME	Liberal market economy
Majosz	<i>Magyar járműalkatrészgyárték országos egyesülete</i> (association of Hungarian car component manufacturers)
SME	Small- and medium-sized enterprise
OEM	Original equipment manufacturer
VoC	Varieties of capitalism

¹ As a general convention in this study, the acronyms VoC, GPN, GVC and GCC are used in association with another noun (e.g. 'VoC literature', 'GPN firms' or 'GVC research'), the full term is used otherwise (such as when discussing 'the varieties of capitalism' in Central Europe or 'global production networks' of car manufacturing). The term original equipment manufacturer is used in its acronym OEM as customary in the literature.

Chapter 1 Introduction

The geographical nature and implications of finance and its interrelatedness with local and regional development have increasingly attracted the attention of economic geographers over the years - often, but not exclusively, around financial crises (cf. e.g. Engelen and Faulconbridge 2009; Lee *et al.* 2009; Pike and Pollard 2010; Christophers 2013b; Pani and Holman 2013; Martin and Pollard 2017). This study interrogates firm's choices of capital sources and how and why they matter for local and regional development. It critically explores shifting spatial structures and variegated patterns of capital sourcing in firms marked by both post-socialism and global production networks, engaging with and challenging some of the existing debates in economic geography, with an empirical focus on a sample of car component manufacturers in Eastern Germany and Hungary. Too often, as Martin and Pollard (2017) recall, financial structures and processes are insufficiently analysed from a spatial level. This study responds to this and other similar calls for more critical attention and a more fine-grained and nuanced analysis of the geographies of firm finance and its implications. In the context of this study, the term capital (or firm capital) is used in the sense of the money made available to a firm (either by a third party such as equity investors or banks or through the production of the firm itself in the form of retained earnings) to make investments such as purchasing or renewing machinery or undertaking research and development, or to cover short term operating needs, with a focus on the relationships this entails between the entity that provides capital and the firm that uses it. While the term finance is used in a broader sense, being the processes and relationships whereby money circulates in an economy, the focus within this study is generally on the provision of capital as defined above and the relationships this entails.

This introductory chapter is organised in three parts. The first section (1.1) briefly presents the context and research background of the study based on a review of existing literature on variegated capitalism, global production networks and geographies of firm finance. The second section (1.2) provides an overview of the research objectives and research questions, exploring whether and how diverging patterns and practices of capital sourcing can be empirically evidenced among small, medium-sized and large car component manufacturers in

Eastern Germany and Hungary, and potential reasons and implications thereof. The third section (1.3) presents the general structure of the study.

1.1 Point of Departure and Research Context

Firm finance, understood here as the origin and modes of utilisation of capital in a firm (Jensen and Meckling 1976), is a fundamental aspect of any capitalist firm's activity. Capital is necessary to ensure production is possible. Finance is therefore a key function within any firm, be it in the form of a dedicated department or taken care of by the firm's owner in the case of small firms. Understanding firm finance and the relationships between the various actors involved within and outside the firm in the provision and management of the firm's capital is consequently key for anyone concerned with operating a firm or, such as academic researchers, interested in understanding the relevant processes and their wider implications. Such implications also touch upon wider questions of local and regional development: finance and development are not two separate and independent areas of human activity. They are rather strongly interrelated, with many situations being not either financial or development-related but both at the same time, simply looked at from different perspectives. Finance is sometimes considered as being separate from wider economic relations both within academic research and in wider political and economic discourse (e.g. opposing finance with the 'real economy') and has traditionally been seen as beyond small firm analysis (e.g. Gilman and Edwards 2008), but this distinction is increasingly being recognised as not pertinent (e.g. Lee *et al.* 2009; Pollard *et al.* 2017).

Can firms choose indifferently from different capital sources such as equity, bank debt or debt capital markets? If not, which geographical factors impact which sources firms can and do use? What is the firms' agency in this process? This study explores these questions through the empirical example of car component manufacturers in Hungary and Eastern Germany. Too often, capital is simply assumed by economic geographers as a 'taken for granted' aspect of production, with too little attention to the availability, sources and modes of utilisation of it (Pollard 2003). The central argument of this study is that there is geographical variegation in patterns of capital sourcing, and that such variegation matters for firm governance and local and regional development outcomes. The study aims to explain why and how that is the case, arguing that such variegation persists through time and space and countering arguments of homogenisation through globalisation in line e.g. with Peck and Theodore (2007). It advances

the understanding of financing patterns beyond the national frame by revealing what drives sub-national variegations at different scales beneath the national, including the regional level – with a key role for the ownership position of firms within global production networks. The study argues that the firms’ embeddedness (in both regions and networks) needs to be considered in this context, in that it shapes patterns of capital sourcing and firm agency with differentiated local and regional development outcomes.

Relevance of a Geographical Analysis of Firm Finance

Traditionally, the study of firm finance is an aspect on the curriculum of studies dedicated to the operation of firms (such as business administration or economics). It is much less frequently conceived as a topic of geographical interest and many of the common handbooks on finance do not mention space or place as a dimension of relevance for the understanding of firm finance. However, as shown hereafter, a significant amount of geographical research has been dedicated to firm finance, and the research field continues to grow.

Why is it relevant to study firm finance from a geographical perspective? In theory, firms can source capital in different forms such as equity, debt or subsidies, in each case from a variety of sources such as domestic or foreign shareholders or lenders, from the stock market or private equity investors. In pure economic theory and in a perfectly efficient market it does not matter from where and in which form the capital comes (cf. e.g. Miller and Modigliani 1958). In fuzzy reality however, and in geographic theory, it very much does: different sources of capital have different implications in terms of governance of the firm. The reason is that each form of capital is provided by specific types of individuals or institutions, the provision of capital therefore creates a relationship between the firm and the capital provider, and the characteristics of the capital provider (such as their type, their location etc.) impact the conditions under which capital is provided. The place of firms and their capital providers matter in the way the relationships between the two unfold across space and the implications on the firm’s operations are of a geographical nature as well. Providers and users of a firm’s capital are both embedded geographically and in circuits of value (understood as the circulation, capture and reinvestment of profits generated by a firm). The relationship between providers and users of a firm’s capital are marked by relationships of power and agency, and how a firm is financed, as well as the embeddedness and relationships of providers and users of a firm’s capital has an impact on the firm’s governance and wider local

and regional development. A geographical perspective on firm finance therefore undoubtedly contributes to a better understanding of these processes and their implications.

Firm finance has captured the interest of (at least certain) economic geographers for many years now (cf. e.g. Harvey 1982; Corbridge *et al.* 1994; Leyshon 1995). Recent years have seen an upsurge in this interest, to the point that a certain sub-field of economic geography was dubbed ‘financial geography’ concerned with geographies of finance on a range of different scales ranging from the individual and household to national economies, but also interested in finance at the level of individual firms (for an overview cf. e.g. Martin and Pollard 2017). Nevertheless, firm finance often continues to be seen as a kind of a “black box” (Pollard 2003), as a “taken for granted aspect of production” by economic geographers, with little focus on the sources and dynamics of capital provision to firms, little discussion of where and how firms source the capital they use in their production process and of how this influences their governance and development prospects. Even though there has been increasing attention to it over the last 20 years, an increasing number of scholars have drawn attention to the relative neglect money and finance continue to face within economic geography and regional studies (Lee *et al.* 2009). Despite the strong increase in geographical research on firm finance over the last years, it is therefore widely recognised that there remains a need to better understand how geographical factors interact with firm finance.

This study responds to these calls by making the case that firm finance is indeed very much a geographical topic, and that looking at firm finance from a geographical perspective can contribute significantly to better understanding its processes and wider implications. It is important not to simply assume the form, role and implications of finance for the governance of firms as well as local and regional development, but to empirically investigate to try to understand the underlying mechanisms (Pollard 2003). Among the large range of relevant perspectives from which the relationship between finance and local and regional development can be explored, this study addresses some of the research gaps identified by undertaking research on the evolving modes of capital sourcing of small, medium-sized and large car component manufacturers that are part of global production networks in post-socialist contexts. In other words, the thesis explores where the capital used by these firms comes from and aims to understand what that may mean for the firms’ governance as well as local and regional development implications. The question of agency (what options or means

the firms themselves have in this context) is also considered. Rather than considering the geography of finance from the perspective of financial centres or global financial institutions on which extensive research is available (cf. e.g. Jarvis 2011; Engelen and Glasmacher 2013; Wójcik 2013a; Zademach and Musil 2014), this study focuses on a group of firms as entities embedded both in regions and, through ownership in particular, in trans-regional networks of production. Such production networks consist of firms and non-firm actors embedded in various territories at various scales and in other types of networks. The car component manufacturing industry was chosen as an example of a capital-intensive industry where it could be expected that more firms would be likely to use capital market finance and be particularly sensitive to variations in cost and availability of capital rather than a labour-intensive industry (such as the garment industry, cf. e.g. Tokatli 2008). The car manufacturing industry is indeed a very complex universe of firms of all sizes, types and locations, employing about 8 million people worldwide (Dicken 2011) and producing a large variety of products ranging from the simplest components to the most complex assembled car. This study looks at small, medium-sized and large firms from the car component manufacturing industries as these, by the nature of their activity, are integrated into global production networks, producing not directly consumer goods, but rather elements used by their clients (larger component manufacturers and car assemblers) to produce cars. As a result, the integration of firms within these global production networks, and especially the ownership of some smaller firms by some of the larger firms therein could be expected to constrain and/or enhance the way these firms have access to, need and/or use capital in their production process.

Research Background

The topic of this study is situated at the intersection of research on variegated capitalism at a macro-level, research on global production networks at a meso-level and research on firm finance and its geographies, which is the micro level on which the empirical part of this study focuses, framed and informed by the two other, broader perspectives. In a novel approach aiming to integrate these three areas into a single conceptual framework for the analysis of a specific topic of financial geography, all three areas are analysed with a focus on the specific context of two post-socialist economies (Hungary and Eastern Germany). Each area is presented very briefly here before being reviewed in more detail in Chapter 2.

To assess factors explaining, at a macro-level, why firm finance materialises in differentiated ways in different spatial contexts, the theoretical frameworks of varieties of capitalism and variegated capitalism provide a useful tool of analysis (Section 2.1.1). They highlight the importance of (geographically differentiated and historically grown) institutional infrastructures, including both formal and informal institutions and the relationships between them. The idea underlying the concept of 'variegated firm finance' is that firm finance is not a homogeneous, monolithic and geographically undifferentiated phenomenon but it rather materialises in different forms depending on the institutional and historical context and the way it is mediated locally, and the outcome is variegated in different geographical contexts. The conceptual framework is further refined by going below the national level, highlighting how certain aspects of capitalist variegation are differentiated at the regional level (2.1.2). Each of these regional contexts responds differently to financial processes and is also likely to be transformed in a different way by actors, processes and discourses of finance. Overall these conceptual frameworks help understand and theoretically frame institutional infrastructures of capital provision as shaped by the specificities of the relevant variegations of capitalism in Hungary and Eastern Germany as analysed in the empirical part of this thesis. Local variegations of capitalism with a recent state-socialist past (such as these two regions) are a particularly interesting terrain to assess particular institutional infrastructures of capital provision because of the (historically grown and path-dependent) various ways in which institutions are constituted and have evolved there since the fall of the Iron Curtain. Research on variegated capitalism has contributed much to a better understanding of how different institutional contexts shape the operation of firms in different regions, but has so far insufficiently taken into account the institutional infrastructures of capital provision in post-socialist contexts.

At a meso-level, several frameworks defining trans-territorial firm networks of production are available to analyse the effects on local and regional development of firms being integrated in such networks. The global production networks (GPN) approach (2.2.1) is the most suitable for this study because of its strongly geographical dimension and its consideration for non-firm actors: it is therefore used as the basic framework for this study. However, the global commodity chain (GCC) and global value chain (GVC) frameworks offer interesting concepts such as governance and industrial upgrading, and are therefore used to complement the GPN

framework. Both the GPN and the GCC/GVC frameworks are particularly useful to illustrate how factors impacting the functioning of such production networks (such as in particular power relations between the firms) can in turn impact local and regional development through the effects of strategic coupling, creation, enhancement and capturing of value as well as industrial upgrading. The various factors influencing a firm's activity as part of a global production network influence the way it can operate, develop, create and add value, maintain jobs and contribute to local and regional development. Post-socialist transition economies in Central Europe constitute a particularly interesting terrain to analyse global production networks given their specific historical, social and institutional context, their specific ownership patterns and generally the questions of path dependency that can be explored there (2.2.2). Many global production networks in Central Europe, especially in the car manufacturing industry, are composed of foreign lead firms and their foreign tier-one suppliers, with local suppliers often relegated to the position of less influential tier-two and tier-three actors. Finance, including the ways in which firms are able or not to use comparatively inexpensive and stable/reliable capital, has thus far only received limited attention within GPN literature even though this is increasingly being recognised as a gap in the literature that is starting to be addressed (Section 2.2.3). More specifically however, the study of capital sources within GPNs has been and remains broadly absent from the literature so far. The conceptual structure of the GPN framework does provide the potential to integrate considerations regarding capital sourcing, and this study proposes to do so. The circulation of financial capital in the form of equity and dividends through the capital market between investors and the lead firms of global production networks is very common and largely analysed in the financialisation literature, but it is much less thematised as far as the debt sources of lead firms and any capital sources for smaller firms are concerned. Outside the scope of lead firms, the modes of capital sourcing at the level of supplier firms within global production networks remain largely under-researched (for a very interesting exception, cf. Baumeister and Zademach 2017). This research gap therefore remains large and is only just being recognised and addressed in the literature.

At the micro-level, firm finance has constituted an area of interest for economic geographers for many years now and it is recognised that it does not develop indifferently across regions and economic sectors (2.3.1): it is a profoundly geographical and historical phenomenon,

“mediated and contested by specific and particular configurations of spatialised social relations, social agency and socio-institutional contexts over time, across space and in place” (Pike 2006: 202). The form, degree and effects of financial processes depend on the specific context in which they take place, with that context’s specific regulatory, institutional and political conditions. There is a large general literature about firm finance and sources of capital available (Section 2.3.2), raising a range of interesting questions at the level of an individual firm, including (i) in what forms capital circulates between firms and capital providers, (ii) why that may (or may not) be the case and (iii) what the consequences thereof are. Why do (mainly large) firms issue equity through the stock market rather than keep their ownership private? Why do they issue bonds rather than use bank loans, state subsidies and/or internal funds? The reasons can be several and include both the availability and the cost of this resource as opposed to other possible sources of capital: capital obtained through the capital markets may be easier or more difficult to obtain than through state subsidies and bank loans, and it may be cheaper or more expensive than these alternative sources. It may also be more stable and reliable or less so as a source and it may come with more or less ‘intrusive’ constraints on the organisation and governance of the firm. Another key question is what effects this has on the activity of the firm and on its contribution to local and regional development. This implies issues such as, among others, a strengthened position of capital owners in their relationship with firm managers - with the concept of ‘shareholder value’ having for long dominated the debate but also received increased criticism within the financial community itself in recent times (Denning 2011; 2012), including its characterisation by a former CEO of General Electric as “the dumbest idea in the world” (Guerrera 2009) - the increasing financial activity of non-financial firms, and the increasing presence and international scope of action of new types of financial actors such as sovereign wealth funds and pension funds. Post-socialist economies in Central Europe, such as the two regions analysed in the empirical part of this thesis represent a particularly interesting context to analyse due to the fundamental transition from state-socialism to capitalism they have gone through since the late 1980s. Transition in these regions also meant the ‘importation’ of economic and financial concepts by certain actors (both public and private, local and international), which met existing local economic and political processes and demands and was mediated by them. The overall aim of this study is to get a more finely grained understanding of processes of capital sourcing and their geographies: why is it relevant to analyse patterns of capital sourcing and firm finance from a

geographical perspective? The question in a post-socialist context is how capital markets developed there and whether 'market adjustment' and the adoption of economic models was maybe more open than elsewhere. It remains to be seen though this study, however, to which extent the circulation of financial capital between investors and firms through the capital market in these regions can be evidenced. Despite the strong contributions made by research on geographies of finance so far, more research remains to be done to better understand the reasons and implications of differing patterns in the way capital is sourced differently by different types of firms in post-socialist regions like Hungary and Eastern Germany. One way of trying to shed light on this is to try and understand better how firms are embedded in networks with other actors that impact the way they source their capital.

To summarise, this study reviews literatures on variegated capitalism, global production networks and geographies of firm finance in a novel approach aiming to integrate the three areas to formulate a single conceptual framework and identify and answer recognised research gaps.

1.2 Research Aim and Questions

The study aims to contribute to the growing literature on geographies of firm finance by addressing the following research gaps: (i) better understand uneven geographies of capital sourcing by firms, i.e. the importance of space and place for processes of capital sourcing and the impact of different sources of capital on uneven economic geographies, (ii) highlight the intersection between the financial sphere (including different types of capital providers) and the governance of small, medium-sized and large firms and (iii) contribute empirical work on regions other than the comparatively better explored economies of the US and the UK. These gaps are addressed by empirically studying a group of car component manufacturers in Eastern Germany and Hungary, asking the following research questions:

- What are the main sources of capital used by these firms and which structural patterns can be observed?
- How can these patterns be explained by geographical factors concerning both firms and capital providers, as well as their respective institutional context?
- What is the potential impact on the firms' governance and on local and regional development more broadly?

These research questions guide the empirical analysis based on the conceptual framework developed in Chapter 2. The empirical analysis is conducted using concepts taken from this theoretical framework (such as, for example, strategic coupling or industrial upgrading), so that findings relate to and interrogate these frameworks. Existing theory is used to guide the empirical research and at the same time, empirical findings are used to interrogate existing theory (cf. e.g. Hall 2012). By looking at empirical evidence from firms in Central Europe, it aims to understand what firm finance means in regional contexts, in line with the call made by, e.g., Lee *et al.* (2009).

The methodological approach retained to answer the research questions as well as its rationale and justification is presented in detail in Chapter 3. In short, it is based on a mixed methods approach combining (i) the analysis of quantitative data from publicly available sources with (ii) the analysis of qualitative data from secondary sources. The main contribution and novelty of this methodological approach consists in the utilisation of an original and unique dataset of legal, economic and financial firm-level data collected from publicly available annual statements for a sample of about 320 small, medium-sized and large firms split among the two regions, allowing to look inside the ‘black-box’ and explore how firms are actually financed rather than making assumptions in this respect and just taking the presence of the capital for granted (Pollard 2003). By conducting this contextualised comparative analysis of firms of various types and sizes integrated in global production networks within two different post-socialist regions in Central Europe, the study illustrates how sourcing of capital is not a homogeneous spatially neutral process, but rather one that unfolds differently in different geographical and institutional contexts.

1.3 Structure of the Study

After this Chapter 1 presenting the point of departure and research context of the study as well as its aims and methodological approach, the rest of this study is structured in six further chapters. The literature review in Chapter 2 provides a detailed review of key aspects of the existing body of theoretical and empirical research in the fields of variegated capitalism, global production networks and geographies of firm finance. It identifies gaps in the existing literature and develops a conceptual framework which leads to the formulation of the three research questions. Chapter 3 then presents the methodology used to answer the research questions, consisting in a mixed-methods approach combining quantitative analysis of data

collected from publicly available sources with qualitative data from secondary sources. Chapter 4 sets out the empirical context describing the car component manufacturing industry in Hungary and Eastern Germany and the characteristics of the sample of around 160 Hungarian and 160 Eastern German car component manufacturers analysed in this study, with a focus on their location, size and ownership. It further provides an overview of the specific institutional infrastructures of capital provision in these two regions as well as of the evolving modes of capital provision for firms that are integrated, in particular through ownership, into global networks of production.

Empirical findings are presented in the next two chapters. Chapter 5 discusses the variegated patterns of capital sourcing evidenced by the analysis of quantitative data, put into perspective with the firms' location, size and ownership. It empirically evidences geographical variegation in the capital sourcing patterns of the firms analysed and provides empirical evidence of variegation at regional levels. It further highlights the important financial dimensions of global production networks by showing how firms owned by other firms within a global production network are financed in a way fundamentally different from those that are not. Chapter 6 interrogates potential reasons for and implications of the patterns observed by discussing how institutional infrastructures of capital provision may help explain why certain types of firms tend to use certain sources of capital more than others, arguing that financing practices (i) are not uniform but variegated, depending on historical, socio-institutional and political/regulatory contexts of regions in which firms operate, and on the firms' agency also shaping this context and (ii) are shaped by the firms' integration and relative position within networks of firms, shareholders, financial institutions and capital market investors. It further explores what implications this may have on the firms' governance internally and on local and regional development outcomes more generally, assessed through the lens of strategic coupling and industrial upgrading.

Chapter 7 recaps the research undertaken to highlight its key empirical findings and, derived therefrom, the main theoretical and conceptual contributions the study makes to the existing literatures in the area analysed. It concludes by highlighting potential routes for further research based on the limitations of the study as they appeared during the research process.

Chapter 2 Conceptualising Variegated Firm Finance and Global Production Networks

This chapter reviews relevant existing academic literature in economic geography and other cognate social sciences, with contributions and current debates related to understanding financing patterns of firms operating in post-socialist regions as part of global production networks. Three distinct but connected areas of research are reviewed, starting at a macro level before narrowing down to the firm level: first variegated capitalism in post-socialist contexts, then finance in global production networks and, finally, geographies of firm finance. The review does not attempt to provide an extensive or detailed overview of these areas, both because it would exceed the scope of this study and because extensive reviews are already available elsewhere for variegated capitalism (e.g. Peck and Theodore 2007; Crouch *et al.* 2009; Dixon 2011), for global production networks (e.g. Henderson *et al.* 2002; Coe *et al.* 2008; Coe 2015) and for geographies of firm finance (e.g. Pollard 2003; Lee *et al.* 2009; Hall 2013). The purpose is rather to briefly present the context, scope and connections between the areas to elaborate an integrated conceptual framework and identify research gaps addressed by the empirical part of this study.

The chapter is organised in three sections. The first section (2.1) assesses how the heterogeneity of capitalism shapes patterns of firm finance differently across regions and leads to a differentiated, context-specific and localised predominance of certain capital sources over others. To this effect, it first presents the conceptual frameworks of varieties of capitalism and variegated capitalism and then considers how such variegation may be conceptualised at the regional level in complement to the national level. This prepares the terrain to explore how institutional infrastructures of capital provision in Hungary and Eastern Germany can be analysed within the conceptual framework of variegated capitalism in the empirical part of this thesis. The second section (2.2) introduces the concept of trans-regional networks as a complementary dimension of relevance for analysing firm finance. It first presents the theory of global production networks and the related frameworks of global commodity chains and global value chains. The section then discusses some of the specificities of global production networks in post-socialist regions and how the embeddedness of a firm in both regional variegations of capitalism and global production networks shapes the types

of capital to which it tends to have access. It finally discusses the integration of finance in global production networks, mainly to demonstrate that this dimension has been largely absent from the literature on global production networks so far. The third section (2.3) discusses geographies of firm finance, first by reviewing how firm finance has been conceptualised in economic geography generally so far and then shifting the focus to capital sources and how these have been discussed in previous geographically-oriented research to date. It is on this basis that the provision of capital to firms in Hungary and Eastern Germany is analysed from a geographical perspective in the empirical part of this thesis based on the conceptual framework of regional variegations of capitalism and finance in global production networks. The chapter's conclusion summarises the research gaps identified and formulates the research questions.

CONCEPTUALISING VARIEGATED FIRM FINANCE AND GLOBAL PRODUCTION NETWORKS

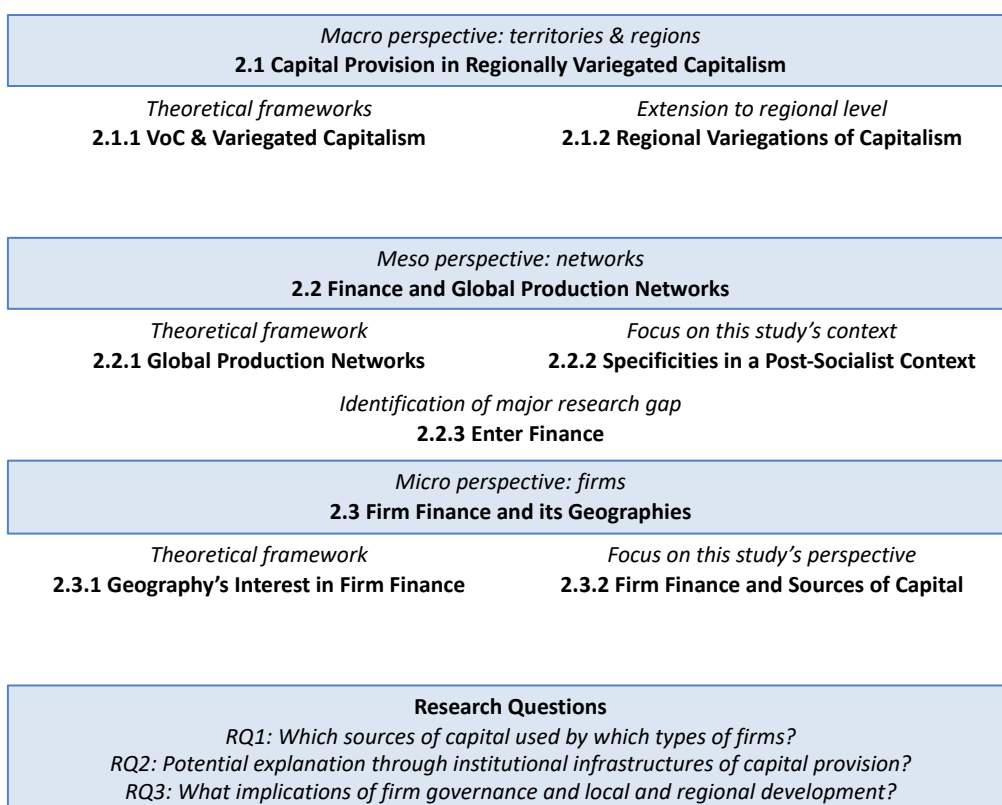


Figure 1 Structure of literature review

Source: author, following a scheme proposed by Thrower (2018)

2.1 Capital Provision in Regionally Variegated Capitalism

The heterogeneity of capitalism shapes patterns of firm finance differently across regions and leads to a differentiated, context-specific and localised predominance of certain financing practices over others. This section first (2.1.1) presents the theory of existing conceptual frameworks of varieties of capitalism, of a rather binary nature, and variegated capitalism, which insists more on the complexity of real world situations. It then (2.1.2) considers how such variegation may be conceptualised at the regional level in complement to the national level for a more nuanced and fine-grained analysis.

2.1.1 Varieties of Capitalism and Variegated Capitalism: Theoretical Frameworks

Following mainly Peck and Theodore (2007), this section reviews the general theoretical framework of the (relatively binary) varieties of capitalism approach with its contributions and limitations, as well as the (more nuanced) variegated capitalism approach. This provides a conceptual framework for understanding how financial processes are shaped, “mediated and contested by specific and particular configurations of spatialised social relations, social agency and socio-institutional contexts over time, across space and in place” (Pike 2006: 202). More specifically, it provides the conceptual tools for the analysis of capital sources of car component manufacturers in the empirical section of this study.

Varieties of Capitalism: a Binary Approach

The collapse of the state-socialist regimes in Central and Eastern Europe in 1989 and the resulting apparent universality of capitalism spawned a number of publications claiming the ‘end of history’ (Fukuyama 1992) and the advent of a ‘borderless world’ (Ōmae 1990). This orthodox globalization thesis implied there was ‘one best way’, one universal economic model that would eventually prevail, that this model was US-American neoliberal capitalism and that there were no viable alternatives to it (Peck and Theodore 2007). Very quickly, however, critical voices contested the idea of a ‘one best way’, drawing attention to the lack of uniformity within capitalism and to existence of varieties within this regime. One of the first to do so was Albert (1991), claiming that the end of state-socialism would not lead to a unipolar market order dominated by the USA, but rather to a struggle between two main existing forms of capitalism: the socially coordinated ‘Rhinish’ model prevalent in much of Continental Europe and Japan on the one hand, and the neoliberal model represented by the

US in the post-Reagan era and the United Kingdom of the Thatcher years. As Peck and Theodore (2007) point out, Albert's analysis implies a judgment, opposing a normatively superior Rhinish model emphasising collective success, consensus and long-term concerns to a less sustainable more aggressive neoliberal American model based on individual success and short-term financial gain, willing to "sacrifice the future for the present" (Albert 1993: 259). Further publications by other researchers from various disciplines followed, also contesting the 'one world, one best way' claim of orthodox globalisation thesis by proposing a model of a bipolar global economy, comprising two competing capitalisms. By the late 1990s, these publications formed a rich, diverse and multidisciplinary literature referred to as the 'varieties of capitalism' (VoC) school with two main strands: one focusing on the firm and the national scale (cf. in particular Hall and Soskice 2001b) and another with a more multi-scalar and regulationist approach (e.g. Hollingsworth and Boyer 1997a; Boyer 2005).

In line with Albert (1991), Soskice (1991) establishes a conceptual distinction between coordinated market economies (CME) with a 'patient capital' approach and shareholder-driven 'liberal market economies' (LME). While Germany is considered as the archetypical example of a CME, the US are considered to represent the purest example of an LME. For Soskice (1991), CMEs and LMEs represent two different forms of institutional frameworks that "incentivise and sustain different patterns of (economic) behavior" (Peck and Theodore 2007: 736) and different forms of responses to similar external stimuli. Unlike neoliberal theory, Soskice does not consider CMEs to be suboptimal per se and inferior to LMEs – on the contrary: like much of the following varieties of capitalism literature, Soskice expresses normative preference for CMEs (Peck and Theodore 2007). The VoC school focuses on the way strategic behaviour of firms and other economic actors is embedded in their institutional environments in complex ways (Hall and Soskice 2001b) and how this embeddedness determines the organisation and regulation of production in a given context. This literature is based on a "relational conception of the firm as a social institution" (Peck and Theodore 2007: 738) that strongly depends on its institutional and cultural environment and is "embedded in 'production regimes' or 'social systems of production'" (Peck and Theodore 2007: 738), focusing on the relationship between leading industrial sectors and their associated governance regimes. In other words, as Peck and Theodore (2007) recall, the VoC school recognises that economic structures and relations are institutionally mediated and socially

embedded. Firms are assumed to behave in accordance with the principles that correspond to the specific institutional framework of their national economy (Crouch *et al.* 2009).

A distinctive feature of the main strand of the VoC school as represented in particular by Soskice and colleagues is its firmly national perspective: institutions and social relations that mediate economic structures and firm behaviour are considered as *nationally* anchored, governed by *national* legislation (Peck and Theodore 2007). It therefore has a “tendency to reify national economic boundaries” (Peck and Theodore 2007: 738), a conception increasingly challenged with the growing attention given to processes set on both the supra-national and the infra-national (local and regional) scales. Such challenges of the national-centric perspectives come even from within the VoC school (Schmitter 1997), from a strand represented by Hollingsworth and Boyer (e.g. 1997a) affiliated to regulation theory. It explores mechanisms of economic coordination and their connection with social systems of production at different scales and in different contexts, and is most concerned with the coherence of social systems of productions, defined as

“the way that the following institutions or structures of a country or region are integrated into a social configuration. The industrial relations system; the system of training workers and managers; the internal structure of corporate firms; the structured relationships among firms in the same industry [...], firms relationship with their suppliers and customers; the *financial markets of a society*; the conceptions of fairness and justice held by capital and labour; the structure of the state and its policies; and a society’s idiosyncratic customs and traditions as well as norms, moral principles, rules, laws and recipes for action.” (Hollingsworth and Boyer 1997b: 2; quoted by Peck and Theodore 2007), emphasis added by the author

In contrast to this multi-scalar regulationist perspective, Hall and Soskice (2001b) propose a “firm-centric analysis of institutional variety” and an analysis of “national institutions as reciprocally adjusting shapers of economic action at the firm level” (Peck and Theodore 2007: 743) and base their conceptual framework on the firm as a relational entity that, to achieve profitable production over time, needs to interact rationally with the institutions that govern its activity. Without denying the importance of sub-national institutions, Hall and Soskice (2001b) consider that the determining factor is the role of institutions at the national level in

five spheres: industrial relations (including the coordination of wages and working conditions), vocational training and education, corporate governance (including access to capital markets and firm-investor relations), inter-firm relations (including relations with clients, suppliers and competitors), and employees (including social organisation of workplace and competence management) (Peck and Theodore 2007). On this basis, Hall and Soskice (2001a: 8) compare national political economies “by way of reference to the way in which firms resolve the coordination problems they face in these five spheres” and obtain the ideal-typical opposing situations of the LME (with hierarchical and competitive market arrangements as the main source of coordination) on the one end, and the CME (with reliance on networks, collaborative relations and other non-market modes of coordination) on the other end. Hall and Soskice (2001a) consider the ideal-types of the LME and the CME as the two extremes of a linear spectrum “along which many nations can be arrayed” (Hall and Soskice 2001a: 8). The analytical focus of this literature, however, is on comparative case studies of the ideal-types at the extremes of the spectrum (or on the countries considered to represent them best) rather than on intermediate situations which the authors consider as having a tendency of evolving towards one of the extremes.

Arguing that complementary and efficient institutional relations exist in both LMEs and CMEs, Hall and Soskice (2001b) consider that none of the two ideal-types is a priori superior to the other and that both can sustain economic performance at a high level – albeit with varying results in terms of distribution and LMEs evidencing higher inequality than CMEs (Peck and Theodore 2007). VoC literature generally sees a complementarity between institutions, certain combinations of which have a reinforcing effect on each other, while others are incompatible and dysfunctional if combined (Crouch *et al.* 2009). One feature this national-centred literature shares with the multi-scalar regulationist perspective is the view that economic regimes tend to evolve in path-dependent and not necessarily convergent ways: inherited institutional differences act as obstacles to convergence, hence diverging patterns of development are possible even in the long-run (Peck and Theodore 2007). Similarly, for Boyer (2000: 275), “various configurations of capitalism can coexist on a long-term basis, without converging towards one accepted form”, and most of the major industrialised countries correspond to one of four typical forms of capitalism: market-led (prime example: US), meso-corporatist (Japan), state-led (France) and social democratic marked by negotiated

compromise between representatives of labour, capital and public authorities (Scandinavia, Austria and, to a lesser degree, Germany).

The two main strands of the varieties of capitalism approach as reviewed above have clearly made a strong contribution to the understanding of capitalism, in particular by highlighting that capitalism is not a uniform and monolithic phenomenon, but one that is context-specific and that takes different forms depending on the geographical context it is situated in. Since the early 1990s, various strands of the varieties of capitalism school have produced many publications often contributing, as Peck and Theodore (2007) note, to long-standing concerns of political economy: causes of economic growth and crisis and relationships between economic development and social equity. By evidencing that institutional and social context matter and that political-economic change is path-dependent, this literature contributed to contest the 'one best way' discourse of orthodox globalisation theory (Peck and Theodore 2007). Any geographically interested analysis of capitalism, including the one proposed by this thesis, can therefore benefit from the key contributions of the varieties of capitalism literature in trying to distil how the specificities of a geographical context may shape the way capitalism unfolds in particular regions and for particular firms therein.

However, it is also necessary to highlight certain limitations of the VoC literature which limit its direct relevance and applicability for an analysis empirically centred on firms operating in two post-socialist regions and integrated in trans-regional networks of production as is the case of this study. Peck and Theodore (2007: 750) for example² reject the "excessively narrow, firm-centric, and rational-action model" of analysis of the main VoC strand represented by Hall and Soskice: this indeed leaves little room for the consideration of networks and non-firm actors as necessary in the empirical analysis conducted by this thesis, focusing on the provision of capital by non-firm actors to firms that are integrated in trans-regional networks of production. Peck and Theodore (2007: 750) further criticise the "exaggerated normative and explanatory weight" given to the superstructural phenomena of institutional logics and rationalities, the "false impressions of coherence and complementarity" given by the holistic treatment of institutional ensembles: this leaves little room for a more nuanced analysis of the "fuzzy reality" of how firms and institutions interact in regions that correspond neither to

² Cf. Hancké *et al.* (2007) for another critique/development of the varieties of capitalism approach.

an LME nor to a CME, as is the case of Hungary and Eastern Germany. Peck and Theodore (2007: 750) finally reject the “methodological nationalism” of the VoC literature where the “coherence of national regulatory configurations is presumed rather than demonstrated”, as well as its privileging of the description of two ideal-typical models and situating all real economies on a linear continuum between these two ideal-types. The fuzzy reality of most real-world economies (including in particular the post-socialist economies analysed within the scope of this thesis) is that they fit neither into the description of an LME, nor into that of a CME, or into any intermediary position between these two ideal types. In addition, the “methodological nationalism” of this VoC research leaves little room for the analysis of infra-national differences in the organisation of capitalism – an analytical focus that can yield relevant insights as the empirical part of this study aims to demonstrate.

Concerning the ideal-types themselves, Peck and Theodore (2007: 751) observe that while “the CME model represents a stylized description of the actually existing economies of countries like Germany, Japan, and the Netherlands, the LME model is a curious hybrid of neoclassical economic theory and a correspondingly idealised form of American capitalism”. Peck and Theodore (2007: 751) see CME as a “chaotic conglomeration” of heterogeneous real economies and LME as a “pseudo-concrete rendering of the free market”, none of which adequately describes any real-world situation – and neither of which is particularly relevant for post-socialist economies like Hungary and Eastern Germany. Echoing Peck and Theodore (2007: 752), one can consider that the conceptual ingredients of each of the two ideal-types “must be (problematically) combined in any actually existing capitalist [...] system”. Rather than in terms of quantitative variation of more market or less market, real world economies should be analysed in terms of “qualitative variegation” of the various aspects constituting both ideal-types (Peck and Theodore 2007: 752). The CME-LME dichotomy is particularly inadequate to analyse the post-socialist economies of Central Europe, as these are too varied to be classified in the VoC categories (Lane 2008). Even the two-dimensional continuum between CME-LME lacks the adequate space to situate post-socialist economies because it does not account for further factors (such as the specific post-socialist context) that need to be taken into account. Crouch *et al.* (2009) note that VoC theory tends to reduce the actual empirical variety of institutional frameworks, drawing up ‘holistic images’ through which national economies appear to be extremely coherent. Peck and Theodore (2007) also contest

the tendency of the main strand of the VoC school to consider neoliberalism as a reified, fundamental and exclusive component of LMEs acting as an external threat to CMEs, considering that such a view misrepresents the actual nature of change in all real-world economies. Their argument implies that neoliberalisation is not a uniform process that is either rejected or adopted but rather a multi-form phenomenon that is mediated and contested in various ways. Finally, Peck and Theodore (2007: 758) consider the VoC school's "monoscalarity [at the national scale] as a serious obstacle" and call for an increased consideration of "'models within models' at the local scale and network-style 'models between models' in translocal space". This is echoed by Lane's critique of the VoC literature's focus on the national, rather than the global context and its lack of consideration of the impact that the action of global firms can have on national institutional arrangements (Lane 2008). For Lane (2008: 234), it is important to explore how 'global firms either reinforce and even export national institutionalised practices or corrode national patterns of firms' co-ordination with other actors'.

The above critique of VoC theory found in the literature is certainly relevant for the perspective taken by this study, in that this literature appears to provide insufficient tools to analyse the complexity of the real-world situations represented by the capital provision to firms operating in certain post-socialist regions and at the same time integrated in networks of global production. Recognising both the contributions of the VoC theory and its limitations for the purpose of this thesis, the next section therefore examines a potential complementary or alternative framework to account for the complexity of how capitalism is differentiated across geographies: the more recent 'variegated capitalism' approach proposed by Peck and Theodore (2007), which addresses the critique of the VoC literatures set out above. The concept of "variegation" (like others such as financialisation, embeddedness etc.) is widely used in different contexts and sometimes with different meanings, leading to a risk of over-use and fuzziness of the concept: it is therefore necessary to clarify and justify the sense in which it is used here to ensure its use is justified in this context. For the purpose of this study, and in accordance with its utilisation by the literature on variegated capitalism below, 'variegation' (of capitalism and of capital provision) allows to account for the complex, multi-shaped reality of a phenomenon which takes different forms and nuances depending on each specific context in which it materialises. It is helpful in contexts where the reality of a

phenomenon defies any attempt to categorise into a typology that would list clearly distinct varieties of a phenomenon to one of which any real world situation could be attributed. As the empirical section of this study will show, the pattern observed with regards to the sourcing of capital by car component manufacturers in Hungary and Eastern Germany, the sources of capital they use depending on their size, location and their ownership defies any categorisation into a hypothetical 'Hungarian model' and a hypothetical 'Eastern German model'. Even though certain trends do emerge (and justify an analysis from a geographical perspective), the reality appears too complex and differentiated for a categorisation into 'varieties of capitalism' to be relevant. By contrast, the concept of 'variegation' while recognising the existence of a difference between situations in different geographical contexts, at the same time allows for a gradual shift and 'grey zones' between the situations, better reflecting the reality of capital provision which depends on a multitude of factors, which can all be combined in different ways and to different degrees in a given situation, leading to an aggregate picture (of capital provision for certain firms in post-socialist regions) in which a multi-faceted 'variegation' of capitalism appears to better describe reality than a hypothetical juxtaposition of 'varieties'.

Variegated Capitalism

In response to the VoC school's static vision of a bipolar global economy and to its limitations identified in the previous section, Peck and Theodore (2007) propose a more nuanced 'variegated capitalism' approach building on the achievements of the VoC school while at the same time enhancing them by contributions that economic geography can make to answer the question of Boyer (2005) 'how and why do capitalisms differ' (quoted by Peck and Theodore 2007).³ Peck and Theodore (2007) summarise their proposal, in comparison to the VoC approach, as follows:

³ Jessop (2014a) also develops a concept of variegated capitalism as a critique of the VoC literature, although seemingly independently from Peck and Theodore (2007) (who are not referenced therein) and more from the perspective of a Marxist critique of political economy.

	Varieties of capitalism	Variegated capitalism
Problematic	Understanding institutional variability among advanced capitalist economies	Explicating processes and forms of uneven development within, and beyond, late capitalism
Case study rationale	Comparative cases positioned relative to the privileged axis of LME ↔ CME	Individual cases selected according to their theoretically generative properties
Method	Tendency for parsimonious institutional political economy with strong rational-choice component; ideal-typical theorising; reliance on secondary sources and game-theoretic procedures	Relatively ecumenical institutional/ cultural political economy, qualitative case studies; post-positivist theorising; inclination to urban and regional analysis; rejection of methodological individualism
Privileged agents	Firms, business associations, and policy entrepreneurs	Agents afforded relatively weak analytical status as bearers of prevailing modes of restructuring or nascent forms of resistance; embedded in constitutive network relations
Analytical gaze	Privileging of national institutional archetypes and relatively bounded national economies; emphasis on lead firms, dominant industries, and formal institutions	Emphasis on decisive moments of economic transformation & institutional restructuring; real-time analysis of regulatory projects and experiments in organisation of production; multi-scalarity
Temporal dynamics	Equilibrium within selected institutional fields (absent exogenous shocks); emphasis on relative stability, incremental change reinforcing institutional settlements, punctuated by occasional disruptions	Dynamic analysis, concern with endemic restructuring; presumption of disequilibrium and persistent crisis-proneness
Scalar dynamics	Methodological nationalism, presumption of high degrees of endogenous institutional coherence and a national-economic space; supermodularity registered at the national scale	Social construction & relativisation of scale; potential supermodularity and conjunctural effects at multiple special scales (e.g. 'locality effects'); concern with multi-scalarity (eg. 'glocal hybrids and cross-scalar networks')
Historical trajectory	Dual convergence or 'twin peaks'; static-comparative analysis of archetypal development models	Combined & uneven development; embrace of contingency; rejection of the necessity of either convergence or divergence; concern with path-shaping and path-altering change
Typical levels of abstraction	Micro-analytical accounts of firm behaviour embedded within meso-level institutional architectures	Meso-analytic interpretation of relatively concrete institutional conjunctures within unevenly developed (capitalist) system
Normative project	Defense of European- and Japanese-style social democracy and corporatist regimes; concern to explicate non-neoliberal modes of development	Revealing internal contradictions of neoliberal globalization; identification and promotion of alternative (and/or progressive) forms of local development.

Figure 2 Varieties of capitalism vs. variegated capitalism

Source: Peck and Theodore (2007: 763)

Many aspects of this 'variegated capitalism' approach, which Peck and Theodore consider as a "new form of spatialised political economy" (Peck and Theodore 2007: 765) constitute a

mutual enhancement of the varieties of capitalism school and economic geography for a “nuanced analysis of the temporality and spatiality of capitalist development” and of “capitalist variegation, understood as a [...] ‘relational’ conception of variety” (Peck and Theodore 2007: 760). This approach aims to involve “holding together questions relating to the uneven development of capitalism and co-constitutive/co-evolving forms of institutional restructuring, for instance at the interface of neoliberalisation and financialisation” (Peck and Theodore 2007: 764). Dixon (2011) takes the concept of variegated capitalism further by calling for a stronger engagement of economic geographers with the variegated capitalism literature and proposing to enhance it by studying it through the lens of financial geographies of the firm.

Peck and Theodore (2007: 764-765) consider that more rigorously comparative research in this field would help provide empirical evidence that “neoliberalism is not monolithic or universal in form, but exists (only) as a variegated hybrid [that] is, at the same time, an international phenomenon, a facet of national polities, and a networked, ‘local’ construction [...] deeply entwined with the dynamics of financialisation [and] associated with qualitatively different forms of combined and uneven development”. Different institutional infrastructures of capital provision are likely to lead to different outcomes, as reflected by the idea that “financialisation is generally seen as more advanced in ‘neoliberal’ economies such as the US and the UK” (Coe *et al.* 2013: 12) because the capital market is more developed there and that “trends of financialisation vary according to the historical, institutional and political relations in each country, resulting in uneven development of financialisation” (Lapavistas and Powell 2013: 360). The research done to date based on the framework of variegated capitalism mostly focused on major European economies such as the UK, France or (Western) Germany (Macartney 2010; Jessop 2014b), with only rare exceptions also covering post socialist regions in Central and Eastern Europe (cf. e.g. Lendvai and Stubbs 2015; Brown and Spencer 2017).

Based on the above, both the varieties of capitalism and the variegated capitalism literature would appear to provide useful analytical frameworks for the analysis of capital provision to car component manufacturers operating in Hungary and Eastern Germany. However, preference in this study is given to the variegated capitalism framework as it, echoing the critique of the VoC approach and case of variegated capitalism by Peck and Theodore (2007), better allows to take into account the different ways in which various types of third party

capital providers (in particular local and international industrial equity investors, banks and capital markets) interact with the various types of firms depending on context variables such as the firms' size, location and ownership leading to different ways in which these firms source the capital used in their production process.

2.1.2 Regional Variations of Capitalism

The idea of coherent national varieties of capitalism is not only challenged by the variegated capitalism approach presented in the previous section. It is also complemented, with a different analytical focus, by research evidencing the existence of regional and sectoral varieties of capitalism (Crouch *et al.* 2009; Ebner 2015). The analysis of Crouch *et al.* (2009) starts with the observation that, in every national economy, certain firms, regions or economic sectors prosper in a way seemingly incompatible with the global model. Such apparent contradictions can be due, according to Crouch *et al.* (2009), to several (potentially cumulative) factors:

- A firm's activity can be embedded and supported by local (and transnational) institutions/infrastructure differing from and contradicting the national framework;
- Such a contrast may lead to 'creative incoherences' by leading firms to adopt innovative behaviour;
- A firm's activity can be less dependent on or influenced by national institutions and infrastructure than classical VoC theory would suggest.

In other words, the national institutional framework is only part of what shapes a firm's activity: regional and sectoral as well as transnational institutions (including patterns of corporate finance and corporate governance, industrial relations, vocational training as well as research and development) need to be considered as well and influence firm behaviour in a way that can be different from the general national framework (Crouch *et al.* 2009). Regional and sectoral institutions can be loosely coupled with the national institutional framework, and this can allow firms to bypass constraints of national institutions leading to the creation and subsistence of autonomous regional or sectoral subsystems (Crouch *et al.* 2009). This then enables firms (especially larger ones with access to transnational resources and firms that are owned by larger foreign firms) to establish distinct governance structures that can contrast with the typical structures seen from a national point of view (Crouch *et al.* 2009). Crouch *et*

al. (2009) consider that the variegation or challenging of national institutional frameworks by distinct regional, sectoral and transnational institutions is particularly evident in countries where these national frameworks are weak, such as Central and Eastern Europe. In summary, Crouch *et al.* (2009: 672) consider that 'companies act rationally in response to sector-specific challenges, being partly bound by the existing institutional framework that they encounter, but partly acting to alter it'. Depending on whether the existing national framework is beneficial for the firms' actions or not, they will aim to either preserve it or modify it by developing their own regional and sectoral structures drawing on local and/or on transnational resources:

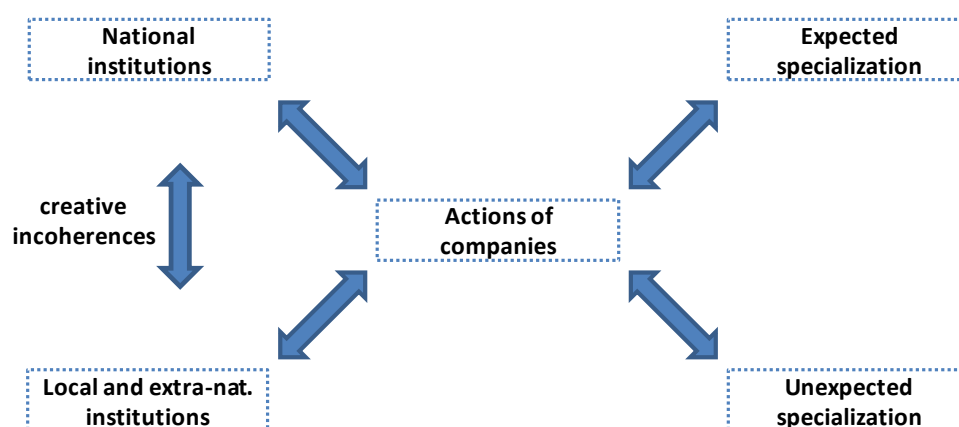


Figure 3 Regional and sectoral varieties of capitalism

Source: Crouch et al. (2009)

Examples of empirical research performed to date with a focus on regional variegations of capitalism include for example Colombo and Regini (2016) on Italy or Zhang and Peck (2016) on China. As for research on variegated capitalism more generally, little research in this area has been dedicated to post-socialist regions so far. Section 4.3 in the context chapter therefore discusses how institutional infrastructures of capital provision in Hungary and Eastern Germany can be analysed in this context. One of the main questions from the perspective of capital provision analysed in this study is whether the relative location of firms with respect to financial centres, i.e. the question of centre vs. periphery, influences the firms capacity (and/or, potentially, willingness) to source capital from capital providers such as banks, private equity investors or capital markets.

Overall among the various strands of literature analysed above with regards of how capitalism unfolds differently in different geographical contexts, the context-sensitive variegated

capitalism approach combined with the sub-national focus of literature on regional variegations of capitalism provide a useful conceptual framework for the empirical analysis proposed by this study. They allow for an analysis of how the provision of capital by the different types of capital providers (in particular individual and industrial equity, banks and capital markets) unfolds in differentiated manners depending on the size, location and ownership of the firms analysed.

2.2 Finance and Global Production Networks

This second section of the literature review introduces the concept of trans-regional networks of firms as a dimension complementary to the national and regional variegations of capitalism discussed earlier. It first provides a brief overview of the theory of global production networks and related frameworks such as global commodity chains and global value chains (2.2.1). It then has a closer look at the specificities of global production networks in the particular context of post-socialist economies in Central and Eastern Europe (2.2.2) and finally introduces the idea of finance in global production networks, mainly to show that this dimension has been largely absent from the literature so far even though the gap has been widely recognised (2.2.3).

The combination of the GPN framework with certain aspects of GCC/GVC literature is necessary for the purpose of the empirical analysis proposed by this study given that an analysis of capital provision to certain types of firms integrated into global networks of production both requires an analytical framework taking account of geographically-situated non-firm actors (as possible in the GPN framework) and one that allows to analyse the effects capital provision has on a firm, through the way it impacts the firm's governance and capacity for industrial upgrading (as these two concepts are more specifically theorised in GCC/GVC literature).

2.2.1 Global Production Networks: Theoretical Framework

There is a large and diverse academic literature on the organisation and functioning of multi-territorial networks of production within and between firms in various economic sectors, analysing how global industries are organised and governed. Much of this literature is affiliated to one of the related but distinct frameworks of global commodity chains (GCC)

(Gereffi and Korzeniewicz 1994), global value chains (GVC) (Gereffi *et al.* 2005) and global production networks (GPN) (Henderson *et al.* 2002) which can be summarised as follows:

	Global Commodity Chains	Global Value Chains	Global Production Networks
Theoretical foundation	World-systems theory; Organisational sociology	Global commodity chains; International business literature	Management studies (Porter); New Economic Sociology; Actor-Network Theory; GCC/GVC Analysis
Intellectual influences	MNC literature Comparative development literature	International business / industrial organisation Trade economics Global/international production networks/systems	Political economy of development
Object of inquiry	Inter-firm networks in global industries	Sectoral logics of global industries	Networks of firm and non-firms actors in global industries
Orienting concepts	Industry structures Governance (PDCC/BDCC distinction) Organisational learning/ industrial upgrading	Value-added chains Governance models (modular, relational, captive) Transaction costs Industrial upgrading and rents	Value (and its creation, enhancement and capture) Power (corporate, institutional, collective) Embeddedness (territorial, networked, societal) Strategic coupling, de-coupling and re-coupling
Analytical level	Micro (individual firm) and meso (sector)	Micro (individual firm) and meso (sector)	Micro (individual firm and non-firm actors) and meso (sector)
Policy orientation	High	Very high	So far low
Non-firm actors	Low relevance	Low relevance	High relevance, broad range of actors
Institutional context	Low relevance	Low relevance	High relevance
Geographic dimension	Low relevance	Low relevance	High relevance, multi-scalar and multiple spatialities

Figure 4 Overview of the GCC, GVC and GPN frameworks

Source: Bair (2005), Bair (2008a) and author

The GPN framework is particularly useful for this study because it allows consideration of multiple geographic spatialities and the multi-scalar nature (i.e. global, national, regional and local) of production systems as well as the importance of institutional, regulatory and socio-political context and the large range of relevant (including non-firm) actors to a far larger extent than the GCC and GVC frameworks (Henderson *et al.* 2002; Bair 2008a). However, certain aspects of GCC and GVC analysis (such as concepts of governance and industrial upgrading) can usefully complement the GPN framework. The existing literature using the GPN and GVC frameworks also includes a rich body of empirical work on the car component manufacturing industry (e.g. Humphrey and Memedovic 2003), including in Central and Eastern Europe (cf. e.g. Pavlínek and Ženka 2011; Pavlínek and Žížalová 2016). In what follows, the GPN framework is presented in more detail, before those aspects of GCC and GVC analysis used to complement it are developed and the interrelation with local and regional development is discussed.

Global Production Networks: Theoretical Framework

The global production networks perspective (for its theoretical foundations and further developments, cf. Henderson *et al.* 2002; Coe *et al.* 2004; Coe *et al.* 2008; Coe and Hess 2011; Coe 2012; MacKinnon 2012; Coe 2015; Yeung and Coe 2015; Dörry 2016) is a relational, network-based and geographic approach to the study of the global space-economy (Amin 2002; Hess and Yeung 2006). Global production networks are defined as “discontinuously territorial” (Henderson *et al.* 2002: 446) and as “the globally organised nexus of interconnected functions and operations by firms and non-firm institutions through which goods and services are produced and distributed” (Coe *et al.* 2004: 471). Global production networks integrate firms into “structures which blur traditional organisational boundaries through the development of diverse forms of equity and non-firm equity relationships” (Coe *et al.* 2004: 471). Complementary to the GCC/GVC literature, GPN research has a stronger geographical focus, recognising that the precise nature and articulation of production networks is deeply influenced by the concrete socio-political context in which they are embedded (Coe *et al.* 2004). This links the approach to relational economic geography, which “is concerned primarily with the ways in which socio-spatial relations of actors are intertwined with broader structures and processes of economic change at various geographic scales” (Yeung 2005). GPN research also explores the “social and political processes by which industry

standards are created”, including efforts of both governments and corporates to influence the setting of such standards (Bair 2008a: 356). Some of the research on the automobile industry performed to date has been explicitly based on the GPN perspective (e.g. Liu and Dicken 2006).

After the initial generation of GPN literature in the early 2000s (“GPN 1.0”), more recent contributions (cf. e.g. Coe 2015; Yeung and Coe 2015) sought to emphasise the dynamics of how GPNs are constituted over the more static approach of the original literature, which focused on governance typologies and analytical categories such as power and embeddedness (Yeung and Coe 2015). This new generation of GPN research (“GPN 2.0”) finally introduces some form of attention for finance through the consideration of financial discipline (including access to finance and the power exerted by capital providers) as one of the three dynamic forces shaping actor-specific strategies in the formation and evolution of global production networks (Yeung and Coe 2015). This new generation of “GPN 2.0 research” aims to surmount some of the limitations of earlier GPN research by taking into account a broader range of factors and the dynamics that shape the constitution and evolution of global production networks – making it even more suitable as a conceptual framework for an empirical analysis aiming to better understand the dynamics of capital provision to firms that are integrated (in particular through ownership) into global networks of production.

GPN research focuses on a broad range of actors and on three conceptual categories (value, power and embeddedness) to analyse the organisation and functioning of global production networks (Henderson *et al.* 2002). “Encompass[ing] all relevant sets of actors and relationships” (Coe *et al.* 2008: 272), including both firm and non-firm actors, inter-firm relations, firm-state relations as well as relations with other stakeholders such as labour associations and civil society, GPN research proposes a more open and less linear perspective than the GCC/GVC approach (MacKinnon 2012). The framework involves both local actors in specific regions (labour, state) and non-local actors in global production networks (transnational corporations, financial capital), with differing degrees of territorial embeddedness (and ‘boundedness’ or mobility), “shaping how value and power are distributed in their relational interaction” (Coe *et al.* 2004: 471).

- **Focal firms:** similar to the lead firms in GCC/GVC research, the central actors of global production networks are large international focal firms, defined as “dominant firms

spearheading the global organisation of production networks through their corporate and market power” (Coe *et al.* 2004: 473).

- **Other firms:** including subsidiaries, suppliers (tier-one, tier-two, tier-three) etc., typically smaller and more locally embedded than the focal firms.
- **Governments:** national, regional/local and supra-national bodies such as the EU, the regulations and policies of which form the legal framework of the global production networks’ operations.
- **Further actors:** including labour unions, employers’ organisations, non-governmental organisations etc.

The GPN framework recognises that all types of actors have a certain degree of autonomy, power and agency (although to differing degrees, and with different strategies and priorities) in shaping the constitution, organisation and evolution of global production networks and hence the prospects of local and regional development in the territories involved. In the context of the empirical analysis of this thesis, the main actors to be considered, besides the firms themselves, are the various types of capital providers, including in particular individual and industrial shareholders/equity providers (whether local or foreign), banks as well as more ‘financialised’ types of capital providers such as private equity firms and the capital markets.

Value in GPN research is defined both in Marxian terms of surplus value and in more orthodox terms of economic rent (Henderson *et al.* 2002). In the latter sense, Coe *et al.* (2004) base their definition of value on Kaplinsky (1998), defining value as “various forms of economic rent” realised through market and non-market transactions and exchanges. Value in this sense is created through the labour process, technological or relational rents, organisational attributes, trade policy and branding. Some regions are better in creating and retaining some forms of rents rather than others and value takes different forms as it moves in a spatialised network of flows (Coe *et al.* 2004). GPN research thus explores how value is created (within the firms that form part of the global production network), enhanced (at the level of lead firms and/or local suppliers) and captured, i.e. who ultimately benefits from it (Henderson *et al.* 2002). In the context of the empirical analysis of this thesis, the creation, enhancement and capture of value can be analysed with regards to the distribution of profits to the firm’s various capital providers and/or their retention (in the form of retained earnings) and re-investment in the firm’s production process.

Power is considered by GPN research as the decisive element for capturing and enhancing value, and thus “for the prospects for development and prosperity” (Henderson *et al.* 2002: 450). Henderson *et al.* (2002) distinguish three types of power:

- **Corporate power**, exercised mainly by lead firms but also by smaller firms when given circumstances (including e.g. collective action of smaller firms) enable them to pursue their own strategies;
- **Institutional power**, exercised by (i) political institutions at national level, regional level (where relevant), and supra-national level (e.g. the EU) and (ii) private institutions such as the large credit rating agencies; and
- **Collective power**, exercised in particular by trade unions, employers’ associations, lobbying organisations and the civil society in general.

While earlier GPN research tends to consider power relations to be relatively balanced, enabling the different actors to engage in strategic negotiations, MacKinnon (2012: 231) stresses that relations between lead firms and local communities and their power relations with regional institutions are often unequal due to the higher spatial mobility of lead firms enabling them to engage in ‘regulatory arbitrage’. Such asymmetries however weaken when assets specific to the region and less interchangeable correspond to the lead firms strategic needs: in such cases, the bargaining power of regional institutions is comparatively high (Coe *et al.* 2004). In the context of the empirical analysis of this study, the question of power relationships between firms and their capital providers covers a range of issues such as the role capital providers (in particular but not limited to shareholders/equity providers) play in the governance (and hence the strategic decision making) of the firm, including with regards to the distribution and/or retention of profits. It also covers the power of potential capital providers (such as banks assessing whether or not to grant a loan) in imposing certain obligations (for example of transparency or reporting) onto the firm as a conditions for providing the capital requested.

Finally, the concept of embeddedness, based in particular on Granovetter (1985b), is used to assess the “social and spatial arrangements in which [GPN] firms are embedded[,] which influence their strategies” and can explain path-dependencies such as for example in post-socialist Central Europe (Henderson *et al.* 2002: 451). In economic geography, embeddedness is mostly conceived as firms being embedded in networks and institutional settings at the local

and regional levels (Hess 2004). While globalisation was sometimes described as a process of disembedding, it was soon clarified that there are also other forms of embeddedness, such as embeddedness in transnational ethnic networks and global production networks which complement the original concept of territorial embeddedness at the local and regional level (Hess 2004). Embeddedness is therefore now conceived as the ‘social relationships between both economic and non-economic actors (individuals as well as aggregate groups of individuals, i.e. organisations)’ and materialises in three major dimensions: societal embeddedness, network embeddedness (conceived as a ‘network of actors a person or organisation is involved in, i.e. the structure of relationships among a set of individuals and organisations regardless of their country of origin or local anchoring in particular places) and territorial embeddedness (considering ‘the extent to which an actor is ‘anchored’ in particular territories or places’) (Hess 2004). GPN research therefore distinguishes three forms of embeddedness:

- **Societal embeddedness**, regarding “how actors are positioned within wider institutional and regulatory frameworks” (MacKinnon 2012: 230);
- **Territorial embeddedness**, both in home regions of lead firms and in host regions, evidences how global production networks “absorb, and in some cases become constrained, by the economic activities and social dynamics that already exist in those places” but also how the implementation of lead firms “might generate a new local or regional framework of economic and social relations, involving existing firms as well as attracting new ones” (Henderson *et al.* 2002: 452);
- **Network embeddedness**, meaning the formal or informal connections between network members, characterised by ‘architecture’, durability and stability (Henderson *et al.* 2002) or, more generally, the “social and economic relationships in which a particular actor or firm participates” (MacKinnon 2012: 230).

Largely conceived as a “spatial concept related to the local and regional levels of analysis” (Hess 2004), the concept of embeddedness of economic action into wider institutional and social frameworks is used not only in the context of global production networks but much more widely in economic geography since the early 1990s by Dicken and Thrift (1992) based on original contributions by Granovetter (1985a) and Polanyi (1944/2001). While the original contribution of Polanyi (1944/2001) aimed to ‘demonstrate that the economy is enmeshed in

institutions, both economic and non-economic', the concern of Granovetter (1985a) is to 'avoid both undersocialized views of economic action, as in neoclassical economics, and oversocialised views in sociology' and to 'scale down' the embeddedness concept (from Polanyi's rather abstract economies and societies) towards an emphasis on individual and collective agency' including the 'social relations between firms' (Hess 2004). The concept has been the object of some critique in recent years (Krippner *et al.* 2004; Peck 2005; Jones 2008) for the way it abstracts the economy from its context and is perceived to be 'overterritorialized' (Hess 2004), 'increasingly popular but confusingly polyvalent' (Jessop 2001) and calling for a clarification of "'who' is embedded in 'what' and what is so 'spatial' about it" (Pike *et al.* 2000): this critique needs to be taken into account when using it for empirical research.

Territorial embeddedness is considered an important factor in terms of value creation, enhancement and capture from a local and regional development point of view (Hess 2004) and network and territorial embeddedness together are the most important ones for economic geography in general and this study in particular: while the locatedness of the car component manufacturers in Hungary and Eastern Germany reflects their territorial embeddedness, their integration in global production networks (in particular through ownership by other car component manufacturers) reflects their network embeddedness.

Complementing Concepts from Chain-Based Frameworks

While the GPN framework appears to be the most suitable framework for the purpose of this study because of the way it allows for consideration of geographic factors and non-firm actors (such as capital providers), the well-established frameworks of global commodity chains (GCC) and global value chains (GVC), on the basis of which much empirical research has been done over the last 20 years, including on the global automotive industry (e.g. Sturgeon *et al.* 2008) and which are regularly used in policy-related projects do have certain aspects that constitute useful complementarities to the GPN framework. These include in particular the concepts of governance and industrial upgrading which are less explicitly theorised in the GPN literature.

The GCC approach defines global commodity chains as 'sets of inter-firm networks (involving transnational corporations, their subsidiaries and/or independent companies of varying sizes) which connect manufacturers, suppliers and subcontractors (as well as exporters, purchasers,

distributors and marketing activities) in global industries to each other, and ultimately to international markets' (Czaban and Henderson 1998: 587; Bair 2005: 156). Similar to GCC research, GVC research is analytically situated at the micro-level of individual firms and at the meso-level of economic sectors (Bair 2005) but unlike GCC research, it explicitly claims intellectual influence from international business scholars (Gereffi *et al.* 2005) and pays much attention to sector-specific governance and sector-internal logics shaping inter-firm relations, considering external factors such as the institutional environment as well as questions of value-distribution along the chain to a lesser extent (Bair 2005). Rather than a complete or detailed overview of the GCC and GVC frameworks (for these, cf. Gereffi 1994; Gereffi and Korzeniewicz 1994; Gereffi 1999; Humphrey and Schmitz 2001; Bair 2005; Gereffi *et al.* 2005; Bair 2008b; a; Gibbon *et al.* 2008) the following only presents the concepts of governance and industrial upgrading to the extent relevant for this study as these are less explicitly theorised in GPN literature yet relevant for an empirical study focused on the provision of capital: the provision of capital both directly impacts the governance of a firm through the introduction of the capital providers as new stakeholders to the firm and its availability (or lack thereof) impacts the way a firm is able to achieve industrial upgrading.

The governance dimension, consisting of 'authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain' (Gereffi 1994: 97), has received particular attention, with a focus on the creation and distribution of value within a commodity chain and the role of lead firms in this respect (Bair 2005). It reflects the idea that the "value adding capacities of companies [within a global commodity chain] are constrained by the way the chain is organised and by the nature and distribution of corporate power within it" (Czaban and Henderson 1998: 587). Power is here defined in a more narrow way than in the GPN framework, focussing on the capacity to "explicitly coordinate activities" between firms in a chain (Sturgeon 2008: 11). More collaborative forms of network governance exist in some networks, but they depend on a specific distribution of resources between the firms and are often not compatible with an objective of maximised profitability (Lane 2008). Governance influences the way firms are able to adapt to risks such as the volatility of energy prices (Mulhall and Bryson 2013), but also to the availability and cost of capital. GVC research sees governance to be expressed through the parameters imposed by lead firms on suppliers regarding both the objects to be produced and the conditions of their

production including working conditions, quality control, environmental standards etc. (cf. Humphrey and Schmitz 2001; as quoted by Bair 2005). Governance takes various forms ranging from hierarchy (equity owning) and captive over relational to modular and market governance (Gereffi *et al.* 2005). Governance is a key aspect for the empirical analysis proposed by this thesis as it allows to account for how, depending on the type of capital and the context at stake, the providers of capital gain influence over the strategic decision making process of a firm, including the distribution or retention of profits and its ability to raise further capital to achieve industrial upgrading as defined below.

Having received significant attention from policy makers at local, national and international levels, the GCC approach puts much effort into understanding the relationship between the functioning of commodity chains and the development prospects of (in particular developing) countries (Bair 2005). A major concern of the GCC approach therefore is the question of 'industrial upgrading', i.e. how firms can acquire the skills, competencies and supporting services to improve their relative position in a particular value chain (Bair 2005). The GVC approach also claims to be policy-relevant in respect to 'industrial upgrading, economic development, employment creation and poverty alleviation' (Gereffi *et al.* 2005: 79), seeking to determine how firms (particularly in developing countries) can improve their position within value chains (to create and capture more value for their benefit) through industrial upgrading (Bair 2005). Upgrading is here considered to be possible in four different ways (Gereffi *et al.* 2001; Humphrey and Schmitz 2001):

- **Intra-chain/functional upgrading**, i.e. strengthening the firm's position within the value chain by increasing the range of functions fulfilled by the firm;
- **Product upgrading**, i.e. producing more sophisticated goods with higher value;
- **Process upgrading**, i.e. improving the firm's production system and technology;
- **Inter-chain upgrading**, i.e. moving to another industry

There has been work to date aiming to integrate the concept of industrial upgrading into the framework of global production networks, such as Barrientos *et al.* (2010) for example. In many cases the ability of a firm to achieve upgrading will depend on its ability to raise capital in a form and amount enabling it to make the investments required for the upgrading: this is how this study's focus on the geographical factors driving the capital sourcing by the firms ties in with this aspect of GVC research.

Global Production Networks and Local and Regional Development

GCC/GVC research and, even more so, GPN research have made significant contributions in understanding processes of local and regional development. This section briefly presents the concepts through which the interaction between production networks and local and regional development is assessed, as well as some critiques formulated in this respect. Much attention is dedicated to difficulties firms experience in their upgrading efforts and to governance barriers that exist within value chains (Bair 2005), including in the automotive industry (Isaksen and Kalsaas 2009). Glückler and Panitz (2016) propose the concept of 'regional upgrading' as a complement to the traditional upgrading categories of products, processes or function to analyse how countries may benefit from moving from the periphery to the core through a stronger integration of their firms in global production networks implying a positional change of firms in inter-firm networks. The analysis of the effects seems to be focused more at a country level rather than a regional level.

While recognising the significant contribution of GCC/GVC research, there has also been critique of the upgrading concept in the literature (Bair 2005; Tokatli 2013) and of its lack of engaging with questions of development (Dussel Peters 2008). Bair (2005) sees a 'unit of analysis dilemma' in GVC research's focus on firm-level upgrading lacking an explicit link to questions of development at regional or national levels. She further notes that a firm's upgrading does not necessarily imply that it (taken as whole) really benefits in terms of increased security or profitability, and that such benefit is even less evident for certain stakeholders of the firm (such as higher wages, greater job security or improved working conditions for workers) or other local firms in the same sector (and, more generally, for the region). This raises the question of the social implications of industrial upgrading (Rammohan and Sundaresan 2003) and the question of 'upgrading for whom' (Tokatli 2013) (cf. also the question 'local and regional development for whom' by Pike *et al.* (2007)) leading to the conclusion that the narrow industrial upgrading concept on its own may be insufficient as a development-policy oriented tool (Bair 2005; Tokatli 2013). Machacek and Hess (2017) highlight effects of a deskilling of the workforce in car component manufacturing as a potential corollary of industrial upgrading by these firms.

Bair (2005) therefore calls for a stronger consideration in GVC research of 'external' variables such as regulatory mechanisms, market institutions and structural properties of contemporary

capitalism, on “how chains are articulated within and through the larger social, cultural and political-economic environments in which they operate” (Bair 2005: 168) and to what extent “commodity chains exhibit features of path dependency, and with what implications for the various actors involved” (Bair 2005: 170). This echoes the understanding that economic actors (such as firms operating in global value chains) “are always embedded in dense social and institutional networks of relations (including labour relations state regulations) at both national and local levels, and these relations impinge in important ways upon the variability of economic development outcomes across space” (Smith *et al.* 2002: 48).

Questions of development have been more a concern from the outset for GPN research, where regional development corresponds to the creation, enhancement and capture of value (as discussed earlier) for the benefit of the region (Henderson *et al.* 2002):

- **Value creation** means the generation of various types of rents, including technological, organisational, relational, brand or trade-policy rents;
- **Value enhancement** (related to the concept of industrial upgrading in the GCC/GVC literature) involves technology transfers to local firms, the improvement of the quality and technological sophistication of the products and an increase in the demand for skilled labour in the region;
- **Value capture** corresponds to the retention of profits and their local reinvestment, resulting from local ownership and embeddedness of firms in regional economies (MacKinnon 2012) or, more generally, through taxation, upgrading of skills or investment in infrastructure (Coe *et al.* 2013). It is highly dependent on questions of government policy, firm ownership and corporate inter-firm governance.

Coe *et al.* (2004) propose an interesting way to analyse the relationship between global production networks and local and regional development. They not only provide tools to describe the mechanisms through which the two concepts are interrelated, but also identify the conditions that need to be fulfilled if the activity of production networks is to have a positive rather than a neutral or negative impact on local and regional development. The combined consideration of production networks and local and regional development evidences the pertinence of seeing relational and territorial approaches as complementary rather than competing (cf. also Markusen 1994; Pike 2007). Local and regional development is a set of relational processes with interactive effects (Coe *et al.* 2004). It depends not only

on what happens within the region, but also on “wider sets of relations of control and dependency, of competition and markets” (Coe *et al.* 2004: 469). Local and regional development is the “dynamic outcome of the complex interaction between territorialised relational networks and global production networks within the context of changing relational governance structures” (Coe *et al.* 2004).

As the above shows, production networks are relevant for local and regional development insofar as they can foster (or impede) industrial upgrading of firms. The capacity of economic actors and regions to create, enhance and capture value depends, *inter alia*, on the existing and potential connections between production networks and localities and regions. GPN research pursues this analysis by considering that local and regional development results from a ‘strategic coupling’ between global production networks, and the assets of a locality or region. Yeung (2009: 213) defines strategic coupling as “the dynamic processes through which [strategic interests are] coordinate[d], mediate[d] and arbitrage[d] between local actors and their counterparts in the global economy”. Local actors include government agencies, local businesses and business associations (Coe *et al.* 2013). According to Coe *et al.* (2004), endogenous factors are necessary (but not sufficient) for local and regional development: in order for development to occur, regional assets must produce (i) economies of scale (concentration of knowledge, skills and expertise embodied in local social actors that fosters the agglomeration of firms) and/or (ii) economies of scope/spillover effects represented by “learning and a cooperative atmosphere facilitating a broad spectrum of production and entrepreneurial activities” (Coe *et al.* 2004: 471). The organisational strength and flexibility of labour are a key asset whose relative spatial immobility enhances the capacity of global production networks to mobilise economies of scale and scope (Coe *et al.* 2004: 472). More particularly, “regional socio-economic conditions are crucially important for the location decision of investments in the most sophisticated knowledge-intensive stages of the value chain” and “preferences of [multi-national corporations] for the location of their foreign activities are increasingly likely to vary according to the value chain stages that are being re-located outside their home countries” (Crescenzi *et al.* 2013: 1 and 2). Local and regional development also requires ‘strategic coupling’ between regional assets and the needs of trans-local actors situated within global production networks (Coe *et al.* 2004: 471). Coe *et al.* (2004) identify a necessary (but not sufficient) condition as the “strategic coupling of the

global production networks of firms and regional economies which ultimately drives regional development through the processes of value creation, enhancement and capture” (Coe *et al.* 2004: 468), emphasising the “multi-scalarity of forces and processes underlying regional development” (Coe *et al.* 2004: 468). The “dynamic strategic coupling of global production networks and regional assets” is “an interface mediated by a range of institutional activities across different geographical and organisational scales” (Coe *et al.* 2004: 469). The coupling effects can be “enhanced and exploited through particular sets and practices of ‘regional’ institutions” (i.e. local, regional, national and supra-national institutions whose activity impacts the region) (Coe *et al.* 2004: 470). Institutions are strongly embedded in regions and their configurations (including their relationship with other local actors such as labour) shape how regions are articulated into global production networks (Coe *et al.* 2004: 472).

The strategic needs of focal firms in global production networks do not necessarily intersect with regional benefits: according to Coe *et al.* (2004: 469), “[local and] regional development ultimately depend[s] on the ability of [the strategic coupling process] to stimulate processes of value creation, enhancement and capture”. The developmental impact of the coupling process is “highly variable and contingent, and by no means automatically beneficial for the region” (Coe *et al.* 2004: 481). Strategic coupling is insufficient for regional development, as regions may be creating types of value that do not maximise their potential (Coe *et al.* 2004: 474). Regional institutions (public authorities, government agencies etc...) can promote the right creation of value and attract value added activities by training and educating the workforce, promoting start-up firms and supplier networks, facilitating venture capital formation and encouraging entrepreneurial activities (Coe *et al.* 2004: 474). Regional institutions can promote the enhancement of value through the transfer of knowledge and technology and industrial upgrading, as well as through the development of the infrastructure and the human resources required for value enhancement (Coe *et al.* 2004: 474). Institutions (public authorities, government agencies, trade unions...) can promote the creation and capturing of value through the right articulation of their regions into global production networks. Value capture is related to questions of power and control, in the negotiation between institutions and focal firms involving development policies, ownership patterns, and corporate governance (Coe *et al.* 2004: 474). The information asymmetry tends to give the advantage to focal firms, but institutions can mobilise their regional assets to improve their

bargaining position (Coe *et al.* 2004: 474). However, strategic coupling, value creation and value enhancement are not sufficient for local and regional development, as a region may not be capturing the value it creates (Amin and Thrift 1992; quoted by Coe *et al.* 2004) depending on whether profits (i.e. realised value) are repatriated or retained and reinvested in the firm. The likelihood of value capture is the “dynamic outcome of the complex bargaining process between regional institutions [offering region-specific assets] and focal firms in global production networks” (Coe *et al.* 2004: 476). The conceptual framework of GPNs and regional development can be summarised as follows:

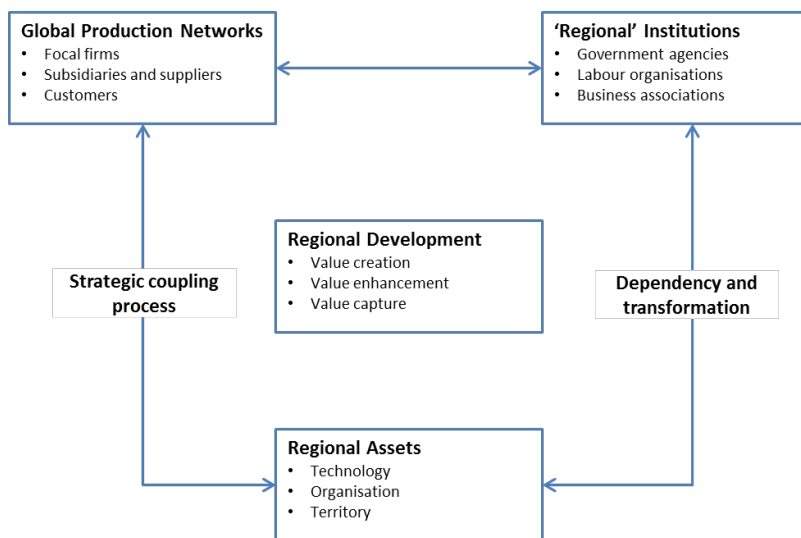


Figure 5 Global production networks and local and regional development

Source: Coe *et al.* (2004)

While earlier GPN research focused on strategic coupling as a means to enhance local and regional development, more recent contributions (e.g. Coe and Hess 2011) recognise that relationships between production networks and regions can also deteriorate, leading to disinvestment, the departure of foreign firms and the loss of access to foreign markets (MacKinnon 2012). MacKinnon (2012) adopts a ‘path-sensitive’ evolutionary economic geography perspective to recall that the interaction between production networks and localities and regions is complex and not necessarily unidirectional: processes of increasing integration (coupling) can be accompanied or followed by processes of changing and decreasing integration (recoupling and decoupling) and depend, *inter alia*, on regional path-dependent situations. Such an evolutionary economic geography perspective implies a “social and pluralist conception of institutions and agency” (MacKinnon 2012: 232) echoing the

variegated capitalism approach presented in Section 2.1.1. While strategic coupling ‘highlights the dynamic processes by which relational assets are matched to the strategic needs of lead firms in [production networks], with regional institutions playing a key role in this process, [...] recoupling and decoupling as a result of regional selection and abandonment processes, respectively, can be seen as key mechanisms of uneven socioeconomic development’ (MacKinnon 2012: 241). MacKinnon (2012) summarises key dimensions for analysing strategic coupling (also with an impact on recoupling and decoupling) as follows:

Dimension	Scenarios
Mode of entry of lead firms	Greenfield, repeat investment, merger/acquisition
Status of TNC affiliates	Autonomous – dependent
Type of region	Source, host
Regional assets	Distinctive – generic
Type of coupling	Organic, strategic, structural
Degree of coupling	Full – none
Depth/layering of recoupling	Deep – shallow
Power relations	Symmetric – asymmetric
Regional development outcomes	Development – dependency
Exposure to decoupling	Low – High

Figure 6 Key dimensions of coupling between global production networks and regions

Source: MacKinnon (2012)

In a similar way, the ‘upgrading’ process so central to GCC/GVC research is non-unidirectional, comprising dimensions of downgrading and corporate abandonment, for example in intra-firm competition between branch plants for investment from the mother company (MacKinnon 2012). The impact of production networks on local and regional development therefore changes over time, not only enhancing but also impeding or transforming the way local and regional development occurs. From a more positive perspective, Horner (2013) highlights that deliberate decoupling and subsequent recoupling can have positive development effects when this allows to replace/rebalance an existing negative/asymmetrical form of integration by a more advantageous/symmetrical one. Research on car manufacturing conducted from a GVC or GPN perspective with a concern for local and regional development include for example Picknerness (1998) in respect of the restructuring of the UK car

components manufacturing industry, Pavlínek *et al.* (2009) in respect of industrial upgrading in the automotive industries of the Czech Republic, Hungary, Poland and Slovakia, Pavlínek and Ženka (2010)'s study on the impact of the automotive crisis of 2008-2009 (and of the relative position of car component manufacturers within the value chain) on regional unemployment in the Czech Republic, or Bailey and De Propriis (2014)'s study on the limits of 're-shoring' of car manufacturing in the UK due to the availability of skills and finance in the supply chain.

The question of the firm's resilience in times of economic and financial crises is also of relevance in this context: as Wehinger (2013) recalls, SMEs tend to have significant difficulties in accessing capital in times of crisis, notably due to a reduction in lending by banks during such periods. This is likely to affect the resilience primarily of firms that do rely on banks loans to source capital, but as the empirical section of this study will show, this is not the case of all firms. The question of ownership is also crucial: studies conducted by Alfaro and Chen (2012) and Kolasa *et al.* (2010) for example found that firms owned by larger foreign firms tend to show higher resilience in times of crisis than firms that are locally owned, especially when there is a strong vertical integration and financial linkages (in particular intra-group lending) between the firms. As the empirical section of this study shows, there is a clear dichotomy of firms particularly in Hungary, with one group being locally owned, and the other being foreign owned – and those that are foreign owned very often get a significant proportion of capital from their owner. This would suggest, following Alfaro and Chen (2012) and Kolasa *et al.* (2010), that these firms are expected to show stronger resilience in times of crisis, although this would need to be confirmed empirically for the firms analysed in this study.⁴ The relevance of foreign ownership (as well as strong trade relationships) in the capacity of firms to weather economic crises (and more generally to resist increasing competitive pressures) has also been highlighted by Smith *et al.* (2014) (in respect of the Slovak clothing industry),

Put into perspective with the empirical research of this thesis, the above raises questions about the extent to which the firms' capacity to obtain capital from different sources (or their potential reliance on retained earnings in the absence of external capital providers) enhances

⁴ Cf. also Cainelli *et al.* (2012) regarding the effect of financial linkages in inter-firm networks on their resilience to external shocks

or impedes their capacity to contribute to the local and regional development of the regions in which they operate and to be resilient in times of crises.

2.2.2 Specificities in a Post-Socialist Context

GPN research has very early on been concerned with the specificities of post-socialist regions and in particular their path-dependency (Coe *et al.* 2004). This section has a closer look at these specificities, first by discussing the double embeddedness of firms in both territories and production networks, then focusing on what this means for post-socialist regions.

Double Embeddedness of Firms in Territories and Production Networks

By definition, production networks do not exist in abstract space but are embedded in various specific territories: both the lead firms' home territories and the other territories into which the production networks expand (Lane 2008). Consequently, the question of how the production networks interact with the types of capitalism that are prevalent in these territories is an important research question (Lane 2008). Research explicitly based on the combined consideration of production networks and varieties of capitalism has already been undertaken by some scholars (see e.g. Herrigel and Wittke 2005; Lane 2008; and Lane and Probert 2009) on the sectors of car manufacturing, clothing and pharmaceuticals with lead firms from the US, the UK and Germany. Among the findings of these works is the understanding that the interaction between production networks and capitalist variegation is a factor of change for both the production networks and the capitalist variegation, i.e. that a mutual impact can be evidenced at several levels and both ways. However, the form and type of this mutual impact differs between specific geographical contexts and between industrial sectors (Lane 2008).

On the one side, existing capitalist variegation between territories can both encourage or discourage the constitution of production networks and shape the way these networks operate. Indeed, one of the reasons for the constitution of production networks involving territories with differing types of capitalisms is that firms seek to escape institutional constraints in their home countries and/or to benefit from more favourable institutional frameworks in the host countries (Lane 2008). Capitalist variegation can therefore be a factor encouraging the constitution of production networks between certain territories. Furthermore, the functioning of production networks can be shaped by capitalist variegation

in both the home countries and the host countries of the lead firm. On the one hand, the geographical origin of the lead firm may shape the way the production network is organised and the way governance is exercised therein (Lane 2008). Firms from different types of political economies can differ substantially due to the institutional context in these respective political economies, including but not limited to the financial systems and regulatory context which 'shape[...] access to finance and impact[...] ownership and investment, patterns of growth and corporate governance systems' (Lane 2008: 252): bank-centred systems of the German type favouring medium-sized, owner-managed firms (i.e. the 'Mittelstand') on the one hand, and stock market-centred systems of the US type characterised inter alia by very large listed firms (Lane 2008). As a result, pressures from shareholders in these listed firms can lead these to organise their production networks differently than a privately owned CME-centred lead firm, or to reorganise their production networks in circumstances where a CME-centred lead firm would not reorganise its production network (Lane 2008). In terms of governance, such differences can be reflected in a different assessment of priorities between quality considerations and cost concerns, for example (Lane 2008). As Lane (2008) recalls, the VoC literature assumes that firms headquartered in CMEs behave differently beyond their national borders than do firms headquartered in LMEs. This is however not necessarily the case: as Herrigel and Wittke (2005) conclude their analysis of the networks of German and US car producers, firms with different origins sometimes adopt similar types of network governance due to the particularities of their sector (cf. also Milkman and Macduffie 1993; Lane 2008). Lane (2008) shows that the impact of the lead firm's home institutions is particularly large when it retains a strong orientation towards the domestic sales market and maintains strong domestic networks, as well as when the suppliers in the host countries remain inter-changeable due to their inability to develop high expertise and global standards. At the same time, capitalist variegation in the host countries may (or may not) encourage lead firms to adopt alternatives modes of co-ordination and, more generally, shape the organisation and activity of these firms (Lane 2008). Such capitalist variegation needs to be considered at all relevant levels, comprising not only the regional level, but also the national and supra-national levels (MacKinnon 2012). As a result, it is important to analyse the institutional context of the political economies in which the lead firms are based as well as of the political economies into which they extend their production networks (Lane 2008). Furthermore, Lane (2008: 235) recalls that 'there exists diversity within a given model of

capitalism in the way sectors and firms respond to global constraints and opportunities', i.e. that the specificities of each sector are also relevant for the way production networks are shaped by any given type of capitalist variegation in the lead firm's home and host countries. The type and scope of this impact depends on the industrial sector considered: as Lane (2008: 254) recalls, '[c]hange is neither wholly path-dependent, nor are global influences invariably disruptive of national institutional complementarities'. The behaviour of firms in different sectors differs and depends both on the institutional contexts in the lead firms' home and host countries and on the specificities of the concerned sector (Lane 2008).

However, the influence between production networks and variegations of capitalism also works the other way: existing production networks shape and change variegations of capitalism both in the home countries and in the host countries of lead firms. Through its trans-territorial production network, a lead firm can create pressures on the institutions of its home country (Lane 2008), e.g. by threatening to close and relocate domestic production sites. Inversely, lead firms from different political economies may (or may not) shape the evolution of capitalist variegation in the production networks' host countries (Lane 2008). As Dawley (2011) argues, trans-national lead firms exercise both structural and political power to see regulatory environments at regional and national levels evolve in line with their needs. As a result, the comparative advantage of a given variety of capitalism both in the home countries and in the host countries of a production network's lead firm can be consolidated or impaired by the constitution and specific organisation of production networks (Lane 2008). Capitalist variegation can be considered as a "product of the interaction between regional assets and [production networks], mediated by institutional frameworks at the regional, national and supra-national scale" (MacKinnon 2012: 233). This ongoing process of regional variegation comprises both the creation of new paths (with innovation and new knowledge generation) and the destruction of old paths (with corporate abandonment and the closure of firm plants) (MacKinnon 2012).

Consequently, a 'multi-level analysis' (Lane 2008: 255) is necessary to apprehend the influence of global, national, regional and sectorial capitalist variegation on the organisation, governance and functioning of production networks and, inversely, the impact of production networks on capitalist variegation at these multiple levels. Linking to this 'multi-level analysis' proposed by Lane, this study proposes a 'multi-agent/actor analysis' that takes into account

not only the various types of firms that are part of the global production networks, but also their non-firm capital providers, in particular individual shareholders, banks and investors acting through the capital markets. The analysis proposed by this study thereby broadens the scope of a classical GPN analysis by taking into account the capital providers to the firms.

Specificities of Production Networks in Post-Socialist Variegations of Capitalism

Bair (2005) sees potential for fruitful 'geographical context and historical path-sensitive' GVC research in the post-socialist economies of Eastern and Central Europe because of their specific institutional context (with 40 years of central planning) and its more recent transformations that shaped and reshaped new organisational forms (Czaban and Henderson 1998). As Smith *et al.* (2014) recall, the political economy within which global production networks (and strategies such as industrial upgrading) are embedded need to be considered if their constituent factors and implications are to be understood. The historical, political, economic and social context of post-socialist economies in Central and Eastern Europe, i.e. their variegations of capitalism, has a relevance for the way firms in this region accede to and function within global production networks. While the GCC and GVC frameworks do not offer tools to apprehend and understand this aspect, the GPN framework does – it was even originally developed in response of the critique of GCC and GVC research's insufficiency in this respect, with the aim to provide tools to analyse local context and, even more specifically, the context of post-socialist economies in Central and Eastern Europe for the nature and effects of global production networks (Czaban and Henderson 1998; Henderson *et al.* 2002). For Czaban and Henderson (1998: 585), "institutional legacies of the state socialist past and inherited macro- and micro-economic structures influence the integration of the region's companies into global production networks". They emphasize that firms in post-socialist economies in Central Europe, as already industrialised economies that remained relatively isolated from the rest of the world economy for a comparatively long time, have "very different historical backgrounds and modes of incorporation into the world economy" (Czaban and Henderson 1998: 585) as compared to companies in developing countries of Asia, Africa and South America developing ties with trans-national corporations (which is what GCC and GVC research focuses on). At the same time, Czaban and Henderson (1998) also emphasize the importance of such global production networks for understanding the way post-socialist economies in Central Europe have been transforming since the fall of the Iron Curtain.

Empirical studies that already used the GPN and GCC/GVC frameworks to assess regional development prospects in post-socialist contexts include Pavlínek and Ženka (2011), analysing the industrial upgrading of car component manufacturers in the Czech Republic in the light of their domestic or foreign ownership for example. More particularly, the specific ways in which global production networks in the automobile sector have developed (with a more or less strong local embeddedness) in Eastern and Central Europe through foreign direct investment into a formerly largely state-owned industry since the early 1990s, as well as the implications thereof on local development prospects, industrial upgrading and labour relations has received significant academic attention, although earlier works do not use the term global production networks (Sadler *et al.* 1993; Sadler and Swain 1994; Swain 1998). Among the factors to be considered when looking at global production networks in post-socialist contexts, Czaban and Henderson (1998) see the historical construction of those global production networks, the types of firm ownership and the specific social and institutional contexts. The particular social and institutional context in post-socialist economies of Central Europe must be considered to understand “national and local differences in labour-market organisation, working conditions [and to assess] the developmental impact of the ways international production, distribution and marketing are organised” (Czaban and Henderson 1998: 589). For Czaban and Henderson (1998: 604-5), the “parameters for foreign involvement [are] derived from the characteristics of domestic markets and institutional arrangements and how these develop over time”. The crucial role of the state in the constitution of global production networks has been highlighted for example by Smith (2015: 291), recalling that various levels of the state intervene, through “policies for national economic competitiveness, industrial policy, trade policy, labour regulation” etc. in particular to attract foreign capital into their territorial remit. The strong presence of foreign-owned firms in Hungary, as seen in the empirical section of this study, is thus to a large extent the result of the actions of the Hungarian state to create the conditions fostering foreign investment. It is indeed the state who “provides the conditions of existence for capital” (Smith 2015: 297) by enabling and guaranteeing private property rights and contracts through legislation and who fosters it through national fiscal and industrial policies. Smith (2015) further recalls that these actions take place at various levels of the state (sometimes with different or even contradictory strategies), creating the conditions for regional variegations of capitalism as discussed earlier.

Regarding the relevance of firm ownership for understanding economic and social development (a classical theme in political economy of development), Czaban and Henderson (1998: 589) consider this to be another explanatory component in post-socialist contexts, “determining in important ways such things as the labour market behaviour of firms”. The various possible forms of firm ownership include ownership by the state or by private bodies, by domestic or by foreign actors, in the form of concentrated private or fragmented publicly listed shares. The type of firm ownerships (and the resulting degree of management control by the owners) determines many aspects of corporate behaviour including, among others, the labour market behaviour, banking relationships and customer relationships (Czaban and Henderson 1998). As the empirical section of this study will show, the type of ownership of a firm also strongly determines the way it sources capital, in particular when it is owned by another foreign firm.

Depending on by whom firms were owned before and after the collapse of state socialism, corporate structures, technologies, processes and products in place under state socialism persisted to a more or less large extent in the years after its collapse (Czaban and Henderson 1998). Many firms which were state-owned under state socialism (such as, for example, the car manufacturing industries in Poland and Czechoslovakia) were privatised, i.e. sold to foreign investors after the regime change. Privatisation sometimes started as a joint venture between the foreign investor and the domestic manufacturer, but eventually led to further acquisitions and full managerial control (Czaban and Henderson 1998). The social and institutional context and the historical construction of production networks is relevant because “the social relations embodied in the networks may have imposed a ‘path dependency’ upon them”, and the “institutional contexts and social arrangements of the state socialist period [including pre-existing national and international inter-firm relations established during the state socialist period] linger on, and circumscribe in important ways the potential for economic and political development”. Even though this may be true less today than in 1998, and even though foreign capital has been a significant actor in the transformation process (Czaban and Henderson 1998) the specific paths firms therefore had before and after the collapse of state socialism have shaped the networks in ways that are still visible today.

The effects of these structural legacies were perceptible both in the short term and in the long term (Czaban and Henderson 1998). During the state socialist period, most of the foreign trade

done by firms in Central Europe was done with firms in other countries of the Council for Mutual Economic Assistance (CMEA), with only limited contacts between those firms and most of the crucial issues (quantity of goods traded, their timing, their pricing and the after-sales service) being determined in inter-government negotiations (Czaban and Henderson 1998). Trade with non CMEA partners (in particular with OECD countries) did grow from the 1970s onwards and reached sometimes significant proportions by the 1980s (with e.g. up to 40% of trade for Hungary) but here again, the individual firms had only very limited contact with their foreign partner firms as these contacts were managed by specialised foreign trade companies (Czaban and Henderson 1998). As a result, when the CMEA disappeared in 1991 and the specialised foreign trade agencies ceased to intermediate contacts with OECD firms, firms in Central Europe suddenly had to manage trade contacts by themselves without having previously acquired the skills and resources to do so and, as a result, found themselves in situations of subordination and dependency vis-à-vis their OECD trade partners (Czaban and Henderson 1998). Furthermore, both the system of state subsidy of certain export prices and the relatively monopolistic positions of certain Central European exporters within their home markets (enabling also these exporters to cross-subsidise their export prices), which had until then enabled these firms to compete on international markets through lower prices, also disappeared around 1990 (Czaban and Henderson 1998). As a result, the export-based business of many of these firms became unsustainable following the regime change (Czaban and Henderson 1998). More important for the purpose of this study, however, are the long term effects of the structural legacies in post socialist economies of Central Europe. Companies under state socialism were often strongly vertically integrated, with a strong backward integration into component manufacturing, in a way representing state-socialist versions of classical Fordist business structures (Czaban and Henderson 1998). Trade was strongly controlled by the governments, creating secure markets which ensured adequate returns, but, at the same time, reduced the necessity of regular product innovation (Czaban and Henderson 1998). After the end of state socialism, these corporate structures became unsustainable, but at the same time, the costs of abandoning them (both from a political, economic and social point of view), were extremely high (Czaban and Henderson 1998). As a result, the corporate structures were adjusted relatively slowly, more slowly than could originally have been expected (Czaban and Henderson 1998). The uncertainties regarding domestic markets and ownership as well as the institutional deficiencies in Central Europe

following the collapse of state socialism initially encouraged foreign investors to acquire equity stakes rather than develop less committed (and therefore less controlled) forms of corporate relations (Czaban and Henderson 1998). As the new macro-economic and political environment then began to stabilise in these countries, foreign investors often kept the type of control over their subsidiaries which they had implemented initially (Czaban and Henderson 1998). Among the reasons for this, Czaban and Henderson (1998: 603) see “propitious institutional arrangements (regarding labour legislation, regulatory frameworks, forms of corporate governance [and] positive legacies of state-socialism)”.

Based on the above, it appears that to analyse the financial dimension, and more particularly the sources of capital, of firms operating in post-socialist regions as part of global production networks, such as car component manufacturers in Hungary and Eastern Germany, it is necessary to consider both their territorial embeddedness in specific post-socialist variegations of capitalism and their network embeddedness in global production networks, with different types of relationships with other firms within these networks (including relationships of ownership) as well as with non-firm actors such as other types of capital providers (individual shareholders, banks and capital markets in particular).

2.2.3 Enter Finance

Despite the obvious relevance of finance for understanding processes and power relations underpinning global production networks, finance remained for a long time a neglected ‘blind spot’ in GCC/GVC and GPN research - as recognised by GPN research itself (Coe *et al.* 2014). More particularly, an aspect not considered in classical GCC/GVC research is the role different capital sources play in enabling or inhibiting industrial upgrading for firms integrated in global commodity chains or global value chains. Pollard (2003) also recalls how economic geography too often starts when and where firms, sectors, global production networks etc. already have their capital in place.

Finance: a Recognised Gap in GPN Research

Earlier literature did not consider the financial dimension as central to the GPN framework. For Coe *et al.* (2004: 472), “global production networks may not directly encapsulate financial capital in their networks configuration”, even though they recognised that financial capital institutions are non-local actors that have a significant impact on regional development and

differentiated three types of financial actors with different degrees of territorial embeddedness: local venture capital, national banking institutions and globally decentralised financial networks (i.e. the capital markets). Coe *et al.* (2004) consider that venture capital is important for regional development as a source of financing for high risk ventures, cutting edge technological development and industries that supply global production networks. The national banking institutions, they argue, play a role through their relationship with the industries (in particular in Germany and Japan) and therefore have a direct influence on regional development. The development of other regions depends on their articulation into globally decentralised financial networks mediated through global financial centres like New York and London. In short, Coe *et al.* (2004: 473) consider the “availability of investment and equity funds [as] critical to growth and development” of a region and that the “uneven access to local and non-local forms of financial capital can both enhance the strategic importance of some regional economies to global production networks and diminish others”. A question not initially raised by Coe *et al.* (2004) however, and which this study explores, is which type of capital firms in a given region actually use, as well as the reasons thereof and their potential effects on firm governance and local and regional development.

Early exceptions crediting the importance of finance in global production networks included Gibbon (2002); Palpacuer (2008); Milberg and Winkler (2010); Baud and Durand (2012), and the gap was increasingly being recognised as ‘a persistent and certainly valid critique’ of research on production networks over the years (Coe 2012: 392; Coe *et al.* 2013). The question of how activities of GPN firms are financed and the intersection of finance with geographies of production was increasingly understood as an “important nexus for understanding economic processes [including the formation and evolution of GPNs] and developmental outcomes” (Aoyama *et al.* 2011; Taylor 2012; Coe *et al.* 2013: 2; Hall 2013), the development of which would “enrich [GPN research] conceptually, and enable it methodologically and empirically” (Coe *et al.* 2013). According to Coe (2012: 392), the ‘challenge remains [however] to drill down into the impacts of financialisation at the sectoral and corporate level on GPN structures and dynamics’. The relevance of finance was recognised to an even more extensive degree more recently, cf. e.g. Cichon (2015), analysing global value chains as “embedded not just in a productive global economy but also a financial global economy” (Cichon 2015). According to Evans and Hubbard (2008), cited by (Cichon 2015), financialisation has led to a

change in the ownership structure of many companies. The car component industry in Hungary is a prime example of this as the empirical part of this study will show, with a large number of firms owned by foreign car component manufacturers. One of the rare but very relevant attempts made to delve even deeper into questions of finance in global production networks is Baumeister and Zademach (2017)'s study of actual and potential forms of enhancing finance through inter-firm collaboration in the automotive industry in Germany and Brazil. Citing the example of (primarily West) German car component manufacturers, Scheuplein (2012) evidences how the strategies of financial investors such as private equity acquiring ownership stakes in firms that are part of global production networks can clash with (and ultimately fail due to) the opposing strategies of these networks' lead firms, German OEMs in the case of German car component manufacturers. Attention has increasingly shifted towards further integration of finance into global production networks in recent times. More work is likely to emerge in this area over the coming years and this study contributes by 'exploring, rather than assuming the financial anatomy of a territorialised production system' (Pollard 2007; Lee *et al.* 2009: 736; Zademach 2009) by looking at the degree, mode, reasons as well as local and regional development effects of connections between capital markets and the firms that form a global production network. This approach aims to link with the proposal of Coe *et al.* (2014) to integrate finance into global production networks by looking at 'global financial networks' and their interconnection with global production networks.

Conceptualising capital provision for firms in global production networks

When aiming to understand the financial anatomy of a territorialised production system, the sources of the capital used by firm represent a key dimension: which types of capital do firms use and who are the actors that provide it? As set out in Section 2.1 this depends to a large extent on the specificities of the variegation of capital at hand. However, when the firms are not only integrated territorially in these variegated capitalisms but also in global production networks, as is the case for car component manufactures, another dimension comes into play: the network integration of these firms in these global production networks, and their relationships with other GPN firms. This relationship may include a financial dimension such as when one firm is owned by the other (and receives some of its capital in the form of equity from that other firm) or when one is a supplier to the other (and provides capital in the form

of supplier credit when the good is delivered some time before its price is paid). Further questions of relevance in this context include

- which firms within global production networks have direct equity or debt connections with capital markets (most probably lead firm and tier-one firms, but maybe also tier-two firms)
- whether and how the integration into a global production network increases the likelihood of smaller (tier-two and tier-three) firms of having direct connections with the capital markets
- whether a lead firm's connections with capital market changes the way it deals with smaller firms in the global production network (affecting 'value chain governance' in GVC terms)
- how financialisation might have an impact on the constitution and evolution of the global production network itself (Coe *et al.* 2013)

The effect of a firm's double territorial and network integration on its sourcing of capital may also have an impact on various dimensions of strategic coupling as proposed by MacKinnon (2012), recoupling and decoupling processes as well as firms' prospects for industrial upgrading. This echoes the call of MacKinnon (2012: 242) that "future research should focus on the type, degree and depth of coupling processes, the underlying power relations between regional institutions and [lead firms] and the dynamics of recoupling and decoupling through repeat investment". A further aspect of relevance is the role of specific types of actors and structures such as capital market actors including the 'transition industry' (Swain 2006), 'advanced business services' and 'global financial networks' (Wójcik 2013b) play in the geographical diffusion of financing practices and their introduction in the various types of firms that are part of global production networks.

2.3 Firm Finance and its Geographies

This third section discusses the geographies of firm finance with an analytical focus on the firm rather than on a territory (as in Section 2.1) or network (as in Section 2.2). More precisely, it focuses on the firm as an entity integrated in both territories and networks, the financing of which therefore needs to be analysed from a geographical perspective allowing to account for the spatialities of relationships of capital provision and for the different types of

embeddedness. It is organised in two parts: the first part (2.3.1) assesses how firm finance has been conceptualised in economic geography so far, focusing on what is spatial about firm finance and how firm finance is mediated through space. The second part (2.3.2) looks more specifically at sources of capital from a geographical perspective, highlighting the unequal relationships of power between providers and users of capital, how both parties are embedded in their respective territorial and network contexts and what impact this has on the governance of the firms. It concludes by formulating the research questions of this study.

2.3.1 Geography's Interest in Firm Finance

Although firm finance is traditionally conceptualised primarily in economics and business administration, it has been extensively theorised in economic geography to date, evidencing how it unfolds differently across space and how it is mediated through space. One of the points of attention has been the uneven availability of certain types of capital to certain types of firms (e.g. small firms, or peripherally located firms). Other (perhaps more recent) points of focus have been the uneven implications of certain types of capital on the firm's operations as well as the process conceptualised as 'financialisation' in particular of large international firms: space and place are not neutral to the ways in which capital is used by firms.

A Geographical Perspective on Firm Finance

While local and regional development has been a longstanding and consistent concern of research in economic geography, finance for long remained a more sporadic and intermittent object of interest (often around financial crises) but a significant literature developed in particular since the 1990s (Leyshon 1995; 1997; 1998). As recalled by Pollard (2003), much of the earlier work on geographies of finance focused on the role of finance in producing uneven development (Harvey 1973; 1982), on particular financial institutions and services (Martin and Minns 1995; Clark 2000), on global financial institutions (Clark 2005), on the nature and dynamics of specific financial centres (Sassen 1991; Thrift and Leyshon 1994; McDowell 1997; Clark 2002; Engelen 2007) or on international processes (Clark 2005). It also focused on the (centralised or decentralised, domestic or foreign dominated) structures and transformations of national or regional financial and banking sectors (Dow 1992; Porteous 1995; Blažek 1997; Dow and Rodríguez-Fuentes 1997; Klagge and Martin 2005). Attention to the regional impacts of financial processes was rare but not totally absent (McKillop and Hutchinson 1990; Dow

1992; Martin and Minns 1995; Crevoisier 1997; Martin *et al.* 2005), and so was research focusing on post-socialist economies of Central and Eastern Europe (Csank 2003; Weill 2003; Gál 2005).

More recently, interest of economic geographers in finance increased significantly, spurred in particular by the financial crisis that started in 2007 (Engelen and Faulconbridge 2009; Lee *et al.* 2009; Pike and Pollard 2010; Marshall *et al.* 2011; Wójcik 2012; Christophers 2013b; Hall 2013; Marshall 2013; Pollard 2013; Soederberg 2013; Wójcik 2013a) and leading to the development of 'financial geography' as a new sub-discipline of economic geography (cf. e.g. Sokol 2013 for a detailed list of references). Research on financial geographies in post-socialist Central and Eastern Europe remained limited but some important work was done in this respect (Gorzela and Goh 2010; Smith and Swain 2010; Sellar 2012; Blažek and Bečicová 2016). Like previous research, much of this research still focuses on processes and phenomena at the international level, such as global financial institutions (Clark and Monk 2013), global or regional financial centers (Karreman 2009; Jarvis 2011; Engelen and Glasmacher 2013; Zademach and Musil 2014; Gordon 2016) national banking sectors (Blažek and Bečicová 2016) and the integration of cities into global financial flows (Zademach and Musil 2014) as well as analysis with a focus on regions (Alessandrini *et al.* 2009; Appleyard 2011). Other recent contributions analyse the interdependent relationship between historical trends in the internationalisation of banks and the evolving representation of banks' activities along and across conceptual borders of productivity (Christophers 2011; 2013a), on the banking sectors of specific countries (Blažek and Bečicová 2016) on Islamic Finance (Pollard and Samers 2013) or on the day-to-day experience of individuals ranging from the economically vulnerable (Coppock 2013) to the super-rich (Beaverstock *et al.* 2011). The spatial nature of finance was also recognised by the field of social studies of finance, cf. e.g. Corpataux and Crevoisier (2016) who provide a critique focusing on the lacking focus on the interconnection between the financial sphere and the 'real' economy and the 'embryonic or even metaphorical' conception of space within social studies of finance. They further recall that "finance is fundamentally a spatial industry, which creates and organises hyper-mobility of capital in space", "changing the spatial allocation of capital" and "transforming the geography of productive activities and spatial hierarchies" (Corpataux and Crevoisier 2011).

Despite this now longstanding and recently significantly increased interest of economic geographers for financial phenomena and the rich body of research available to date, there is strong consensus among economic geographers that the understanding of the geographical nature of finance remains insufficient and that more research is needed to shed more light on this area, including the financing of firms (Pike and Pollard 2010; Sokol 2013). In particular, studies focusing on how financial practices and mechanisms unfold at the level of particular firms remained relatively limited to date (Bečicová and Blažek 2015). According to Pollard (2003: 446), “an important challenge [is] to understand firms in their appropriate regional, institutional and sectoral context [and] find the categories and languages necessary to connect micro-economic analyses of firm finance with broader conceptions of the social and political construction of financial networks that shape firms’ access to finance and their subsequent governance”. Clark and Wójcik (2007: 15) recall that the firm not only has a history but also a geography, “apparent in terms of the location of its owners, its productive assets, its markets, and its competitive spheres of influence” and that the connection with institutional investors from other regions through the capital markets exposes the firm to a “set of expectations [of these investors] as regards their status and the proper form of corporate governance [which may be] at odds with history and geography [of the firm]” (Clark and Wójcik 2007: 17).

How well conceptualized and theorized is firm finance in economic geography? Is the definition precise and operational or is it vague and ‘ill-theorised’ and therefore contested and multi-dimensional? Just like the term ‘financialisation’ (Lapavitsas 2011), the term ‘firm finance’ is contested and has multiple meanings. According to Marx, “capital is not a thing but a social relation” (Bryan *et al.* 2009: 464) which recalls that understanding finance requires, among others, an understanding of the relationship between actors that provide capital (i.e. the capital providers) and those that use it (i.e. the firm), combining a relational perspective with a territorial perspective (Pike 2007). Empirical studies that extend a relational approach to finance by a topological approach, focusing even stronger on the geographical element (and using an ethnographic approach to explore topographies of debt at the level of individuals and families), include Harker (2016) as well as work on financial ecologies (Leyshon *et al.* 2004; French *et al.* 2011; Lai 2016). Corpataux and Crevoisier (2016) liken the relationship between a business and those who own capital to a social relationship and note that in the case of financial markets and portfolio-style management such relationship is extremely narrow,

focusing only on financial return and risk. By contrast, Corpataux and Crevoisier (2016) note that the social connection between firms and capital owners outside financial markets involves further issues “dealing with the (often unwanted) environmental and social effects of a company’s policy, the more or less willing political involvement in local or national society etc.”.

Firm Finance across Space

Previous research suggests that the way in which capital is allocated to firms (whether it be in the form of equity or debt) is not neutral to space and place. Significant attention has, for example, been given to the question whether there is a ‘credit gap’, i.e. whether access to credit is more difficult for firms located in peripheral regions in particular when a country’s financial system is centralised (Dow 1992). Lee and Brown (2016) analyse potential variations in the demand and supply of bank finance for innovative SMEs in UK peripheral regions. Klagge and Martin (2005), for example, ask whether the flows of capital to firms across regions is impacted by the (more or less centralised) spatial organisation of the financial system in the relevant regions and find that it does to a certain extent.

Much work of economic geographers in relation to firm finance has concentrated on the concept of ‘financialisation’. According to French *et al.* (2011: 800), even though financialisation is a “profoundly spatial phenomenon”, research in this field has been “insufficiently attentive to space and place”, both in terms of processes and effects, and to the “geographies of money and finance”. As French *et al.* (2011: 805) put it, the role of space and place within monetary and financial processes is a “glaring lacuna at the heart of the financialisation project”. Lee *et al.* (2009: 735) consider the exploration of “the economic geographies of financialisation [as] a crucial task” with focus on the “geographically specific contexts [that] mediate processes of financialisation”. Financialisation is seen as a profoundly geographical phenomenon (Hall and Leyshon 2013) comprising a historical dimension (Christophers 2014) and is a form of what Swain (2006: 208) calls the “geographical transfer of abstract economic knowledge” (including concepts, models and representations) having a “formative impact on economic practices”, and which is mediated through local agency in the ‘receiving’ regions. It is both a local and extra-local process which is “articulat[ed] with indigenous economic and political processes” and which “cannot be simply grafted *in toto* onto existing economic and political processes [which are beyond their control], but inevitably

combines and recombines with them” (Swain 2006: 210 - in respect of neoliberalisation, but the same description could be used for financialisation). Despite the substantial existing literature on financialisation, this geographically and historically differentiated dimension of the phenomenon, the geographically differentiated nature of small firm finance (Pollard 2003) and the “highly interconnected entanglement of geographies and finance” (Pani and Holman 2013: [19]) with the “dynamic and intricate geographies of [...] actors, ideas and practices [of financialisation]” (Pollard *et al.* 2014: 321) remains comparatively less explored to date and is increasingly being called to further attention (Lee *et al.* 2009; Pike and Pollard 2010; French *et al.* 2011; Sokol 2013). Research on financialisation so far has focused on processes and effects of financialisation on three spatial scales: the nation state, the firm and the household/individual. According to French *et al.* (2011: 805), research has so far been insufficiently attentive (i) to other spaces such as the region and the international financial system and (ii) to geographical registers other than scale, such as networks for example. French *et al.* (2011: 809) recommend “taking the international financial system and other missing geographies of financialisation seriously”, and to “move beyond a scalar geographical imaginary towards a *network approach* to money and finance” (emphasis added). This highlights a further gap in existing research which this study aims to address, the question being whether the study can evidence the presence of forms of capital (such as capital raised directly from the capital markets) that would suggest a strong ‘financialisation’ of firm in these regions.

Research on the intersection between the financial sphere and industrial capital and their implications on local and regional development has also remained limited to date (Pike 2006). Notable exceptions include analyses of how financialisation can lead, for example, to the relocation/disembedding of corporate activities in the United States (Muellerleile 2009) or to the closure of corporate activities in North-East England (Pike 2006).⁵ The financial dimension of production networks (cf. Section 2.2.3), can be considered as a spatially sensitive narrative of finance, one aspect of how finance unfolds across space.

Much of the literature highlights that different categories of firms do not have the same access to capital, and that new, small and peripheral firms in particular struggle more to access

⁵ For related pre-financialisation work on this cf. e.g. Leyshon (1996); or Martin (1999)

capital, whether it be in the form of equity provided by stock markets or venture capital firms (Klagge and Martin 2005; Martin *et al.* 2005) or debt provided by banks (Dow 1992; Dow and Rodríguez-Fuentes 1997; Pollard 2003; Alessandrini *et al.* 2009; Appleyard 2013; Lee and Brown 2016), being understood that other authors question this conclusion and remain more open about the adverse effects of peripheral locations on capital provision (McKillop and Hutchinson 1990; Smallbone *et al.* 1999; Patterson and Anderson 2003; Bečicová and Blažek 2015). Lee and Brown (2016) provide further references to empirical work analyzing (with conclusions in one sense or the other) the question of credit gaps for firms in peripheral regions and the potential reasons therefor. Corpataux and Crevoisier (2016: 618) provide an interesting overview of work concerned with the difficulty for SMEs to access capital (Dow and Rodríguez-Fuentes 1997; Dow 1999; Pollard 2003; Klagge and Martin 2005; Torrès 2011) and unable to grow without losing their independence (Crevoisier 1997; Corpataux and Crevoisier 2005), contrasting this with “multi-institutional, multi-national and multi-local groups whose parent companies are well connected to the financial milieus and who know how to use financial resources to develop their activities and external growth”. SMEs face longstanding problems of access to finance, as evidenced by several studies done on the situation in the UK (Cowling *et al.* 2012; Lee *et al.* 2015; van Der Schans 2015; Henry *et al.* Forthcoming).

Spatial Mediation of Finance

As mentioned earlier, finance not only unfolds across space and affects different territories differently: it is also promoted, mediated and contested unevenly through this space. According to Pike (2006: 206), “geographies of financialisation and shareholder value [...] unfold in uneven ways across the range of interdependent, socially constructed and contested scales”. This corresponds to the ‘uneven geographies of financialisation’, i.e. the role of space and place within processes of financialisation and the importance of financialisation for understanding uneven geographic development (Pike and Pollard 2010; Dixon 2011; French *et al.* 2011). Although there already has been growing academic attention on related questions (e.g. Pollard 2003; Martin *et al.* 2005), subjects to be further explored include, for example, the link between shareholder value orientation and the disembedding of regional social relations of ownership and control (Pike 2006), the geographical embeddedness of subjectivities that implement or resist financialisation, and the role of the international

financial system (including global financial markets and circuits of securitisation) in local contexts of financialisation (French *et al.* 2011).

French *et al.* (2011) recommend three directions for further research on financialisation: first, a greater engagement with the wider political-economy literature on money, finance and neoliberalisation (which focused on financialisation long before the neologism was coined). Second, the recognition of the relational nature of financial and economic change and the growing integration of the international and domestic financial systems. Third, an increased attention to the “spatial causes and consequences of the circularity or flow of funds”: the “inescapable geographic construction, context and rootedness of financial networks and practices” (Pike and Pollard 2010: 38). The analysis of capital sources and financing patterns in this study aims to contribute to this by exploring which relations between capital providers and firms exist in the sample of firms analysed, and how financial networks may be rooted in the regions analysed through the presence of capital in these firms.

2.3.2 Firm Finance and Sources of Capital

Within the general topic of the geographical nature of firm finance, sources of capital are crucial as they represent the relationship between two actors (the capital provider and the firm) which are both embedded in specific contexts spatially and otherwise. According to Zingales (2000: 1625), Webster’s dictionary defines the verb “to finance” since 1866 as “to raise or provide funds or capital for”. Zingales (2000) further notes that the adjective “corporate” (or firm) helps distinguish corporate finance (i.e. the financing of firms as a unique combination of physical and human capital) from other forms of financing, such as real estate finance (which concerns the financing of real estate assets) and personal/consumer finance (which concerns the financing of an individual or household). Public finance could be added here as the financing of the state and other public entities. Even though they have always constituted a minority of firms even in the US (La Porta *et al.* 1999), publicly traded firms with a diversified investor base have traditionally been the focus of the study of corporate finance, simply because data is most easily available for these firms (Zingales 2000) – and the same is true for much of the research on firm finance done by economic geographers so far. The problem is that, as Zingales (2000) notes, these firms tend to have abundant internal financing and any external financing (especially with equity) is a rare event. Most of the theoretical and empirical effort has therefore been dedicated “where we expect finance to matter the least”

(Zingales 2000: 1628). According to Zingales (2000) most companies have only one or a small number of shareholders and do not have their equity publicly traded. Studies of firm finance have so far largely ignored (or understudied) the younger and smaller firms that do not have access to public markets (Zingales 2000) and economic geographers focusing on SME finance are among the rare exceptions. “The firm represented in academic research is large, publicly traded, owes its origins to twentieth century industries, and has a national identity even if it trades in markets around the world (Williamson 1985). But this is not the whole story” (Clark and Wójcik 2007: 11). Zingales (2000) therefore proposes a general theorization of the firm including the raising of capital from other sources. A theorisation of the firm is also proposed by Jensen and Meckling (1976) including the question of agency and ownership and Jensen (2000) as well as Jensen and Murphy (2006) with a focus on governance and organizational forms, Harris and Raviv (1991) with a survey of capital structure and Shleifer and Vishny (1997) with a survey on corporate governance. As Henderson and Alderson (2016) show in respect of legal advisory which is closely related to financial services, geographical proximity between service providers (whether they be lawyers or financial intermediaries) and clients (i.e. the firms) retains an important role even in a world that is seemingly increasingly globalized and in a seemingly global and a-geographical sector such as financial services. The same could be expected to likely apply to capital providers and is the objective of the empirical analysis of this study with respect of the sources from which small, medium-sized and large car component manufacturers in Hungary and Eastern Germany (very few of which, if any, are publicly traded firms with a diversified investor base) typically obtain their capital.

“Capital is an essential resource for firms and it is a resource that is uneven and uncertain in its supply” (Pollard 2003: 436). Among the types of firms that can be studied with regards to finance from an economic geography and regional studies perspective, small and medium sized firms are particularly interesting because, on the one hand, they have comparatively more difficulties in accessing capital at reliable and affordable conditions than larger firms and, on the other hands, they play a key role in economic activity and local and regional development (Pollard 2003). It is therefore relevant to ask how and from where they access capital, how they use it and what effects their financial commitments and relationships have on their decision making, operating and development prospects (Pollard 2003).

Taxonomy of Capital Sources

It also needs to be considered that different types of capital are employed for different purposes: equity will often be used for strategic investments, long term debt for the acquisition of machinery, short term debt for working capital requirements. The productive process within a firm (including purchase of machinery, modernisation of equipment, funding of the time gap between acquisition of material and sale of the finalised product etc.) can be financed by different types of capital (notably equity, debt, subsidies or own funds) provided by different types of sources. These sources can be internal (retained earnings, working capital...) or external. Whether it is in the form of equity or debt, the external capital contributed to a firm's production process can in principle be obtained either from "traditional" sources (bank debt, state subsidies, providers through invoice discounting etc.) or from the capital market directly (public equity, bonds etc.) or indirectly (with funds provided by financial institutions that refinance themselves on the capital market). "Traditional" sources have as a common point that they are not predominantly "market driven" in the sense that they often have stronger and longer-term relationships with the firm as opposed to market-sources. Capital market investors include insurances, pension funds and other institutional investors etc. Venture capital and private equity can probably be considered as an intermediary form of equity finance between non-capital market finance and capital market finance, because it constitutes a form of finance that shares characteristics of both areas.

Firms need to source capital not only over the medium and long term to invest in fixed assets (such as new plants, equipment, technology and products) and R&D expenses, but also in the short time to finance working capital, purchase material and to bridge the gap created by extended payment terms granted to powerful clients exceeding those granted by less powerful suppliers (Baumeister and Zademach 2017). These unequal power relationships can be illustrated by the differing 'C2C' (cash-to-cash) cycles of lead firms and the various tiers of less powerful suppliers. At the most abstract theoretical level, the provision of capital to firms can be conceived of in contrasting terms by conventional (neoclassical) economic theory (based on the assumption of perfect, efficient capital markets) on the one side and Keynesian/post-Keynesian theory (based on the assumption of imperfect capital markets) on the other side (Klagge and Martin 2005). While the former postulates perfect markets with

perfectly informed and rationally behaving market participants, and therefore considers external capital as a perfect substitute for the internal funds of firms (Klagge and Martin 2005), the latter takes into account the imperfections of markets with ‘asymmetric information, agency, uncertainty and interdependence’ and therefore recognizes the space-relevance of capital provision and of the relationships between providers and users of capital (Klagge and Martin 2005). Firm finance as defined above implies unequal relationships of power between firms as capital users and other external actors as capital providers. According to Zingales (2000: 1630), critiquing the irrelevance of financing choices advanced by Miller and Modigliani (1958) under theoretical conditions, “the secret to finding reasons why capital structure does matter lies in a deeper understanding of the content of the firm ‘black box’ and how this content is affected by different choices of financing instruments”. The following graph shows how and through which channels the different sources of capital interact with the firm:

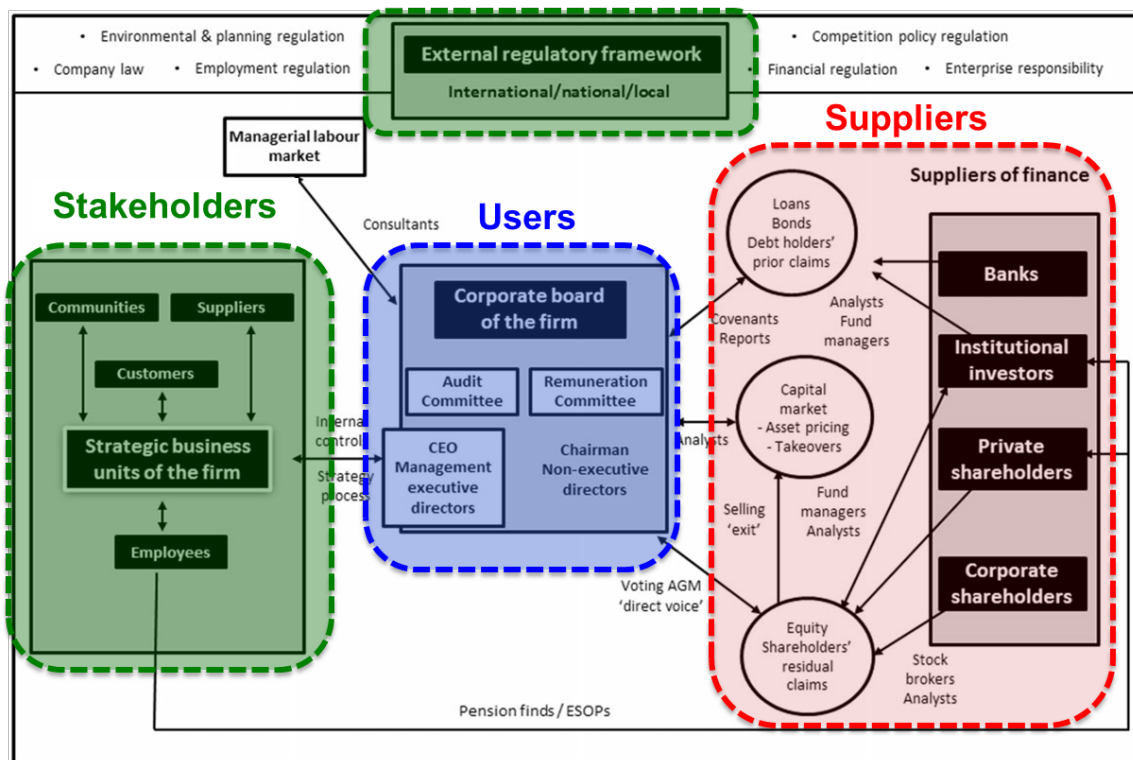


Figure 7 Placing finance in the governance of a firm

Source: Wood et al. (2016: 5), adapted by the author

When firms invest in new premises, purchase new machines, maybe acquire another subsidiary, to expand or at least maintain the standard of modernity of their equipment, the capital they use to finance these investments needs to be available over a relatively long term

given that it will be bound in these investments for a certain number of years. The main sources of capital typically used for this purpose are (i) 'industrial' equity, i.e. equity provided either by the founding individual or family owners, or by other industrial firms operating in a related sector, (ii) long-term bank loans, (iii) subsidies and (iv) 'financial' capital raised through the capital markets or other financial actors such as private equity firms. Each category implies a specific type of unequal power relationship between firm and capital provider: for example, in the case of 'industrial' equity, there is purportedly an operational and managerial link between provider and user of the equity, while in the case of 'financial' equity the investment is seen as a financial asset by the equity provider (although this needs to be relativized in the case of private equity which will often be hands-on/activist). Another reason for the distinction is that one could potentially consider 'industrial' equity as being less 'financialised' than 'financial' equity. The distinction between these forms is not always self-evident or clear-cut, such as when founding families hold significant portions of shares of a firm traded on the stock market (as is the case of the controlling share in VW and Porsche held by the Piëch and Porsche families, for example) or when industrial firms hold shares in other firms as part of their 'financialisation strategy' rather than as part of a strategy of production chain integration.

The following 'taxonomy of types of capital' illustrates the various types of capital generally found in firm finance, each type coming with its own characteristics, constraints, opportunities, conditions, costs, risks etc.:

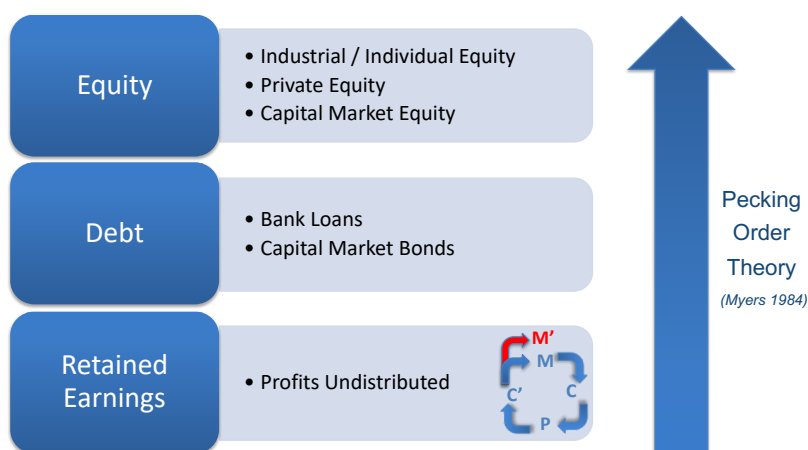


Figure 8 Taxonomy of capital sources

Source: author

Theoretically possible sources of capital include different types of equity such as equity paid in by an individual/family owner, by a foreign private equity or venture capital firm, by capital market investors (i.e. openly traded with potentially constantly changing ownership) or by a foreign car supplier owning the firm. The most classical form of capital is equity provided by a firm's founders/owners, even though this in practice today tends to constitute only a comparatively small portion of the capital employed in a firm.

Another key source of capital for firms is long-term debt provided by local or foreign banks and bonds issued on capital markets, and there has been research to date analyzing this dimension from a geographical perspective. Bečicová and Blažek (2015), for example, question the idea of a credit gap for firms located in peripheral regions (Dow 1992). The role banks and other financial institutions typically play in the provision of capital to firms in a region strongly depends on the structure and typology of the banking sector in that region and on the relationships of that sector with the region's firms. Germany, for example is well known for the strong and long-term relationships between small and medium-sized firms owned by domestic individuals (the "Mittelstand") and their "relationship banks" ("Hausbanken"), playing the role of a reliable source of finance for the investment needs of these firms (Handke 2011). While the literature postulates that such a strong relationship between banks and firms exists to a far lesser extent in capital-market driven economies such as the US, only little is said about what the situation is in post-socialist economies such as Hungary or even in the formerly state socialist regions of Germany. One of the key differences between capital markets and banks as capital providers to firms is resumed by Aglietta and Breton (2001: 438) as being that in capital markets, firms are the object of a 'public evaluation that brings together and co-ordinates the opinions of the largest pool of potential investors available' while bank loans represent bilateral relations between the firm and the bank(s) that provide the credit. Oversimplifying a bit, these bank loan relations tend to be stronger and longer-term related than the relationship between firms and investors on the capital markets. Aglietta and Breton (2001) recall that the long-term nature of relationships in bank credit (with renewed lending over the years between the same counterparties) can lead to mutual relationships of trust with the capitalization on past experience and a preference given to likelihood of continued credit over securing the lowest cost. Aglietta and Breton (2001: 441) further set out the main differences between capital markets and bank debt as well as the

main differences in the form of control exercised on the firms (and hence the impact on firm governance). Aglietta and Breton (2001: 450) note that “the interrelations between the decisions that the company makes and the financial agents that hold an interest in the firm can be seen in the use of profits generated and the financing of the accumulation process” although “even in market finance systems, internal finance and bank debt remain the predominant sources of financing [...] and the stock market does not play a major role”. Concepts such as ‘supply chain financing’ fall into this category and have elicited the interest of economic geographers in certain contexts (Baumeister and Zademach 2017). Further capital sources also include various other forms of debt such as short term revolving lines from a local or foreign bank, intra-group loans from a shareholder company (e.g. if the firm is owned by another industrial firm), debt to suppliers (e.g. in case of delayed payment of invoices), loans from other GPN firms (e.g. an OEM that is the firm’s client, as part of a supply chain finance programme) and other forms of inter-firm finance (Baumeister and Zademach 2017), subsidies by the state or other public organisms. Subsidies tended to play an important role in Eastern Germany in the years following the reunification, but they tend to be less and less present in recent years.

Retained earnings, that is the profits of previous years that have not been distributed as dividends but retained in the firm, constitute an often overlooked but in practice significant source of capital for many firms. The preference of firms for retained earnings according to pecking order theory, as shown below, as opposed in particular to external equity can be explained, among other factors with the loss of autonomy of entrepreneurial management and control that external capital (in particular equity, but also debt) involves, with a shift of power and control to external stakeholders (Klagge and Martin 2005). Technically, retained earnings are considered as part of the equity in economics, business administration and accounting (and counted in the equity ratio for example). From the perspective of geographies of finance, however, it makes sense to distinguish ‘actual equity’ (which are external funds contributed by a shareholder to the firm) and retained earnings, which although technically the property of the shareholders, is not an external source but capital generated internally through the firm’s production process. According to Aglietta and Breton (2001), the development of financial markets (and more generally what has been conceptualized as ‘financialisation’) in recent decades has led to an increased pressure on publicly traded firms

to distribute dividends or buy back shares (in order to maintain a minimum return on equity, boost their share price and protect them against the threat of takeover by other firms). Aglietta and Breton (2001) further note that as a consequence, a lesser portion of profits is retained by these firms and used to fund internal growth, making them more dependent on funding provided by banks.

The 'cost of capital' (be it in form of dividends, interest payments or other types of costs) and the general availability of capital (or the conditionality thereof) is an important factor determining the competitive position of a firm – similar to the cost of other factors such as energy (Mulhall and Bryson 2013). Given that the access to capital (as well as the cost and conditionality thereof) differs between firms and locations, the question of costs, availability and volatility of capital is relevant for a firm's activity and firms are forced to adapt in order to survive and/or remain competitive (cf. also (Bluhm and Martens 2008: author-year) on the financing strategies of German SMEs).

Capital Structure and Pecking Order Theory

Classical financial theory has long argued whether different types of capital have different types of impact on a firm by discussing whether there is something like an 'optimal capital structure' (i.e. mix of equity and debt on the firm's balance sheet). While the mix of capital types is considered irrelevant in a hypothetical tax-less, friction-less world (Miller and Modigliani 1958), it is recognised that the question is relevant in the 'real world' (with taxes, frictions etc.) and that it is not neutral through which sources a firm finances its operations (Myers 1993; 2001). The conscience of this relevance within the firms themselves is expressed by the 'pecking order theory', i.e. the idea that firms have an order of preference for certain types of capital over others: according to pecking order theory, their preferred source of funding would be internal funds (i.e. retained earnings), next would be debt financing and only in the last instance would they seek to raise capital in the form of equity (Myers 1984; Myers and Majluf 1984). The reason for this 'pecking order' according to Myers (1984) was that capital was assumed to be the more expensive the further away the capital's owner was from the firm itself (and therefore from the information regarding the situation of the firm). But this debate has largely been a 'non-geographic' one, the question only being between equity, debt and own funds. Geographic aspects such as the location of the firm, of its owners or of its lenders (and therefore the relevance e.g. of the question which type of investor the equity

is invested by) were largely absent from this debate and were only later on taken on, in particular but not exclusively by economic geographers. In addition, the classical financial theory has to a large extent focused on cost as the distinguishing factor between different types of capital, while economic geographers (and other cognate disciplines) have widened the scope to include questions such as governance, flexibility, resilience in crises etc.⁶

Changing Modes of Sourcing Capital?

The previous section demonstrated that sources of capital are not space-neutral in their presence and availability to different types of firms located in different types of locations. But the relevance of analysing firm finance from a geographical perspective goes beyond that: even if one assumed that, although coming from different types of sources depending on the typology and locations of a firm, capital was always available in an amount sufficient for the needs of the firm (and therefore the firm's activity not restricted by the lack of availability of capital from any type of source), the question from which of the possible sources the required amount of capital comes has an impact on the governance of the firm and local and regional development. A geographical perspective on the patterns of firm finance is therefore relevant not only to understand why the patterns look the way they do but also what further implications this has. This has also been the focus of geographically interested research so far, for various types of capital sources as set out above. It would be wrong to use a universalizing language, assuming financial processes unfold and work in the same way regardless of geography, while in reality this is not the case.

Another way of considering the potential implications of a firm being financed by certain sources of capital rather than others is the concept of financialisation widely discussed in the economic geography literature. Coined in the late 1990s (Engelen 2008), the concept was explored in a variety of cognate social sciences, focusing on complementary aspects of the phenomenon without any single, uncontested definition so far (e.g. Epstein 2005; French *et al.* 2011; Lapavitsas and Powell 2013).⁷ Lapavitsas (2011) recalls that the concept emerged

⁶ Lee and Brown (2016) provide further useful references on the pecking order theory including Frank and Goyal (2003)

⁷ Cf. also Andrew Sayer re: "chaotic conceptions" with many different approaches and roots as well as Ann Markusen's (2003) "Fuzzy concepts, scanty evidence, policy distance: the case for rigour and policy relevance in critical regional studies" claiming we should be "wary of 'fuzzy concepts' that are difficult to operationalise, measure or feed into policy" (Sturgeon *et al.* 2008: 318)

within Marxist political economy, and describes it as implying the decreased reliance of large corporations on banks, the shifting of banks' activities from lending towards mediating in financial markets and the increased involvement of households in financial operations. This relates to the "highly interconnected entanglement of geographies and finance" (Pani and Holman 2013: [19]). Despite the very large range of topics explored under the 'banner' of financialisation, it is striking to note that some areas remain much less explored. At the level of firms, notably, much of the work considering financialisation has focused on large multinational firms and only on the equity side of capital markets, i.e. on how these firms have their equity publicly traded and what effects this has through the concept of shareholder value and the metrics used to measure it. Although there has been very relevant work done in economic geography and regional studies focusing on the difficulties experienced by smaller and medium-sized firms in accessing capital (Pollard 2003; Appleyard 2013), the processes of capital provision at the level of SMEs generally and their implications through the debt side of the capital market have been much less explored to date and constitute a clear gap of the geographies of finance literature.

Among the questions to be considered when asking why firms finance themselves the way they do, the availability (or lack of availability) of certain form of finance as compared to other forms of finance (such as bank loans, state subsidies or internal capital) needs to be considered. The question needs to be considered both from the angle "does the firm have access to capital market finance" and from the angle "does the firm have access or difficulties in accessing other forms of finance". SMEs, for example, are traditionally thought to have difficulties in obtaining bank loans and may try to mitigate this through alternative sources such as community development finance institutions (sometimes benefiting from state guarantees) in the UK (Appleyard 2013) – it is questionable whether capital market finance as such can be considered as a practical (as well as affordable and reliable) alternative to bank finance for SMEs. Various theories will have various expectations about the potential or probable effects of financialisation on regional development. As a principle, it can be assumed that a direct or indirect connection with the capital market affects a firm's activity and development prospects, internal functioning and external relationships. Using examples given by Coe *et al.* (2013) and adding further points, such effects may include, for example,

- an increased focus on shareholder value as a tool of management;

- specific metrics used by capital market actors to assess the corporate performance of the firms they finance through equity or debt;
- the need to obtain ratings and credit scorings from rating agencies;
- the resulting necessity to adopt specific regulatory and accounting standards and transparency in publishing information;
- new organisational structures or management devices that may result from this;
- the access or non-access of the firm to certain markets;
- the firm's inclusion into or exclusion from certain production networks;
- outsourcing to other firms that are not subject to the same constraints (e.g. of collective pay agreements);
- a change in work conditions and labour management/employment relationships within the firm (Thompson 2013);
- "increasing externalisation of manufacturing activity, a focus on fewer high volume suppliers, and intensified auditing and monitoring of supply networks" (Coe *et al.* 2013 regarding Gibbon's (2002) study of the UK clothing sector) ; and
- restructurings, relocations, developments or closures/divestments at the level of the firm's production sites.

Embeddedness and its Implications on Firm Governance

Clark and Wójcik (2007: 31) provide a definition of corporate governance citing Shleifer and Vishny (1997: 738): "corporate governance deals with the ways in which suppliers of finance to (the) corporation assure themselves return on their investment" and the OECD (1999: 1): "a set of relationships between a company's board, its shareholders and other stakeholders", but an even more relevant definition of governance for the purpose of this study might be the 'authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain' (Gereffi 1994: 97). A distinction is made between 'closed governance' where ownership of the firm is concentrated in a small number of controlling owners and 'open governance' where ownership is dispersed and shareholders have an arm's length relationship with managers. While open governance is prevalent in the US and the UK, closed governance seems to be otherwise prevalent in Continental Europe. There is debate as to (i) whether there is a convergence with Continental Europe shifting towards open governance and (ii) what the perceived benefits of one model over the other

are (Clark and Wójcik 2007: 33). The literature also discusses the governance implications of publicly listing a firm's equity as including shareholder's rights and duties, takeover defences, disclosure and board structure and functioning (Clark and Wójcik 2007: 43). According to Zingales (2000), corporate governance is the study of the way firms are financed. Zingales (2000) argues that the nature of corporate governance is changing because the nature of the firms is changing, from the traditional, asset intensive and highly vertically integrated business corporation that emerged at the beginning of the twentieth century to more fluid and looser forms of cooperation (as evidenced in global production networks) which change the nature and form of corporate governance. This clearly evidences that the question through which sources a firm is financed (and what geographically relevant factors come into play here) directly impacts the way its governance is organised.

In the view of economic geographers, the potential implications on a firm's activity vary not only between equity, debt and own resources as discussed above: differences may for example also exist between different types of equity, i.e. different types of owners. There is a widely held view in the literature that the degree to which firm owners focus on short-term as opposed to long-term profitability of the firm depends at least partly on the owner's type and geographic origin. Equity invested through Anglo-Saxon capital markets, for instance, is considered as focusing on short-term results, while German investors are viewed as 'patient capital' (Dill *et al.* 2016). Recent research on German firms suggests indeed that foreign-owned firms are more likely to focus on short-term profits than domestic-owned firms and that, even more so, the probability of focus on short-term profit appears to increase with the physical distance between the firm and the owners (Dill *et al.* 2016). Assumed reasons therefore are (i) the information disadvantage faced by the foreign investors as to the local conditions of the firm and (ii) a potential connection to Anglo-Saxon capital markets (Dill *et al.* 2016). Potential implications of such a focus on short-term profit might be on human resources management, investment and R&D for example (Dill *et al.* 2016).

Particular attention has been given by economic geographers to the implications of capital (in particular but not only equity) raised through the capital markets on a firm's operation and development strategies, as a result of the specific expectations and perspectives of capital market actors (such as asset managers, equity analysts, institutional investors, rating agencies, the business press etc.) in terms of assessing a firm's operations. Empirical case studies

included, for example, the impact of investor relations (and in particular the relationship with equity analysts) on the international expansion (and divestment) strategies of a large retailer like Tesco (Wood *et al.* 2016) or the closure of an old brewery in Sunderland (Pike 2006). Recognising the importance of “understand[ing] firm finances [...] as integral to our understandings of firm behavior, governance and strategy” (Pollard 2003: 442), this is sometimes more broadly conceptualized as one of the many aspects of ‘financialisation’, here understood as “the growing influence of capital markets, their intermediaries, and processes in contemporary economic and political life” (Pike and Pollard 2010: 30).

Lee and Brown (2016) provide an excellent overview of debates and literature concerning geographies of finance and regional financing gaps. Much of the earlier work explicitly focusing on geographies of finance focused on the governance implications on large international firms of raising equity from institutional investors through global capital markets, i.e. focusing exclusively on firms that have their equity publicly traded (Clark and Wójcik 2007). Much of this focus was also on the equity side only, giving little attention to the debt side as a source of capital establishing a power relationship with a third party capital provider. Patterns of finance at the level of individual firms and their implications on local and regional development (which is the focus of this study) received less attention during that period although there already was beginning research on “the relationship between regional financial flows and regional industrial development” (Pollard 2003: 431) as well as regional financial markets and their implications in the provision of credit to firms (Dow 1992; Dow and Rodríguez-Fuentes 1997) (cf. also Boschma (2005) for further development on the importance of proximity, without however considering finance and credit directly).⁸

Research Gaps and Research Questions

This chapter has reviewed three separate yet related bodies of research to formulate a conceptual framework for this study: variegated capitalism, global production networks and geographies of firm finance. While all three areas provide significant insight to a better understanding of how firm finance unfolds in the context of firms that are embedded both in territories and in networks production, as is the case for car component manufactures in

⁸ Regarding cross-regional and cross-border corporate ownership in Europe and within Germany in particular, and the relevance of spatial proximity for corporate ownership cf. Wójcik 2002a and Wójcik 2002b as cited in (Clark and Wójcik 2007: 66)

Hungary and Eastern Germany, material gaps persist in all three areas, particularly in respect of the research topic of this study: the literature on varieties of capitalism and variegated capitalism yields significant insight into the reasons and effects why capitalism unfolds differently in different contexts, but it remains insufficiently developed particularly with regards to the variegations of capital prevalent in Central and Eastern Europe. The literature on global production network has made important contributions to better understanding the implications of firms being integrated in such global networks of production, particularly with regards to local and regional development, but it has to date only insufficiently taken into account the implications of finance in these networks and for these firms. Finally, geographies of finance is strong in identifying the difficulties (and resulting implications) of certain types of firms struggling to obtain certain types of capital, and the implications of firms using certain types of capital, but further research remains necessary to understand why certain types of firms use certain types of capital more than others, and what implications this has on their governance and on local and regional development. The following research questions therefore serve as guidance to the empirical part this study in respect of a sample of car component manufacturers in Hungary and Eastern Germany:

- What are the main sources of capital used by these firms and which structural patterns can be observed?
- How can these patterns be explained by geographical factors concerning both firms and capital providers, as well as their respective institutional context?
- What is the potential impact on the firms' governance and on local and regional development more broadly?

The overall objective of these questions is to critically explore and understand how geographical factors such as the embeddedness of firms within both regions and global production networks affects the way they source capital (and vice-versa) and the implications thereof on firm governance and local and regional development outcomes. The methodology chapter that follows explains how these questions are addressed empirically.

Chapter 3 Methodology

The conceptual framework of this study formulated through the literature review of Chapter 2 links theory on variegated capitalism, global production networks and geographies of firm finance and evidences gaps in current research regarding institutional infrastructures of capital provision in variegated capitalism and the role of finance in global production networks. The three research questions defined at the end of the preceding chapter serve as guidance of this study's empirical part to address these research gaps. In methodological terms, answering these research questions requires contextualised empirical research identifying in a first step which sources of capital car component manufacturers use in practice and establishing how patterns of capital sourcing differ between Hungary and Eastern Germany. This requires the collection and analysis of quantitative data for a sample of firms to identify which sources of capital they actually use and how patterns differ depending on the firm's typology and location, i.e. looking into the 'black-box' of firm finance (Pollard 2003) rather than simply making assumptions in this respect. In a second step, answering the research questions requires an understanding of reasons why firms use capital in the way they do and implications thereof on their governance and local and regional development. This requires the collection of qualitative data to contextualise and help interpret, 'make sense of' the quantitative data collected.

The methodological needs of this study thus identified, this chapters presents the methodological approach used to address the research questions. It is organised in three sections: after presentation of the research design, methodological approach and its justification and the sample of firms studied (3.1), the second section sets out how relevant quantitative and qualitative data was collected and analysed (3.2). The third section discusses reflexivity issues and research ethics (3.3).

3.1 Methodological Approach and Research Design

Among the large range of quantitative and qualitative methodologies available to the academic researcher and customarily used in economic geography, this study uses a mixed quantitative-qualitative methods approach and a comparative study to answer the research questions.

3.1.1 Research Design

Once the conceptual framework and research questions were identified, the empirical research was structured in three phases as follows:

Phase	Stage of Research
Phase I	Preparation of empirical research <ul style="list-style-type: none"> • Formulation of methodological approach (Section 3.1.2) • Selection and justification of research subjects (Section 3.1.3)
Phase II	Data collection <ul style="list-style-type: none"> • Quantitative data collection (Section 3.2.1) • Qualitative data collection (Section 3.2.2)
Phase III	Data analysis (Section 3.2.3) <ul style="list-style-type: none"> • Quantitative data analysis • Qualitative data analysis

Figure 9 Research design

Source: author

In a first phase, the empirical research was prepared through identification of an appropriate methodological approach, among the range of methodological approaches available to the researcher in economic geography. Given the characteristics of the research topic at hand, it was determined that a mixed methods approach and a comparative study would be the most appropriate, as discussed in more detail in Section 3.1.2. This phase also comprised the identification and selection of an appropriate research subject among the range of possible types of industries, global production networks and regions in which patterns of capital sourcing as well as their reasons and implications could be studied. For the reasons developed further in Section 3.1.3, the choice was made to study the capital sources of a sample of car component manufacturers in Hungary and Eastern Germany.

Once the methodological approach confirmed and the research subjects selected, the second stage of the research consisted in the collection of quantitative and qualitative empirical data to constitute a database containing firm-level data on the firms' size, location, ownership and capital sources. Please refer to Section 3.2.1 for a more detailed discussion of how this was undertaken. As a complement to the collection of quantitative data, qualitative data was collected as further discussed in Section 3.2.2. In the third and last stage of the research, the quantitative data collected was analysed and contextualised with the help of qualitative data

collected, as discussed in more detail in Section 3.2.3. The overall methodological framework eventually retained for the empirical research can thus be summarised as follows:

Methodology Component	Methodological Approach		
Research Background	Variegated capitalism	Global production networks	Geographies of firm finance
Theoretical Framework	Variegated firm finance and global production networks		
Case Studies	Car component manufacturers in Hungary and Eastern Germany		
Units of Analysis	Firms and their capital providers (shareholders, banks, capital markets)		
Geography	Hungary and Eastern Germany		
Study Focus	Institutional infrastructures of capital provision	Ownership relations between GPN firms	Capital sources used by GPN firms
Method of Analysis	Qualitative Analysis	Quantitative/Qualitative Analysis	Quantitative Analysis
Method of Research	Step 1: database analysis of primary quantitative data Step 2: qualitative analysis of secondary data		

Figure 10 Methodological framework

Source: author, following a scheme proposed by Thrower (2018)

3.1.2 Justification of Methodological Approach

In contrast to other academic disciplines (including in the social sciences), economic geography is characterised by a strong pluralism in methodological approaches, even between and within closely related strands of research (Pike *et al.* 2016). While concerns have been expressed for more rigour and dialogue about the relationships between different methodological approaches and between theory, concepts and methods, there is a growing consensus in certain sub-disciplines in favour of plural methodologies in order better to engage with complexity and evolution in the research subject (Pike *et al.* 2016). More specifically, it is increasingly being recognised that quantitative and qualitative approaches (which often coexist in more or less explicit opposition on related research topics) are not necessarily exclusive of each other but can in certain contexts be usefully combined (cf. references in Pike *et al.* (2016) and in Barnes *et al.* (2007)). While quantitative approaches are strong in “tightly defining conceptual categories; specifying and theorising their relationships; articulating and testing formal hypotheses; developing robust methods, research designs and data sources; and, measuring and mapping the incidence of associations, patterns and

regularities of [...] change across space and time”, they tend to be weak on “identifying appropriate proxy indicators for fuzzier but important concepts [...]; inter-relating its different levels of analysis; contextualising its studies in their economic, social, political and institutional settings; securing required levels of availability and comparability of data across space and especially time for historical and longitudinal analyses; establishing the extent and nature of causation amidst association and correlation; and, drawing out its implications for policy” (Pike *et al.* 2016: 133). Qualitative approaches, by contrast, are able to work with “looser and less tightly defined concepts, undertake[...] comparative analysis between different geographical settings, provide[...] rich empirical studies capturing the diversity, variety and heterogeneity of [...] change, and [...] identify explanatory causal relations, mechanisms and processes”, but they are weaker on “translating qualitative data into consistent categories to enable systematic comparison and analysis across time and space, rigorously interrogating empirical findings beyond compare and contrast frameworks, developing a cumulative, robust and credible body of knowledge, and engaging with public policy” (Pike *et al.* 2016: 133). Combining a quantitative with a qualitative approach therefore yields the potential to gain in explanatory power on a given research object.

While most GPN-related research in the past focused on qualitative methods with much insight (Coe 2012), a mixed methods approach combining quantitative and qualitative data collection and interpretation methods appears as the most appropriate for this study given the nature of the research questions. Similar to the approach taken by critical accounting (Froud *et al.* 2006) for example, there is potential purchase in “integrating quantitative analyses of indicators with qualitative interpretation of their discursive interpretation and articulation by actors” (Pike *et al.* 2016: 134). By combining a quantitative research method with a qualitative research method, this project uses “between-method triangulation” (Denzin 1970; Wood *et al.* 2016) to mitigate the limits of a single-method approach and gain explanatory power in exploring which factors influence the capital sources of firms and what impact this may have on the firms’ governance and local and regional development. Answering the research questions formulated with this approach in mind requires in a first step the collection and analysis of empirical data about the capital sources of a sample of firms, and in a second step its contextualisation, interpretation and explanation to understand potential reasons and implications of patterns identified. In this study, the collection and

analysis of quantitative data, mainly from publicly available annual statements, is combined with a qualitative analysis in the form of secondary qualitative data. While the quantitative data helps identify patterns of firm finance across the sector, the qualitative analysis helps shed light as to the potential reasons and implications of the patterns identified.

The collection of empirical quantitative data about capital sources of a sample of firms could in principle be done by asking firms to provide this information via questionnaires or interviews. Questionnaires however are known to have very low response rates, and interviews would reach only a small number of firms. In addition, this approach was already retained usefully and insightfully by others (cf. e.g. Bečicová and Blažek (2015) on firms in the Czech periphery applying for bank loans). An alternative approach could be to use public databases such as Echo or Amadeus, but the limitation here is that data is imposed in pre-defined categories and aggregated, with a limited possibility for the researcher to analyse and put it into perspective with other variables such as the firms' location, size or ownership. Furthermore, some of these databases are available only for very large firms or for a limited typology of firms. Neither of these two approaches was therefore retained for this study. The alternative approach retained instead for the collection of quantitative data is based on the fact that firms in both Hungary and Germany are legally obliged to publish online their annual statements every year, and these documents contain a detailed breakdown of the capital sources used by the firm. The firm's annual statements therefore constitute a data source which is systematically publicly available, at no cost, and enables the identification of the financing sources used (and other relevant economic and financial firm-level information) by every firm in any given year. It should be noted that non-public/confidential information is deliberately and explicitly excluded from this study given the sensitivity of financial information for firms: such confidential information could neither be accessed nor used within the scope of this research project. Given the limitations of the other approaches mentioned above and the availability of annual statements, it was therefore decided to construct a unique dataset using the annual statements for a group of car component manufacturers in the two regions studied. This enabled a firm-level analysis of capital sources and identification of patterns using further variables collected at firm level such as their location, size and ownership. The key benefit of this approach is that it allowed the identification of actual financing patterns of a group of firms and to work with these concrete findings, rather than

having to 'assume' how the firms are financed inside the 'black-box' (Pollard 2003): this constitutes the main strength of the methodological approach retained for this study and a major innovation compared to previous work undertaken in this field.

The quantitative work alone however would be insufficient to answer the research questions and uncover underlying relationships and causalities, as would be possible by the qualitative in-depth studies that traditionally constitute the strength of economic geography (Pike *et al.* 2016). The quantitative approach of this study therefore needed to be complemented by qualitative work helping to explain (rather than merely describing) the financing patterns observed. It is indeed essential to both describe and explain: simply describing without explanation is unsatisfactory. But by the same account, attempting to explain why things are without previously describing how they are is unsatisfactory as well as it risks remaining theoretical and normative (based on an assumption of how things are, might be or should be) rather than truly explanatory (based on a close look at how they actually are). Semi-structured corporate interviews would have been the ideal solution to discuss the statistical findings from the quantitative data collection with representatives of the analysed firms to understand why the firms finance their activities the way they do in the light of their specific characteristics and situations, and how they view the advantages and disadvantages of different capital sources. These interviews would have "provide[d] a qualitative context that amplifies and enriches the meanings derived from [the quantitative data collected]" (Schoenberger 1991: 181). The quantitative findings would have guided the conduct of the interviews, and the interviews' findings could illustrate, further explore, explain or potentially question the statistical findings. While such semi-structured interviews constituted the initial plan in terms of qualitative data collection, it appeared however during the study that they were not practicable for reasons further developed below, and qualitative data was instead gathered through secondary sources.

3.1.3 Selection and Justification of Research Subjects

The diversity, differentiation and heterogeneity of situations in the economic landscape calls for comparative case studies allowing to corroborate, triangulate and interrogate data across different contexts, to enhance insight and to challenge conceptual frameworks in their rigour and robustness (Pike *et al.* 2016). Such a comparative approach was also retained for this

study. In order to select an appropriate group of firms to be analysed, the following selection process was applied:

Scope	Criteria and Justification	Selection
Geography	<p>Criteria: two regions which share a common post-socialist past but have gone through different paths since</p> <p>Justification: provides scope for an analysis considering variegations of capital among regions with a common past</p>	Hungary and Eastern Germany
Industry	<p>Criteria: a capital intensive sector with certain firms being large international firms</p> <p>Justification: increases the likelihood that firms use different forms of external capital, thereby allowing the analysis of diverse capital sources</p>	Car component manufacturing
Firms	<p>Criteria: a sample of small, medium-sized and large firms representing a range of different ownership forms</p> <p>Justification: provides scope to analyse how capital sourcing differs between firms based on their size, location and ownership.</p>	160 Hungarian and 160 Eastern German car component manufacturers selected among two relevant associations of car component manufacturers

Figure 11 Selection of empirical research subjects

Source: author

Selection of the Case Study Regions and Justification of Comparative Approach

Given that one aim of this study is to assess how post-socialist contexts in Central and Eastern Europe illustrate specific forms of variegated patterns of capital sourcing by firms integrated in global production networks, the study analyses the financing patterns of car component manufacturers in two different regions of Central and Eastern Europe, each with its own historical, political, economic and social contexts. One of these regions is Eastern Germany, because it presents a unique case where a region formerly part of one (state-socialist) variety of capitalism was almost ‘overnight’ absorbed into another (capitalist) variety of capitalism, by being absorbed by the German Federal Republic with its fully fledged capitalist legal and socio-institutional environment and by becoming part of the European Union (then still the EC) as early as 1990. It could therefore be expected that an analysis of firms in Eastern Germany would yield interesting findings as to how such absorption influenced the capital sourcing for local firms integrated in global production networks, with one complementary question being whether the transition from Rhinish to Anglo-Saxon Capitalism is being

accelerated by what happened in the New Länder after the reunification. The other region retained is Hungary, because this country switched from state-socialism to capitalism in 1990, but joined the EU only in May 2004. In the 15 years between these dates, Hungary experienced and experimented its own transition of systems and therefore had a different path evolution than Eastern Germany. It therefore represents an interestingly contrasting case when compared with Eastern Germany. A relevant question here was whether transition economies, as they were moving toward a market system, have been more susceptible, or less, to financialisation and global changes in capital sourcing mechanisms.

By studying different types of car component manufacturers across two regions, the project also uses “within-method triangulation” (Denzin 1970; Wood *et al.* 2016) to gain comparative power by contrasting feedback from different types of firms in different locations. Using different types of firms also allows to explore “variegated governance effects of relationships with finance providers [...] across organisations with different ownership structures” as called for by Wood *et al.* (2016: 24). For a justification of and a call for stronger comparative methods, cf. Pike *et al.* (2015), Barnes *et al.* (2007) or Gertler (2010) as well as Pike *et al.* (2015: 189) citing Farole *et al.* (2011: 60) according to whom “work in economic geography has been strong on explaining and documenting ‘complexity, context and difference’ but weaker in specifying more generalised analytical and explanatory frameworks applicable to different geographical contexts internationally, identifying consistent and comparable conceptual and analytical categories, analysing larger empirical samples, and systematising and generalising its findings”. The analysis of a comparatively larger group of firms in this study (which could in principle be extended following the same approach to other sectors and regions) aims to respond to this call.

Selection of the Group of Firms

Once the methodological approach formulated and the decision made to analyse the capital sources of a sample of car component manufacturers in Hungary and Eastern Germany, it was necessary to identify the concrete list of firms to be analysed. In theory, the eligible group of firms included all those firms that operate car component production sites in Hungary and Eastern Germany, whether their headquarters are also located in these regions or elsewhere. By the nature of their activity, these firms are an integral part of global production networks: some of these firms are owned by larger firms in the same industry (one form of integration

in global production networks) but all depend on other suppliers or on final assemblers as their main, and sometimes exclusive, clients (another form of integration in global production networks). Capitalistic relationships and dependencies exist between these firms and other institutions and the analysis of economic and financial information at the level of such interconnected firms can help answer the research questions of this study. In practice however, it was neither feasible (as no official list exists identifying which firms are part of this industry) nor necessary to collect firm-level data for all these firms within the scope of this research project. The study therefore focused on a limited but diversified sample of interconnected firms within the industry to assess how the location, size and ownership relationships of a firm within a global production network influence its capital sources and vice versa. The sources available to establish a list of firms to analyse were the member's list of various professional associations. The decision of a firm to become a member in one and/or another of the existing professional organisations relevant for a car supplier may reflect how it positions itself in the industry, what types of relationships it wishes to emphasise and how it wants to communicate about itself to clients and competitors. Some professional associations have a local emphasis (expressing the "localness" of its members and its relations with local actors) while others may have a more international aspiration. Some organisations are dedicated to Tier-2 and Tier-3 suppliers (i.e. explicitly not including the larger and more powerful firms of the industry), while others involve firms from 'across the global production network' with both OEMs and all tiers of suppliers.

Among the listings available to identify car component manufacturers in Eastern Germany, the website www.automotive-index.com lists over 1,300 automotive suppliers in Germany, a number relatively close to the aggregate number of about 1,340 firms indicated by Eurostat for C29.3 companies (manufacturing of parts and accessories for motor vehicles). The member list of the German association of the car industry (*Verband der Automobilindustrie*, "VdA") on the VdA's website appeared incomplete as it includes only 600 members. Neither of these lists provides a geographical breakdown between Eastern and Western Germany so it would have been necessary to check for each potential candidate whether it is based in or has a production site in Eastern Germany. A third source therefore appeared more useful to identify Eastern German firms for this study: the association of Eastern German car component manufacturers ACOD (Automotive Cluster Ostdeutschland GmbH, www.acod.de). ACOD

define themselves as an association of “active automobile manufacturers, suppliers, service providers, research institutes, associations and other institutions in the five East German States” and provide a publicly available list of 281 members at the time it was retrieved for this study. Some of these firms are also a member of regional organisations such as the association of Thuringian automotive suppliers (*automotive thüringen e.V. “at”*) dedicated to suppliers from only one of the five East German Länder.

The website www.automotive-index.com also lists about 112 Hungarian firms, which is only a third of the about 340 listed in the C29.3 category according to Eurostat - likely missing mainly the small ones that employ less than 10 people. Another source for Hungarian firms is AHAI, the Association of the Hungarian Automotive Industry (www.gepjarmuipar.hu) with a list of 35 members, representing only the large and medium-sized automotive companies in Hungary including the 4 OEMs, and only 24 large Tier-1 and Tier-2 suppliers. As the purpose of this study is to focus not only on the large firms but also on the small and medium-sized ones, these sources were not suitable to select the Hungarian firm sample. By contrast, the association of Hungarian automotive component manufacturers Majosz (Magyar Járműalkatrészgyártók Országos Egyesülete, www.majosz.hu) provides a nominative list of 211 members based in Hungary, which appears suitable for the purpose of this study. Majosz seems to be dedicated to Hungarian Tier-2 and Tier-3 companies, not including the larger Tier-1 companies and OEMs. This seems to be confirmed by the fact that only two of these firms are also a member of the Association of the Hungarian Automotive Industry (“AHAI”, or *Magyar Gépjárműipari Szövetség*, “MGSZ” in Hungarian). The 35 members of AHAI include all 4 OEMs that are active in Hungary as well as some of the largest Hungarian Tier-1 and Tier-2 suppliers.

A nominative list of car supplier firms in Hungary and Eastern Germany was thus constituted by using the membership lists of ACOD for Eastern Germany and Majosz for Hungary. The sample of firms analysed in this study thereby consisted in a ‘self-selecting’ group of almost 500 potentially relevant Hungarian and East German car supplier firms. Out of these 500 candidates, data was collected for about 160 Hungarian (i.e. about 80% of the sample) and 160 German firms (about 56% of the sample) in both cases randomly selected out of the total pool, including firms of all sizes (small, medium-sized and large) and ownership types (local individuals, local corporates or foreign corporates).

3.2 Data Collection and Analysis

The collection and analysis of both quantitative and qualitative data as the constituent empirical parts of this study's mixed methods approach are described in more detail in this section.

3.2.1 Collection of Quantitative Data

The core of the quantitative data used in this study consists in firm-level economic and financial firm-level information, i.e. a form of (pre)constructed data from non-official sources (cf. Cloke *et al.* (2004), chapter 3). This section presents the scope and type of quantitative data that was collected and compiled into a single database.

Data Sources

For each firm analysed, the same publicly available documents providing economic and financial firm-level information were collected. The main type of document collected (and the most systematically available and standardized as far as its content is concerned) are the firms' annual statements (a source usefully used in a slightly different Czech context by Rugraff (2013) for example) and official commercial registers, both a crucial source of information providing a large amount of useful relevant data. Annual statements were collected for about 160 Hungarian firms and 160 Eastern German firms for the years 2016 or 2017. There is some difference between Hungary and Germany in the way information is presented in the annual statements (and care was given to identify and take into account these differences when comparing data between the two countries). While these documents have their limits because of the way some of the information is presented or is missing (according to applicable accounting rules), they do enable significant analysis.

The access and collection of annual statements was relatively straightforward once a firm's name was identified: firms registered in both Hungary and Germany have a legal obligation to publish their annual statements every year, and these are accessible publicly and free of charge online. For Germany, the website www.unternehmensregister.de (available in German and in English) provides not only access to the complete annual statements of all firms (in German only), in most cases for every year since 2006 but also to the commercial register (also in German only) with useful corporate information (either free of charge or for an administrative fee of a few euros per document). This information includes the official

identification number of the firm, registered address, date of incorporation (or of its privatization in the early 1990s), legal form (GmbH, AG etc., indicating the way the equity is contributed and traded between shareholders), shareholders names both current and previous, showing whether a firm is owned by a family or by another GPN firm, by private equity investors, when it changed hands (unless it is a joint stock company and the equity traded on the stock market) and sometimes the address of branches, i.e. of production sites. The exploitation of these documents was not problematic as the author speaks German fluently.

For Hungary, the websites www.e-beszamolo.kim.gov.hu and www.e-cegjegyzek.hu (both available in Hungarian only) provide the equivalent access free of charge for all Hungarian firms and for years in some cases ranging back as far as 2001. Another official website⁹ provides company information for a fee of about 50 HUF (i.e. 0.16 EUR) per company, but it did not appear that this site would contain any useful information in addition to the one that could be accessed free of charge through the other websites and this site was therefore not used. The documents that can be downloaded from these websites were in each case only in Hungarian (i.e. no English version available). Although the author speaks Hungarian only to a limited extent, the balance sheet (*mérleg*) and the profit and loss statement (*eredménykimutatás*) were easily manageable as their form and content is rigorously standardized and the vocabulary used therefore very limited. The appendix to these documents (*kiegészítő melléglek*) which provides further useful information was a bit more challenging because its form is less standardized and they tend to comprise more text. However, the issues dealt with in the appendices are relatively recurrent between one firm and another so the exploitation of the information required for the purpose of this study was manageable.

The use of further sources of quantitative data such as corporate databases and official firm level statistical data (such as used insightfully by Pavlínek and Ženka (2011) for example with respect to Czech car component manufacturers) was originally considered but finally not retained because either unavailable for the geographies or data types required for this study or not practicable (e.g. because being too costly). Commercially operated corporate databases

⁹ www.ceginformacioszolgalat.kormany.hu

such as Orbis, Amadeus (used by Rugraff (2013) for example), Thomson Reuters, Centre for Management Buy-Out Research database, Datastream or Dun & Bradstreet could contain further potentially useful firm-level information but the very high cost of full access and use of these databases (which can only be assumed by commercial firms doing this for business purposes) proved blocking for a research project like this one. It also appeared as not necessary as the data publicly available in the form of annual statements and commercial register extracts provided sufficient quantitative information for this study.

Data Collected

Out of the range of data available in the firms' annual statements and commercial register extracts, including a detailed account of the firm's assets and liabilities as well as further information, only a limited number of variables was collected. These include (i) the context variables firm size, location and ownership type and (ii) financial indicators consisting in the main capital sources present in the firm (equity, debt or retained earnings).

In terms of context variables, the firms' size was systematically assessed. According to official EU classification and German accounting rules, firms are usually categorised into small, medium-sized and large firms based on the size of their balance sheet, their annual turnover and their number of employees. In Germany, paragraphs 267 and 267a of the Code of Commerce (*Handelsgesetzbuch*, HGB) determine the size of German firms as follows:

Size Category	Balance Sheet (Euro)	Annual Turnover (Euro)	Average Employees
Micro	Up to 0.35 million	Up to 0.70 million	Up to 10
Small	Up to 4.84 million	Up to 9.68 million	Up to 50
Medium	Up to 19.25 million	Up to 38.50 million	Up to 250
Large	Over 19.25 million	Over 38.50 million	Over 250

Figure 12 German firm size categories according to HGB

Source: §§ 267 and 267a of HGB

A firm falls into a size category if it fulfils at least two of the three conditions. The impact of this classification is directly relevant for this study: the degree of detail in which German firms are legally required to publish their financial statements depends on their size. Micro and small firms, for example, publish a simplified balance sheet and are required to provide neither a profit & loss statement (with annual turnover etc.) nor the further specifications (with the

number of employees etc.). While there is no formal definition of the term ‘*Mittelstand*’ often used in the context of German firms, this roughly corresponds to small and medium-sized firms that are owned by German families (i.e. with an ownership that is both domestic and individual). At EU level, the Commission’s recommendation N°2003/361/EC of 6 May 2003 provides a classification using the same criteria but different thresholds:

Size Category	Balance Sheet (Euro)	Annual Turnover (Euro)	Average Employees
Micro	Up to 2 million	Up to 2 million	Up to 10
Small	Up to 10 million	Up to 10 million	Up to 50
Medium	Up to 43 million	Up to 50 million	Up to 250
Large	Over 43 million	Over 50 million	Over 250

Figure 13 EU firm size categories

Source: Recommendation N° 2003/361/EC of 6 May 2003

The EU definition is slightly less restrictive than the German one, meaning that some of the firms categorized as ‘medium-sized’ in Germany still qualify as ‘small’ by EU standards etc. The widely-used concept of small- and medium-sized enterprises (“SMEs”) encompasses the micro, small and medium categories of the table above. A simplified approach was retained for this study using only the size of the balance sheet and firms were classified on this basis into small firms (balance sheet less than 5 million euro), medium-sized (between 5 and 20 million euro) and large firms (over 20 million euro). These thresholds are based on German accounting rules as they determine the degree of detail German firms must state in their annual statements. Note that the exercise was done for the Hungarian firms according to same principle as the German firms, i.e. according to the balance sheet size thresholds of the German classification rules to maintain a coherent approach between the two regions.

Among the issues encountered when collecting these documents were the following:

- Some firms do not publish their annual statements. While it is possible that some refrain from publishing them in spite of their legal obligation to do so (cf. also the absence of ownership information for a number of firms mentioned below), the more typical case is the one of firms that are part of a group: under certain circumstances, these subsidiaries are exempted from publishing their annual statements if the group’s

holding firm publishes a group statement encompassing the assets and results of the subsidiary.

- Some firms publish their balance sheet but provide neither a profit and loss statement nor further specifications. As a result, the size of their balance sheet could be identified but neither their turnover nor their number of employees. This is fully explained by the fact that micro and small firms do not have the obligation to publish profit and loss statements and further specifications (and therefore in general do not publish them). All sample firms in this case have a balance sheet of less than EUR 4.84 million, which confirms they are micro or small firms to be categorized as such. This is the main reason why the size categorisation was done exclusively based on the firms' balance sheet size.

The second context variable collected was the firms' location, assessed as the place where the firm's headquarters (in most cases identical to the location of the firm's only production site) are located. To obtain a coherent and robust data set regarding the firms' locations, addresses of the firms' headquarters were in a first stage identified through official sources. The documents used to collect the address of each firm's headquarters are for German firms the official commercial register extract (*Handelsregisterauszug*) available for an administrative fee of 4.50 euros per document from the German company register's website (www.unternehmensregister.de) and for the Hungarian firms the appendix to the annual statement (*kiegészítő melléklet*) available (for free) on the Hungarian company register's website (<http://e-beszamolo.kim.gov.hu/kereses>). Once the addresses were collected for each firm, first a high-level analysis was performed based on NUTS1 categories using Eurostat's correspondence table between post codes and NUTS regions, and then the full addresses were converted into GPS coordinates using an online geo-locator tool to enable analysis of their locations more precisely including production of maps through the GIS-tool ArcMap. This enabled analysis of patterns both in absolute terms (country, region etc.) and in relative terms (in the centre or periphery relative to hubs and clusters of capital provision, car component manufacturing and car assembly) across regions and regional clusters. The relevance of this aspect when looking at patterns of financing relates to the question whether geographical location (near or far from major cities and financial centres, in prosperous or poor regions etc.) plays an identifiable role in the way firms access capital and the conditions

under which they access it. One question, for example, is whether or not an increased distance to prosperous regions and financial centres means that it may be more difficult and/or more costly for a firm to access capital for investments. Addresses of the firm's production sites (if different from the headquarters) were not collected, both because there seems to be a divergence only in very few cases and because this type of information is not systematically contained in the type of documents collected for this study.

The third and last context variable assessed was the firm's ownership (as one key form of integration of a firm into a global production network when it is corporately owned, alongside the other key form of integration which is the customer-supplier relationship): individual/family-owned or corporate (as a subsidiary of another GPN firm), and in either case domestic or foreign, or owned by private equity investors or having its stock traded on the stock market. This is relevant for questions such as whether it is more difficult and more expensive for firms that are family owned to access capital than for firms that are owned by other firms (in particular regarding equity), or whether firms that are family owned are exposed to less pressure to generate and distribute dividends to shareholders (and more generally to generate 'shareholder value') and can therefore more easily retain and reinvest profits made. The distinction between the forms of ownership is not always self-evident or clear-cut, such as when founding families hold significant portions of shares of a firm traded on the stock market (as is the case of the controlling share in VW and Porsche held by the Piëch and Porsche families, for example) or when industrial firms hold shares in other firms as part of their 'financialisation strategy' rather than as part of a strategy of production chain integration. These 'grey zone examples', however, are relatively marginal and the distinction seemed clear in an overwhelming majority of the firms analysed as part of this study. It was possible to identify the firms' owners (and in most cases also their respective share in the ownership) for most but not all of the firms in the sample. The identity of the owners of a German firm is generally disclosed in the list of shareholders (*Liste der Gesellschafter*), a document that firms are normally required to submit to the company register (*Unternehmensregister*) and that can be downloaded from that register's website (www.unternehmensregister.de) for an administrative fee of 1.50 euros per document. Unfortunately, this does not seem to be done by firms systematically and it was not possible to gather ownership information for 44 (28%) out of the 157 German firms of the sample. The

identity of the owners of a Hungarian firm is almost systematically disclosed in the appendix to the annual statement (*kiegészítő melléklet*), which can be downloaded for free from the Hungarian electronic company register (www.e-beszamolo.kim.gov.hu). Only 17 (10%) out of the 164 Hungarian sample firms did not disclose their ownership. When available, the ownership of each firm was categorised according to their type and location as follows:

- **Individual:** many firms are owned directly, either wholly or partly, by one or by several individuals. These are generally either the founder(s) of the firm or their heirs, often still strongly involved in the daily management of the firm (e.g. by also acting as CEO or directors of the firm). In some cases, they have delegated the daily management to appointed third parties and only intervene for certain strategic decisions (which may include the decision to use certain forms or financing rather than others, or the dividend distribution policy).
- **Corporate:** in many other cases, the direct owners of a firm are not individuals but firms. Here it would be relevant to distinguish between those firms that are 'substantive firms' (with an economic activity, employees, customers etc. of their own) and those that are 'shell firms' (whose sole activity consists in owning the firm on behalf of another, ultimate, shareholder). The substantive firms are often larger GPN firms having created or purchased the firm as a subsidiary for expansion into a new market. Many shell firms are owned by individuals (such as the founding/managing family of the underlying firm) while others are owned by other GPN firms. In both cases, the existence of the shell firm is likely to have regulatory reasons but no economic relevance on its own. Consequently, the shell firm should be in principle be disregarded in the analysis and the relevant firm considered to be owned by the underlying individuals or GPN firms, depending on the case at hand. This distinction was however not made within the scope of this study and remains to be done by future research.
- **Public:** some (very rare) firms are owned by a public entity (state, region or municipality). This is a fundamental change to 25 years ago, when virtually all firms in Eastern Germany and in Hungary were owned by the state.

In terms of location, distinction was made only between domestic and foreign ownership, without considering the exact location (city, region etc.):

- **Domestic:** when the individual or corporate owning the firm has a registered address in the same country as the firm, ownership was considered to be 'domestic'. No distinction was made between Western and Eastern Germany (so ownership of an East German firm by a West German firm or individual was considered to be 'domestic'), although it would be interesting to introduce this distinction to evidence capital from the 'West' invested in what used to be regions of the formerly state-socialist East.
- **Foreign:** all other cases are considered 'foreign ownership'. Here it is interesting to look at in which country exactly the owning entity is located, as this already hints at whether the firm is a substantive firm or a shell firm: while firms in the USA, the UK, France, Germany etc. (i.e. countries with a strong automotive industry) are likely to be substantive firms, firms incorporated in Cyprus, Switzerland, the Cayman Islands etc. (in short: countries that are known less for their automotive industry than for their advantageous regulatory systems) are much more likely to be shell firms.

The firm-owned firms' ultimate ownership was not determined but it might be interesting to do so in follow-up research by taking a closer look at the corporate owners and their own shareholders: this may lead to reallocate some firms between categories and increase the relevance of the ownership information given that what matters is not who technically/legally owns the firm, but rather who economically owns it (and can therefore impose strategic decisions regarding financing, capital sourcing and dividend distribution). It is the economic ownership that may have an impact on the financing patterns of a firms and its potential implication into circuits of financialisation.

Other types of relationship (e.g. of debtor/creditor or supplier/client) were not to possible to be identified on a systematic basis. On the customer/supplier side, questions that could have been explored include the extent to which firms that are dependent on a single client/off-taker have different capital sourcing behaviours than those who have a diversified client base, and whether those that have a single client are supported by that client in raising the capital needed for investments (e.g. through corporate guarantees). Further context criteria such as the corporate structure (with simple or multiple locations) of the firms, their activity (including their tier position) or history (foundation prior or after 1989, by local individuals or by foreign corporates) were not considered explicitly for practical reasons, although they would be of relevance for future research. The firm's activity and position within the GPN (i.e. its functional

location within the global production networks and its tier positioning) in particular has been evaluated in GPN and GVC research on the automobile industry before, cf. Pavlínek and Ženka (2011), but it was not possible to conduct this on a systematic basis within the scope of this study (except when it corresponds to ownership, i.e. one firm being owned by another). This 'functional location' aspect is important and would enable questions such as whether firms at certain positions within the production process and within a global production network (with the power relationships that this implies) have easier and cheaper access to capital. Similar to Pavlínek and Ženka (2011), trends for industrial upgrading (as a means to assess regional development prospects) could be assessed considering primary indicators such as turnover per employee, factor productivity, wages and salaries per employee and R&D intensity and secondary indicators such as capital intensity, value added in production, labour productivity, capital productivity and R&D employment, but this was beyond the scope of this study and remains to be done by future research. Another question could be whether firms can impose certain financing terms on lower-tier GPN firms (such as relatively delayed payment terms for the goods delivered) and thereby reduce their own need for working capital by increasing the need for working capital within the lower-tier firms (which must then find a way to raise that capital for the interim period in which they have delivered the good but have not yet been paid). This however was not covered within the scope of this study and remains an area to be covered by future research.

Once the context variables collected for a firm from the commercial register extract, the annual statement was used to identify the sources of capital present. Capital sources were considered as follows:

- capital contributed by shareholders (directly or through the capital market)
- reserves accumulated (through retention of profits from earlier periods)
- provisions (for pensions, taxes etc.)
- bonds (liabilities to investors that are neither shareholders nor banks)
- amounts owed to credit institutions (bank loans)
- amounts owed to affiliated companies (intra-group loans with other GPN firms)
- trade payables (including debt to suppliers, i.e. to the smaller GPN firms)

Each of these elements was assessed not in absolute terms, but rather as a percentage of the total balance sheet, thereby eliminating the problem of nominal and real values for change

over time as well as the problem of exchange rates between currencies (Euro in Germany and Forint in Hungary). It should be noted that for this study, funds contributed by the owning firm were considered as 'equity' regardless whether contributed in the legal form of equity or (as often the case) as shareholder loans. While the distinction between equity and shareholder loans is relevant for accounting, tax and regulatory reasons, the aggregation of the two seems more relevant for this study as the focus here is on the relationship between capital providers and capital users. It is therefore more relevant to consider who contributes the capital (exercising control and influence over the firm) rather than the legal form of its contribution.

The firm-level data thus collected was compiled into a single database to enable a systematic analysis. The database was compiled in the form of an Excel file and contains the same type of individual data elements for each firm of the sample. Each data point is associated to a specific firm and to a specific year (usually 2016 or 2017) so that structures can be analysed in a meaningful manner across firm categories. Given the large number of data points compiled, doing this fully manually (i.e. copying each figure individually from the relevant source and into the relevant place in the database) would have been tedious, time-consuming and prone to errors of manual recopying. Therefore, the compilation process was automatized to the largest extent possible by using macros written in VBA and AppleScript code searching for the relevant data in the source documents (generally in PDF format) and copying them into the relevant place in the Excel database. An important aspect of this process was to make sure no errors occur through the automatic compilation: this was done through (i) automatic sanity-checks (for example calculating whether the sum of individual balance sheet items matches with aggregate balance sheet size) and (ii) manual sanity checks (comparing randomly selected data points between the database and the source document).

Legal form of the firms

One complementary data element collected for all firms in the sample is their legal form. A vast majority of the firms is incorporated as the German or Hungarian equivalent of a private company limited by shares ("**Ltd.**"): 203 (or 70%) of the German firms are organized as a *Gesellschaft mit beschränkter Haftung* ("**GmbH**"); 169 (or 81%) of the Hungarian firms are organized as a *korlátolt felelősségű társaság* ("**Kft**"). In comparison, the other two main forms of incorporation are much less common in the sample but still represent a certain proportion of it: 34 (or 12%) of the German firms are a *Kommanditgesellschaft* ("**KG**") and 8 (or 4%) of

the Hungarian firms are a *betéti társaság* (“**Bt**”), which are both the equivalent of a limited partnership (“**LP**”) with at least one shareholder with unlimited liability. However, all German KGs are in fact “GmbH & Co. KGs”, where the unlimited partner is not a private person but a GmbH. As a result, they closely resemble a GmbH in terms of shareholder liability and governance control. Only 16 (or 6%) of the German firms are an *Aktiengesellschaft* (“**AG**”) and 20 (or 10%) of the Hungarian firms are a *részvénytársaság* (“**Rt**”), i.e. the equivalent of a public company limited by shares (“**plc**”). However, all Hungarian Rts are not Rts whose shares have actually been offered to the public (*nyilvános részvénytársaság*, “**Nyrt**”) but rather Rts whose shares have been offered only to its founders (*zártkörű részvénytársaság*, “**Zrt**”), so they are not traded on the stock market and resemble more a private Kft in many ways. The difference between a Kft and a Zrt lies more in the rules applicable to its establishment and operations (e.g. minimum capital requirements etc.) and therefore less relevant for the purpose of this study. The remaining 36 German and 11 Hungarian firms (12% and 5% of the respective national sample) are organised as neither of these customary legal forms and include academic and other research institutions, associations, individual entrepreneurs etc. The legal form in which a firm (or rather its owner) elects to incorporate the firm has a significant impact on the way the firm is organized, the legal and other obligations it is subject to, the modes of financing it will use, etc. As an example, only an AG/Rt is able to raise capital in the form of equity on the stock market, by publicly issuing new shares subscribed by a large number of investors that do not necessarily have a direct relationship with the firm. By contrast, a GmbH/Kft’s equity is provided by the closed group of the firm’s existing shareholders, often a very small number of long-term investors with strong historic ties to the firm (such as the founding family for example). The decision to transform a GmbH/Kft into an AG/Rt and to ‘float’ its equity on the stock market through an initial public offering (IPO) is sometimes done as part of a firm’s strategy to grow and expand, aiming to raise additional equity on the stock market to fund its acquisitions and developments. An alternative way for a GmbH/Kft to increase the equity available for its development is to be taken over by another larger (and often foreign) firm operating in the same sector, which may have more capacity than the original shareholders to provide the firm with additional equity to fund investments and developments. On the other hand, the ownership of a GmbH/Kft is likely to be more stable than the one of an AG/Rt, especially if the shares of the latter are traded on the stock market. Unless the GmbH/Kft is foreign owned, its ownership is also likely to be more “local” than the

one of an AG/Rt. Unless an AG/Rt is not traded on the stock-market (which may sometimes be the case, and which is the case for the sub-group of Rts which are the Zrts), its ownership is basically floating among a potentially very large and constantly changing number of shareholders with little or no durable spatial or organizational relation to the firm. By contrast, the shareholders of a GmbH/Kft typically consist of a very small group of long-term owners, often the founding family or in some cases a foreign firm that has acquired the GmbH/Kft as part of its geographic expansion. A GmbH/Kft may also count private equity firms or venture capitalists among its shareholders: while their involvement is likely to be less long-term than the one of a founding family or of a foreign firm operating in the same sector, it is still significantly closer to a firm and its operations than the one of an AG/Rt shareholder who may consider his investment more as a 'financial asset' rather than a 'say' in the management of the company. An AG/Rt whose equity is traded on the stock market is likely to be directly exposed to pressures of shareholder value (and a permanent, short-term assessment of the share price and firm's financial performance by institutional investors, asset managers and rating agencies). This is by definition not the case for a privately held GmbH/Kft, although such a GmbH/Kft can be indirectly exposed to these pressures either through its shareholders or through its clients if these are the equivalent of an AG/Rt whose equity is traded on the stock market. The identification of a firm's shareholders and clients allow to identify (i) those firms that are directly linked to the stock market, (ii) those that are indirectly linked to the stock market (through shareholders and/or through clients) and (iii) those that appear to be 'very far' from the stock market because neither their clients nor their shareholders have their own shares traded on the stock market. This helps understand whether and how these pressures actually materialize for each of these groups of firms. The high proportion of GmbHs and Kfts (75%) and the low number of AGs and Rts (7%) in the firms sample of this study, as well as the absence of any Nyrt among the Hungarian companies reflects the fact that these are mainly small- and medium-sized Tier-2 and Tier-3 suppliers, as opposed to OEMs and Tier-1 suppliers where the proportion of AGs and Rts could be expected to be higher.

3.2.2 Qualitative Data Collection

While the quantitative data collected as described in the preceding section allowed to establish empirically which capital sources the firms use (rather than having to assume which ones they use), one limitation of this approach is that it does not provide any explanation of

the causes of the patterns: it tells little as to the reasons and implications of the patterns observed. Why do firms finance their activities the way they do and what does this mean for their governance and local and regional development? Qualitative information is therefore needed to complement the quantitative analysis by helping contextualise and interpret the data. This section first presents the original plan of collecting qualitative data for this study and explains why this route was eventually abandoned. It then sets out what type of qualitative data was eventually collected and how this data was used to contextualise and interpret the quantitative data collected.

Original Plan: Semi-Structured Interviews

The original intention of this study was, once sufficient publicly available information on the industry in general and on the selected sample of firms in particular had been collected and analysed to develop a solid knowledge of the sector enhancing the author's capacity to discuss in a meaningful way with actors within the industry (Schoenberger 1991), to then enhance this understanding through semi-structured interviews with firm representatives (such as conducted with car component manufacturers in other regions e.g. by Pavlínek (2002) in the Czech Republic). The aim was to conduct interviews with representatives of about 20 firms in each of the two regions, ideally focusing on a sub-sector of the industry (such as, for example, producers of a specific group of components, or of a certain activity) covering firms of all sizes (large, medium-sized and small) and types (local or foreign, individual or corporately owned, different tiers). Without aspiring to be in any way representative of either (i) the entire automobile supplier industry or even (ii) of the targeted sub-sector, such a heterogeneous sample could have helped capture and illustrate the diversity of firm types and financing practices within a certain sub-sector of the automobile supplier industry. Within this sample of firms, the main target group of people to be interviewed consisted in those firm representatives that are in charge of the firm's financing operations, i.e. 'sourcing' equity or debt on behalf of the firm and that are involved in the relevant decision making processes. This is typically the firms' chief financial officer (CFO) or other directors of the finance department when firms are sufficiently large to have one. In small family-owned firms, this may in some cases be the firm's owner himself. It was envisaged to start with a 'pilot', a small group of companies to test the approach and organisation of the interview process, to be then

rolled out to the larger group once the approach had been tested and potentially amended to work better.

In addition to obtaining the interviewee's acceptance to participate in the interview, it would also be important to motivate them to do so in an engaged and active manner. Schoenberger (1991)'s recommendations in this respect regarding corporate interviews provided useful guidance, including but not limited to (i) good preparation on part of the author (evidencing that their business was well understood) and (ii) integration of "problem-solving" elements in the interview such as asking them to compare with peer firms that could stimulate the interviewee's interest in participating. The observations of Cormode and Hughes (1996) and Cormode and Hughes (1999) as well as Ward and Jones (1999), Hughes (1999) and Mullings (1999) regarding specificities and difficulties encountered in interviewing elites (such as, in particular, positionality, and in the present case, the author's being a foreign academic external to the car industry) would also be relevant considering the type of interviewee that was targeted.

When this plan was rolled out in practice by a campaign of both e-mail and phone calls to a number of firms starting in Hungary, it quickly appeared that this route was not practicable: the response rate to e-mails was close to zero, and the response to phone calls was a polite but firm refusal to engage in any kind of discussion regarding the firm's financing strategy. A willingness to conduct an interview was signalled in only 2 cases, not sufficient to collect significant firm-level qualitative data for this study through this method. This very low success rate of the attempted organisation of interviews can be put into perspective with the experience of Gentile-Lüdecke and Giroud (2009) who had a response rate of 16% on their mail survey of Polish car component manufactures regarding the transmission of knowledge, and Harzing (2000) according to whom response rates for mail surveys of car component manufacturers tend to be around 20% on average (based on a survey of 22 European countries) but tend to be lower the further away the surveyed firms are geographically (and culturally) from the location of the researcher. The quasi 0% response rate to the e-mail campaign of this study therefore likely reflects the relative distance in particular of the Hungarian firms from the researcher's location in the UK, very likely exacerbated by the fact that finance is considered by the firms as a particularly sensitive topic on which the motivation to discuss with an external researcher is particularly low. It is also coherent with the notorious

difficulty in engaging with small firms, in particular on sensitive topics, as confirmed by the literature such as Ram and Holliday (1993) for example. The seemingly contrasting of examples of Bečicová and Blažek (2015) who managed to conduct interviews with 36% of the Czech car component manufactures contacted to discuss their perception of a credit gap in the periphery (even though, as the authors admit, sometimes only after considerable effort by the researchers) and of Pavlínek and Ženka (2010) with a 35% response rate to their survey seems to confirm the importance of geographical and cultural proximity for the success of interviews and surveys as identified by Harzing (2000) in respect of mail surveys. As the interviews eventually turned out not to be practicable within the scope of this study (and therefore remain to be done through future research), the study progressed without them and was finalised with the data that the author was able to access otherwise.

Secondary Qualitative Sources

In the absence of interviews as described above, other publicly available qualitative sources were used to help interpret the quantitative data. This included general information on the automotive supplier industries in Eastern Germany and Hungary which provided a necessary empirical context for the quantitative firm-level data. Such information was taken mostly from available secondary sources such as existing academic research articles, reports by professional organisations and research networks. Many academic publications concerned with the automotive supplier industry in Eastern Germany and Hungary (including from a GPN perspective) are available and a certain number of analytical reports specific to the automotive supplier industry and or relevant financial practices are available from sources such as public international organisations (e.g. OECD, IMF, ECB, EIB), public national organisations such as development agencies, market research/consulting firms (e.g. PWC, E&Y, BCG, Nielsen Consulting), financial institutions and financial business associations such as Euromoney (with its handbooks on Securitisation and Structured Finance, international and national automotive (supplier) business associations (e.g. ACEA, OICA, VdA, OESA which is the OEM's supplier association or CLEPA the European Association of Automotive Suppliers), trade unions such as IG Metall, car-focused research networks such as the Paris-based Gerpisa and trade journals (such as Automotive News and its Market Data Books).

Industry-wide statistical data was also available from both general and industry specific sources (with a focus on NUTS2 level whenever possible). There is a wide range of statistical data available although not all sources were of use for this project:

- Data published by Eurostat and the national statistical offices of Germany and Hungary
- Statistical data published by public and private and international organisations, business associations and research networks mentioned above
- BACH, the database of the European Commission's Bank for the Accounts of Companies Harmonised was of limited use for this project given that it currently covers only 8% of German companies and no Hungarian companies.
- Databases operated by BvD (Bureau van Dijk): the FAME database is limited to UK and Irish companies, but BvD offers equivalents in other countries (such as Dafne for Germany but none for Hungary) as well as a pan-European database (Amadeus).
- the *fDi Markets* database (an online database maintained by *fDi Intelligence*, itself a specialist division of the Financial Times), with sector categories such as 'automotive components' and 'automotive OEM';
- UNCTAD numbers on FDI flows at country level;
- the *Euromonitor* database; and
- finance sites such as Yahoo Finance or Google Finance, the Economist Intelligence Unit.

This publicly available qualitative data was used to help interpret, to the extent possible, the quantitative data collected to understand why the financing patterns look the way they do and what implications this may have on the firms' governance and on local and regional development, as well as on the role the firm's agency plays therein.

3.2.3 Data Analysis

The quantitative and qualitative data collected was analysed using the conceptual framework discussed in Chapter 2 and the methodological approach discussed earlier in this chapter.

Analytical Framework

The quantitative information gathered with regards to the capital sources of a firm was used to establish for each firm which 'suppliers' of capital (as the term is used in Figure 7) are present in each of the firms. Rather than taking the presence of capital for granted or considering only certain capital sources (such as the capital markets) without establishing

whether they are actually present, this enabled an analysis of the actual capital sources present in the firms and hence which types of relationships the firms have to deal with as part of their firm governance framework as discussed in Section 2.3.2. This analysis was also a preliminary condition to evaluating whether or not the sample of firms analysed as part of this study might support the pecking order theory (as discussed in Section 2.3.2). This part of the analysis relied primarily on the quantitative data collected.

In a next step, the sources of capital empirically identified were put into perspective with the firm's location and size, to assess for example to which extent regional equity or debt gaps affecting in particular smaller and peripheral firms as discussed in Section 2.3.1 could be identified. This introduced a spatial dimension into the analysis to allow for an analysis of the data from a geographical perspective. The data was then put into perspective with the firm's ownership, to assess more particularly from a GPN perspective as discussed in Section 2.2.3, to the extent firms were identified to be owned by other GPN firms, raising the question whether these firms would tend to access capital in a significantly different way than the firms that are integrated into global production networks through their commercial relations but not through their ownership. While the data available did not permit the identification of commercial relationships between the firms, the ownership relation between two GPN firms is very common particularly in Hungary and, as evidenced by the results of the analysis, has a significant impact on the way the firms source their capital.

Finally, the results obtained from this quantitative analysis were contextualised through the qualitative data collected, in particular with respect to the institutional infrastructures of capital provision in the two regions studied. The aim here was to establish to which extent the diverse patterns of capital sourcing identified among the firm sample through the quantitative data, with certain tendencies apparent depending of the firms' size, location (both between Hungary and Eastern Germany, and in more or less peripheral regions of each of these regions) and ownership (by GPN firms, by local individuals or others) might be explained or understood through the relevant local variegations of capital (as discussed in Section 2.1), as these translate into specific institutional infrastructures of capital provision for the firms.

Quantitative Data Analysis

More specifically with respect to the quantitative data collected, once the quantitative indicators mentioned above collected, they were analysed to establish whether any regularities could be identified between the size, location and ownership of a firm on the one side and its sources of capital on the other side. It could be expected, for example that larger firms have access to a wider range of financing sources (including the capital market) than smaller firms. The indicators established for each firm were thus aggregated to analyse and identify patterns across regions. The patterns thus identified would show an uneven degree of connectedness to financial actors, an uneven access to capital and an uneven stability of financing for firms depending on their locations, size and ownership relations.

Once the headquarters' addresses for each firm (including the relevant post codes) collected, a first high level locational analysis was done by looking at how locations are distributed across NUTS1 regions in Germany and Hungary. This was facilitated by a correspondence table retrieved from the Eurostat website¹⁰ indicating the NUTS (level 1, 2 or 3) region for every postcode. The locational analysis by NUTS regions (even at the more precise NUTS2 or NUTS3 levels) is only a high level one and does not allow a precise locational analysis. Such precise locational analysis is only possible using GIS-tools such as ArcMap. This requires the conversion of addresses into coordinates (degrees, minutes and seconds of latitude and longitude), which was done using Google's geocoding tool¹¹ available for free online. As an example, the headquarters of the firm BORBET Thüringen GmbH located at the address 'Am Fliegerhorst 17, 99947 Bad Langensalza' translate into the coordinates "Latitude: 51.12557; Longitude: 10.629840000000058" (minutes and seconds being expressed as decimals of the degrees). Once the addresses converted into coordinates, these were used to produce an overview mapping of the firms in ArcMap, displaying the data geographically by using ArcMap's XY display function for latitudes and longitudes and combining the result with base maps (for country borders etc.) found in the ArcMap resources.

The data was not analysed through advanced quantitative methods such as regression analysis, principal component analysis (PCA) or cluster analysis (cf. Carballa Smichowski *et al.*

¹⁰ <http://ec.europa.eu/eurostat/web/nuts/correspondence-tables/postcodes-and-nuts>

¹¹ <http://www.geocoderpro.com/en/resources/free-online-geocoder/>

(2016)) using statistical software such as SPSS or eView. This would have allowed to evaluate more precisely potential relationships between one dependent variable (e.g. the proportion of retained earnings) and a set of independent variables (e.g. the location in Hungary or Eastern Germany, and within each region in the centre or the periphery, the size or ownership of the firm) but remains to be done through future research. Instead, the structural patterns identified were visualised through various means to make them more perceptible and facilitate their interpretation. Depending on the nature of each specific pattern or trend to be visualised, the visualisation was done through maps or charts. The visualisation of structural patterns through maps (produced with the help of ArcGIS software) revealed a complex landscape of capital sourcing patterns across regions.

3.3 Reflexivity

This section discusses some of the reflexivity, ethics and positionality issues of this study, both as they result from the research design and as they appeared during the research, mainly concerning the systematic collection of information on the firm's activity, commercial relationships and tier-positioning.

Ethical considerations of this project were in respect of working with people (through the interviews originally planned) and with firm level data concerning specific corporates (throughout the entire duration of the project). Another specificity of the project is that much of its empirical work concerns firms that still operate today, and which (just like any other corporate) consider some of the information regarding their business and strategy which are not already publicly known as confidential and not to be disseminated. The approach retained was not to use any such information for this study (and no confidential information was obtained in the absence of interviews): any information concerning a specific firm was taken from public, non-confidential sources. If any confidential information had been obtained (through interviews with individuals working inside the relevant firm) and if it had constituted a useful complement for this project, this could in theory have been done in two, potentially combined, ways:

- **Corporate Consent:** if the concerned firm had consented to the utilization of a specific piece of confidential information in this study, this could have been done. However, this also meant that the firm was likely to request a say not only regarding which piece

of confidential information was used, but also how it was used, i.e. how it was contextualised within the paper. More generally, explicit collaboration with firms could potentially have increased the author's ability to access confidential information (potentially subject to the signature of a confidentiality agreement) and potentially enhanced the potential relevance of the study also from the corporate's point of view. However, it would also have meant that the corporate's say on the paper would have increased at the expense of the independence of the author's own analysis, and was therefore not a preferred route.

- **Anonymisation/Pseudonyms:** in some cases, confidential information could have been used (again with the consent of the concerned corporate) on an anonymised basis or with the utilization of pseudonyms (and with no direct quotations) rather than the actual names of the corporates, see Czaban and Henderson (1998) for such an example. Potential issues here would have been the questions (i) to what extent information given under pseudonyms does not weaken the relevance and generalizability of the overall analysis and (ii) whether the use of pseudonyms constitutes a sufficient protection for anonymity in a sector with only a limited number of actors. This was therefore likely to be an option only for those parts of the GPN with a sufficiently high number of actors (i.e. tier-two and tier-three suppliers).

In any case, as eventually no confidential information was obtained and used in this study, the above considerations could rather serve as a guidance for follow-up research pursuing the route of the corporate interviews.

The overall methodological approach having now been presented, the next chapter sets out the empirical context of the study.

Chapter 4 Car Component Manufacturing and Financing in Hungary and Eastern Germany

Following the formulation of the conceptual framework and methodology in the preceding chapters, this chapter presents the empirical context of the study: the car component manufacturing industries in Hungary and Eastern Germany generally and, more specifically, the sub-set of firms in both regions analysed as part of this study. The objective is to provide the empirical context for the subsequent findings chapters to facilitate the understanding of how the firms source their capital (Chapter 5), why they do it this way and what impact this might have on their governance as well as on local and regional development outcomes (Chapter 6). The first section (4.1) provides a brief overview of car component manufacturing in general before focusing on the specificities of Hungary and Eastern Germany. The second section (4.2) summarizes certain characteristics of the sub-set of about 320 firms split among both regions that was selected and analysed within the scope of this study, with focus on the firms' location, size and, very importantly, ownership. The third section (4.3) discusses institutional infrastructures of capital provision in Hungary and Eastern Germany and evolving modes of firm finance in the post-socialist contexts of these regions.

4.1 Car Component Manufacturing Sector Overview

Since the introduction of the moving assembly line by Henry Ford in 1913, the “machine that changed the world” (Womack 1990) evolved from being a technological innovation into a commodity which is an essential component of hundreds of millions of households around the world, with about 70 million vehicles sold every year (OICA 2018a) and almost 1.3 billion vehicles in circulation in 2015 (OICA 2018c). At the same time, cars are a very complex commodity with a capital intensive production process involving global networks of firms connecting a relatively small number of assembling firms with a large number of component manufacturers. The car component manufacturing industry is therefore a very good (and well researched) example of global production networks, the theoretical framework presented in Section 2.2.1. The following section first gives a brief overview of the history and structure of the car component manufacturing industry generally (mainly following Dicken (2011)) before focusing on Hungary and Eastern Germany.

4.1.1 Car Component Manufacturing: Supplying 'the Industry of Industries'

Car manufacturing, once called 'the industry of industries' (Drucker 1946: 149) was one of the major drivers of industrial development until the 1970s and still constitutes one of the key industrial sectors today, employing 8 million workers worldwide (up to 20 million counting also those involved in the selling and servicing of cars) (Dicken 2011). Car manufacturing today is an assembly industry with complex relationships between a small number of very large assemblers of vehicles and a complex network of large and small suppliers of components:

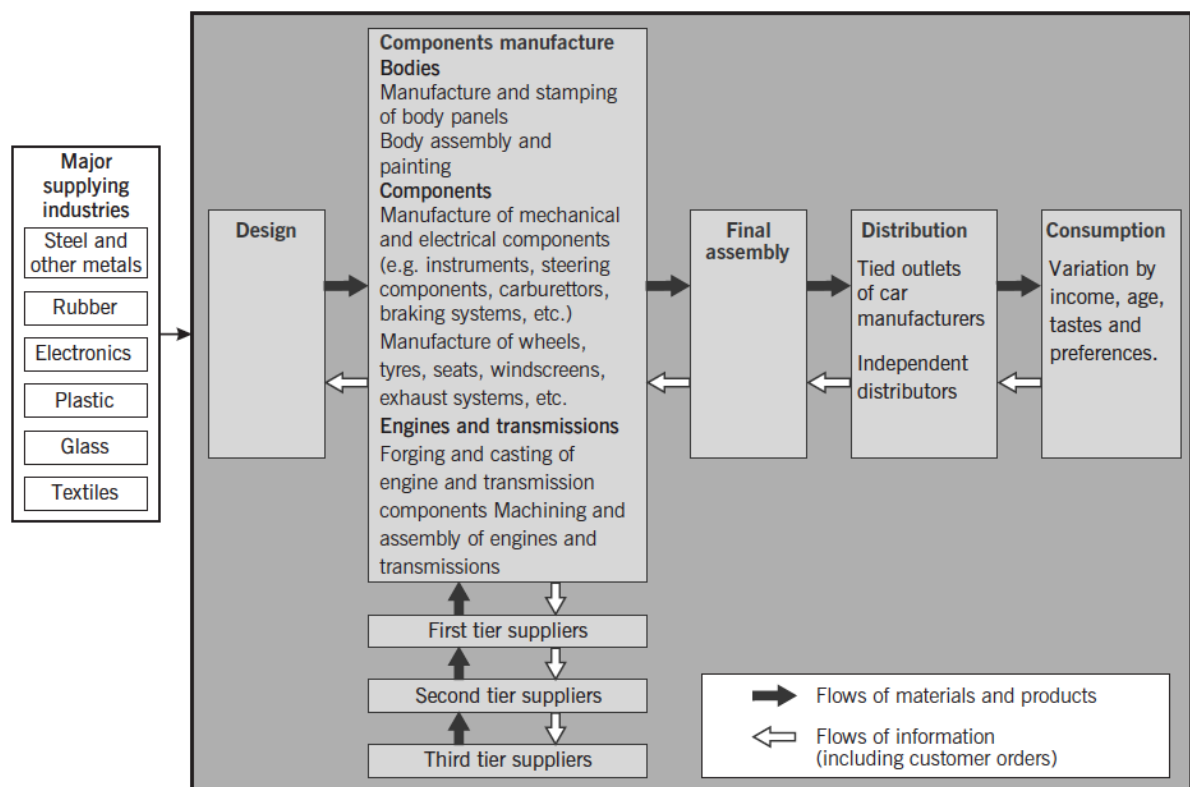


Figure 14 The automobile industry

Source: Dicken (2011)

The suppliers of components are organised in tiers, with the first-tier supplying the most complex and important components directly to the assemblers and assuming research and design tasks on their behalf, while the second-tier produces components based on design provided by the assemblers or tier-one suppliers and the third-tier produces the most basic components (Dicken 2011). While car manufacturing originated in the US and in Germany in the early 20th century, it has in the last 40 years become a global industry that remains strongly concentrated geographically, with about two thirds of global production today concentrated

in only seven countries: Japan, China, Germany, the US, South Korea, Brazil and France, but production also growing in other regions such as Eastern Europe among others (Dicken 2011).

Car manufacturing: from mass to lean production and the rise of non-US giants

The first phase of car manufacturing on an industrial scale was based on mass production as introduced through Henry Ford's moving assembly line in 1913, producing a small range of highly standardised models in very high volumes by a highly specialised workforce in order to obtain economies of scale allowing to reduce unitary production costs (Dicken 2011). This changed significantly in the early 1970s when Japanese car manufacturer Toyota introduced lean production, a highly efficient and cost-competitive production system which soon came to replace mass production (just like mass production had replaced craft production in the early 20th century) and became the new global norm adopted by car component manufacturers worldwide: while under mass production each vehicle model was produced on its own production platform, lean production introduced the sharing of production platforms between different vehicle models, allowing the use of common components in different type of vehicles and the production of a larger range of models with a limited number of production sites (Dicken 2011). Other car assemblers followed suit: VW for example reduced the number of platforms used from 16 to 4, General Motors from 25 to eight and Nissan from 24 to five, with platforms in most cases being used to produce several vehicle models (Dicken 2011). Lean production further introduced the principle of modules (groups of physically adjacent components that constitute a coherent unit within the vehicle) and systems (groups of components located throughout the car but operating together to provide a specific function, such as braking systems, electrical systems and steering systems), which have become the norm in car manufacturing today (Dicken 2011).

While car manufacturing in the first half of the 20th century was very fragmented (with many nationally based assemblers in every car producing country: over 80 in the US, over 150 in France and over 40 in the UK) and increasingly concentrated (with General Motors and Ford alone representing more than 50% of global car production by the 1960s), it is today still a highly-concentrated industry but no longer dominated by the US firms, with a small number of also Asian and European firms leading the group:

Rank	Company	Headquarters	Cars produced in 2016
1	Toyota	Japan	10,213,486
2	Volkswagen	Germany	10,126,281
3	Hyundai	South Korea	7,889,538
4	GM	US	7,793,066
5	Ford	US	6,429,485
6	Nissan	Japan	5,556,241
7	Honda	Japan	4,999,266
8	Fiat	Italy	4,681,457
9	Renault	France	3,373,278
10	PSA	France	3,152,787

Figure 15 World's top car manufacturers (2016)

Source: OICA (2018b)

Today's situation is the result of many years of acquisitions and mergers in the industry (but also of the organic growth of some producers): a very early example was the acquisition of German car manufacturer Opel by US firm General Motors in 1929, but the landscape changed the most dramatically in the 1990s when for example GM acquired Saab, Ford acquired Jaguar, Land Rover and Volvo, BMW acquired Rover, Renault acquired a material stake in Nissan and German Daimler-Benz acquired the US firm Chrysler and then DaimlerChrysler acquired a material stake in Mitsubishi and a similar process of concentration was observed among the major car component manufacturers with the growth of (respectively GM and Ford spin-offs) Delphi and Visteon for example (Dicken 2011). This process proved not irreversible however, with the breakup of Daimler with Chrysler (eventually merged with Fiat) in 2007 and divestments around the crisis of 2008 such as for example Saab and Hummer by GM, Jaguar-Land Rover and Volvo by Ford and GM almost (but eventually not) selling Opel for example – consolidation continued, however, for example with VW acquiring a stake in Suzuki (Dicken 2011) and PSA acquiring Opel and Vauxhall in 2017. The prime example of a firm having reached a top position through (almost) exclusively organic growth is Toyota (Dicken 2011). In addition to these numerous capitalistic relationships between the world's major car component manufactures, there is also an important number of collaborative agreements

between the firms consisting in both technical and marketing cooperation, such as for example the partnership between Daimler, Renault and Nissan (Dicken 2011).

More recently, another technological revolution has been in the making which is expected to again fundamentally transform the automotive industry and lead to big structural changes (including ramifications in the component supply chain) in the coming years: the development of electric vehicles (originally pioneered by Tesla but since taken on by all major traditional OEMs), the shift to autonomous vehicles and the rise of mobilities services. While a majority of cars produced today are still based on traditional combustion engines and require a human driver, the high expectations of the sector with regards to the coming structural shift is illustrated by the joint venture capital fund announced in January 2018 by Nissan, Renault and Mitsubishi and which is expected to invest 1 billion USD into electric vehicle technologies, autonomous systems and other transport innovations (Hering 2018a). As early as 2019, General Motors intends to commercialise self-driving cars with no traditional controls like steering wheels or pedals (Hering 2018b). This being said, certain barriers and resistances to the structural shift remain (Berkeley *et al.* 2017), and some car manufacturers such as BMW cautiously ensure their current investments in future production sites will provide the flexibility to produce both cars with traditional combustion engines and with electric batteries to allow adjustment to what the actual demand for the various models will be (Wilson 2017).

Car component manufacturing: changing relationships and constitution of networks

Very soon in the history of car production, car manufacturers started outsourcing the production of components and concentrate on the assembly of the final product. One of the knock-on effects of the introduction of lean production was therefore an increased pressure by car assemblers on component manufacturers to deliver components quickly ('just-in-time'), at low cost, on a continuous basis and in high quality - leading to tier-one suppliers taking on some of the research, design and development of component modules and systems (and the risks associated thereto) and a pressure for suppliers to locate geographically close to the car assembler's sites of car assembly (Dicken 2011). A further knock-on effect of this was a consolidation among car component manufacturers similar to the one observed among car assemblers: over a period of only ten years, the number of car component manufacturers in the US declined from around 30,000 in 1990 to 10,000 by the year 2000 (and significantly further since) and all major car assemblers significantly reduced the number of their suppliers

(e.g. Peugeot-Citroën from 900 to less than 500 or BMW from 1400 to 600), with a similar reduction of tier-two firms as suppliers to the tier-one firms, in particular following the crisis of 2008 (Dicken 2011). One of the effects of this increasing concentration of suppliers is that they are increasingly becoming functionally segmented in four main groups including raw material suppliers (which supply raw materials such as steel blanks, aluminium ingots or polymer pellets to the car assemblers or their suppliers), component specialists (that design and manufacture components tailored to a production platform or vehicle such as stampings, injection moulding or engine components), standardisers (setting standard on a global basis for a specific component or system, such as tyres, anti-lock braking systems 'ABS' or engine control units 'ECU') and integrators (designing and assembling entire modules or systems for a car, such as interiors, doors or the chassis for example) (Dicken 2011). While raw material producers and component specialists often represent the lower tiers in the hierarchy and can have a local, regional or global presence depending on the context, standardisers and integrators have significant research and design responsibilities, are often tier-one, very close to the car assemblers (with 'organisationally close' long-term relationships) and usually operate on a global scale (often opening production sites close to the production sites of their clients and sometimes even 'co-locating' in 'industrial condominiums' or 'supplier parks' by being physically installed within or next to the car assemblers' plants) (Dicken 2011). A distinction therefore emerged between a small group of powerful tier-one manufacturers of complex modules and systems (powerful because the car assemblers no longer have the capacity to produce these modules and systems themselves) with Robert Bosch, headquartered in Stuttgart, ranking number one under car components manufacturers worldwide (Automotive-News 2018), with over 200 production and developments sites in 28 countries and employing over 140,000 people, and a much larger group of much less powerful tier-two and tier-three manufactures of less complex and standardised components (whose main differentiation lies in the cost and that can therefore easily be substituted by others). The importance of the relationship between the car assemblers and a small number of globally present tier-one suppliers is also highlighted by Humphrey (2000) for example.

In parallel to the development of a car supplier industry, the globalization of car manufacturing started as early as the 1920s (often with the aim to overcome protective barriers around national markets as well as high transportation costs for assembled vehicles),

became a central strategy of many manufacturers in the 1980s and further accelerated in the 1990s, particularly into Central and Eastern Europe (Bartlett and Seleny 1998). Historically, GM and Ford were the first car producers to internationalise their production, first to Canada and then to Europe with the construction of Ford's first European manufacturing plant in Manchester in 1911 and the acquisition of Vauxhall by GM in 1925 before their expansion into France and Germany with the acquisition of Opel by GM in 1929 (Dicken 2011). Japanese car manufacturers followed suit only much later (initially exporting cars that continued to be produced in Japan or elsewhere in Asia), with Honda leading the charge with a production plant opened in the US in 1982, Nissan opening one in Europe in 1986 and Toyota opening their first European plant only in 1992. The internationalisation of Japanese car manufacturers on a global scale has since increased significantly (to levels far beyond the one of US producers) (Dicken 2011). European manufacturers (such as VW, Renault or Fiat for example) often remained strongly concentrated within Europe (initially in Spain but with an increasing emphasis on Eastern Europe such as the Czech Republic or Slovakia) but also expanded into Brazil, Mexico and China as well as Japan and South Korea in the case of Renault and Peugeot-Citroën (Dicken 2011). The last 30 years have also witnessed the increasing role and internationalisation of car assemblers from South Korea (with Hyundai today operating plants in China, India, Turkey, the US and the Czech Republic), India (with the acquisition of Jaguar-Land Rover by Tata in 2008) and more recently also China (with the Shanghai Automotive Industrial Corporation SAIC and the Beijing Automotive Industrial Corporation BAIC for example) (on FDI in China's automobile industry cf. also Liu and Dicken 2006; Dicken 2011).

This process of car assembler's globalisation also materialised in the constitution of regional networks of production, component supply and distribution within respectively North America, Europe and Asia (Dicken 2011). In Europe, with a comparatively complex car production network as a legacy of formerly national automobile industries (still dominated in terms of production volume by Germany, France, Spain and the UK), the landscape was profoundly shaped by the two major political and economic transformations that were the creation of the Single Market in 1992 and the fall of the Iron Curtain with the political and economic integration of the formerly state-socialist countries of Central and Eastern Europe (cf. also Bernaciak and Scepanovic 2010; Dicken 2011). While the presence of US assemblers Ford and GM in Europe is almost 100 years old, Japanese firms Toyota, Nissan and Honda

arrived from the 1980s onwards (Dicken 2011) with a strategy markedly different than the one they had pursued in the US: while in the US they worked mainly with Japanese suppliers that followed them from Japan, in Europe Japanese car assemblers worked with existing local suppliers to a larger extent and practicing just-in-time production without necessarily being linked to spatial clustering (Hudson and Sadler 1992; Sadler 1994). The indigenous car assemblers in Europe often remain strongly embedded in their respective national contexts with only VW having a truly regional footprint across Europe with a focus on Germany, Spain as well as the Czech Republic and Slovakia but also Poland and Hungary (Dicken 2011). Major car component manufacturers in Europe even appeared less dependent on their home markets compared to the European car assemblers, with some starting to internationalise their distribution even before the 1990s (Sadler 1999). Eastern Europe has been the main area of change in European networks of car production since the 1990s, with several car assemblers either taking over pre-existing local firms or building new plants themselves, such as GM establishing a presence in Poland and Russia, Toyota establishing a joint-venture with Peugeot-Citroën in the Czech Republic, and Peugeot-Citroën themselves relocating production from the UK to Slovakia and the Czech Republic, Hyundai operating a plant in the Czech Republic and Renault operating plants in Romania and Slovakia (Dicken 2011; for a study of employment practices by foreign firms in the Czech automotive sector, cf. e.g. Meardi *et al.* 2013).

This shift of car assembly to Central and Eastern Europe was accompanied by an increased shift of components production into this region as well, with affiliates of foreign suppliers establishing local production to follow their car assembler clients (or in some cases acquiring pre-existing local suppliers) but also by indigenous (often formerly state-owned) suppliers, although these latter are often restrained to the production of low-value components and only peripherally connected into the car assemblers' trans-national networks of production (on the privatisation e.g. of Czech car component manufacturers, cf. Pavlínek 2002; Dicken 2011). This raised the question of the embeddedness of foreign car assemblers in networks of local car component suppliers (Sadler *et al.* 1993) which resulted to be unequal, and in the case of VW for example stronger in the Czech Republic than in Slovakia (Pavlínek and Smith 1998). This is especially true for car components in Central and Eastern Europe, where industrial upgrading and tier-1 positions tend to be reserved to foreign-owned firms and not

achievable for locally owned firms, as evidenced by Rugraff (2010) in respect of the Czech Republic for example. Rugraff (2013) further highlights the fragile situation of locally owned car component manufacturers in the Czech Republic in term of linkages with foreign car assemblers. Still in a Czech context, Pavlínek (2003) highlights how foreign car assemblers link with locally owned car component manufacturers mainly for low-skilled low-cost products, with a risk that they move away to even cheaper locations (such as Poland or Slovakia in respect of the Czech Republic). According to Humphrey and Memedovic (2003), car assemblers increasingly prefer to bring their own tier-one suppliers to the regions into which they expand, leaving little place for car component manufacturers in the host countries to achieve 'industrial upgrading' and a higher tier-position. More opportunities exist in the lower tiers where the production of less sophisticated components can be assumed by local car component manufacturers. Schmitt and Van Biesebroeck (2013) highlight the importance of geographical, cultural and relational proximity between car assemblers and car component manufacturers in Europe and the different strategies pursued by firms in this respect.

It remains to be seen to which extent the coming structural transformation of car manufacturing as discussed above (with electric vehicles, autonomous vehicles and mobilities services) will affect and potentially transform the car component manufacturing industry in Central and Eastern Europe (such as for example the rise of battery suppliers for electric vehicles), depending on the way in which the local firms will be able, or not, to adapt to these new circumstances.

4.1.2 The Contrasting Examples of Hungary and Eastern Germany

The car component industries in Hungary and Eastern Germany are an integral part of this global evolution, however with their own specificities due to their respective local context, reflecting particular variegations of capitalism as discussed conceptually in Chapter 2. The way in which the car component industries are structured in these two regions is the combined result of a common state-socialist past and a different trajectory taken by the two regions since (Eastern Germany having been absorbed virtually overnight in the existing capitalism of Western Germany, and Hungary taking its own way of privatisations and foreign direct investment). As a result, the structure of the car component industries (including in particular the ownership structures) differs between Hungary and Eastern Germany, and both are

different from what can be found in the UK or in the US for example – reflective of the different variegations of capitalism prevalent in these regions.

Car production in Central and Eastern Europe: transformations and contrasts

In Central and Eastern Europe, several countries started producing cars as early as the first decades of the 20th Century. Under state socialism, most of these countries (in particular the GDR with the Trabant, Czechoslovakia with Škoda and Romania with Dacia) maintained their national car manufacturing industries, with only limited cross-border manufacturing and quasi-monopolistic but small domestic markets, hence only limited economies of scale and a reduced speed of technological development (Czaban and Henderson 1998). Hungary was a notable exception with no domestic car production since the 1930s although it did produce car components and buses (Czaban and Henderson 1998). After the collapse of state socialism in 1989/1990, the automotive production industries in Central and Eastern Europe underwent a radical process of transformation, with high levels of foreign direct investment (FDI) and strong implications on the workplace and regional development, as analysed for example by Swain (1996) in the case of Hungary and Eastern Germany. The privatization of the domestic car manufacturing industries (largely sold to foreign investors) was seen by the new governments as an opportunity to sell at a good price, maintain or even increase employment levels, direct additional resources and technologies into the country and open new markets while, at the same time, maintaining the dominance of domestic firms within the domestic markets (Czaban and Henderson 1998). Foreign investors, on their side, were attracted by prospects of new markets (and more specifically, of monopolistic positions of production within markets where import tariffs remained high), a cheap but skilled workforce, comparatively weak unions and cooperative governments (Czaban and Henderson 1998) characteristic of the variegations of capitalism prevalent in these regions at that time. Among the numerous foreign investors acquiring state-owned manufacturers in Central Europe was Volkswagen, with the acquisition of Škoda in Czechoslovakia in 1991. In other cases, foreign investors made greenfield investments, directly building their own manufacturing sites rather than acquiring pre-existing structures. Foreign lead firms generally played an important role in transforming the Central European automotive industries after 1990 through foreign direct investment and the acquisition of formerly state-owned assets (Sadler and Swain 1994;

Pavlínek *et al.* 2009). This is an illustration of how global production networks can participate in the transformation of variegations of capitalism as discussed in Chapter 2.2.2 (Lane 2008).

In 1990, Volkswagen was one of the first to establish a presence in Eastern Germany to benefit from production costs that were lower compared to their traditional bases in Western Germany with an engine production site in Chemnitz, a cylinder head production site in Eisenach (Sadler *et al.* 1993) and a car assembly plant in Mosel near Zwickau established 1994. General Motors established a car assembly plant in Eisenach (Thuringia) as early as 1992 (Sadler *et al.* 1993). More generally, a significant portion of total FDI into Eastern Germany in the early 1990s was related to the automotive industry (with USD 4 billion invested by 1993) (Sadler and Swain 1994).¹²

While there had been car production in the GDR (Trabant), no cars were assembled in Hungary between the 1930s and the 1990s. Hungary however hosted the state-socialist COMECON's main manufacturer of buses, Ikarus Karosszéria és Járműgyár (Bartlett and Seleny 1998) and specialized in the production of car components. The first foreign car manufacturer to (re)enter Hungary in 1990 was Ford with its components plant in Székesfehérvár, followed later in 1990 by GM/Opel with an auto assembly and engine plant in Szentgotthárd, Suzuki in 1991 with a car assembly plant in Esztergom and VW/Audi in 1992 with an engine production and (later) car assembly plant in Győr (Bartlett and Seleny 1998). Today, Hungary remains specialized in the production of car components (particularly engines, transmissions and steering systems) and became the second largest exporter of car engines in Europe after Germany (Pavlínek *et al.* 2009). Ford's strategy to develop a presence in Hungary pre-dated the end of state socialism and was initially shaped by the Hungarian import restrictions then in vigour, obliging foreign companies wishing to import finished goods into Hungary to offset these through exports from locally based subsidiaries (Bartlett and Seleny 1998). Ford therefore negotiated with the Hungarian government in the late 1980s to form a wholly owned local subsidiary (Ford Hungária) and to construct a plant in Székesfehérvár which was to produce car components. These car components would be exported out of Hungary, allowing Ford to import finished cars into Hungary in exchange. These import restrictions were however abolished by the outgoing state-socialist government soon after construction of the

¹² Cf. also Swain (2002) on the privatisation of the East German automobile industry.

Székesfehérvár plant started in 1990, and Ford reoriented its Hungarian subsidiary as dedicated first-tier supplier of electronic parts to Ford's assembly plants in Western Europe (Bartlett and Seleny 1998). While Ford initially tried to develop commercial relationships with local Hungarian suppliers, it had only four under contract by 1996 and significantly reduced efforts thereafter once it had obtained duty-free status for imports from Western Europe that year (Bartlett and Seleny 1998). By contrast, General Motors/Opel started looking at Hungary after the regime change and from the start sought to develop a local subsidiary (Opel Hungary) based in Szentgotthárd to offer low-cost, high-volume engine production for its assembly plants in Western Europe and final assembly of a car model (the Opel Astra) for the local market (Bartlett and Seleny 1998). As a European-based company, it was very early-on not obliged to comply with local content requirements, had a well-developed supplier network in Western Europe and therefore only very limited incentives to develop commercial relationships with local suppliers in Hungary (Bartlett and Seleny 1998). The assembly of the Opel Astra was done in CKD ("completely knocked down") mode, with kits produced and packaged in Germany and sent by rail to Szentgotthárd for assembly (Bartlett and Seleny 1998). Due to the small size of the local market, Astra production in Hungary remained limited as opposed for example to Poland, where the significantly larger amount of Astras assembled (up to 100,000 each year) led to a stronger development of commercial relationships with Polish supplier firms (Bartlett and Seleny 1998).

The strategy of Volkswagen/Audi, Europe's biggest car manufacturer, was initially similar to the one of GM and its Hungarian subsidiary (Audi Hungária) in Győr was from the start in 1993 (Sadler and Swain 1994) set up to produce engines and supply them to the group's assembly plants in Western Europe, as part of a wider effort to develop a complete production network in Eastern Europe (Bartlett and Seleny 1998). From the start, VW developed only limited ties with local suppliers because it had strong relationships with geographically not too distant suppliers in Germany and Austria and (as an EU company) could import components from these into Hungary with no particularly high taxes (Bartlett and Seleny 1998). VW's plant in Győr was a hybrid acquisition/greenfield investment where VW purchased part of the existing Rába site and fitted it out with modern equipment to build engines in high volumes (Bartlett and Seleny 1998). In the later 1990s, VW also moved the assembly of its Audi TT (a sports car targeting wealthy clients in Western Europe) to the Győr plant (Bartlett and Seleny 1998).

Suzuki, the fourth international car assembler to develop a presence in Hungary after 1990, negotiations with the Hungarian government having started as early as 1986 (Sadler and Swain 1994), had a significantly different stance than the three others. Suzuki's Hungarian subsidiary (Magyar Suzuki) developed a car assembly plant in Esztergom assembling the Swift model for both local sales and export into Western Europe. By 1996, the assembling capacity had reached 50,000, 40% of which were targeted as exports (Bartlett and Seleny 1998). Being both very far from its traditional supplier network in Asia and, as a non-European firm, obliged to comply with local content requirements, Suzuki was strongly incentivized to develop commercial relationships with local suppliers and modernize their production processes (Bartlett and Seleny 1998). Magyar Suzuki was supported by the Hungarian government to do so (through "tax holidays", subsidies, free land and grants), an example of how the state supports the implementation of global production networks on its territory (Smith 2015). Magyar Suzuki took several measures (including the sharing of capital equipment with Hungarian suppliers) and, by 1995, had concluded supplier contracts with 38 local firms (Bartlett and Seleny 1998).¹³

Car component manufacturing in Hungary and Eastern Germany¹⁴

Whether foreign car manufacturers chose to enter the market through the acquisition of domestic manufacturers or through greenfield investments, a crucial question (regarding the way global production networks developed and functioned thereafter in interaction with the local variegations of capitalism) was whether these foreign investors (i) brought in their own first- and second tier suppliers, (ii) imported components from other countries or (iii) relied on domestic suppliers and, in that latter case, whether they provided these domestic suppliers with the knowledge and resources (including capital) to improve processes and quality (Czaban and Henderson 1998), i.e. to 'industrially upgrade' to use GVC terminology. When lead firms brought in their own first tier suppliers, local component manufacturers often only became second tiers suppliers within global production networks in the best case (Czaban and

¹³ Cf. Swain (1998) on the impact of foreign direct investment by foreign car assemblers in Hungary on working conditions and local and regional development.

¹⁴ Cf. Humphrey and Memedovic (2003) also for an analysis of how the car component industry of Hungary changed in the 1990s and Crouch *et al.* (2009) for a comparison of car manufacturing in Hungary and Eastern Germany.

Henderson 1998). In the early 1990s, many foreign automotive component producers established production sites in Eastern Europe with the aim to integrate the region into their production systems (Sadler *et al.* 1993). Today, the supplier industry in Central and Eastern Europe is still dualistic, with affiliates of foreign companies following car assemblers on the one hand and ‘indigenous suppliers’ (often successors of formerly state-owned enterprises) on the other hand (Dicken 2003). Due to their “socially conditioned history of under-development and limited technological applications” (Sadler *et al.* 1993: 342), the latter, to the extent they have survived and not been replaced by foreign companies tend to be restricted to low-value, low-technology operations (Dicken 2003).

Even though, as mentioned above, Hungary had no car manufacturing industry under state socialism, it did have several major component producers (in particular Rába, Taurus and Csepel Autogyár) which supplied car manufacturers in other state-socialist countries (Russia, Poland and Yugoslavia) with car components (Sadler and Swain 1994; Bartlett and Seleny 1998). When the large international car manufacturers entered Hungary, their decision to develop commercial relationships with these existing suppliers or to use their own suppliers in other countries depended on several factors, including their legal obligation to comply with local content rules, the geographical proximity of their existing suppliers in other countries and applicable taxes for importing components from other countries. For this reason, Suzuki was the only car manufacturer that invested considerably in developing commercial relationships with the existing Hungarian supplier industry (Sadler and Swain 1994; Bartlett and Seleny 1998). Although General Motors made some efforts to develop commercial relationships with local suppliers in the 1990s by offering technical support and advice to upgrade local production, it did not offer financial support – this however would have been important given that modernization of production (and hence industrial upgrading as discussed in Section 2.2.1) would have necessitated important capital investments in machinery and technology (Bartlett and Seleny 1998). Given that lead firms generally offered no financial support to local suppliers, that the state’s resources were limited and domestic bank credit was costly, local suppliers struggled to achieve the production modernization that would have been necessary to enable effective integration into the lead firms’ global production networks (Bartlett and Seleny 1998). Whereas in Hungary, Volkswagen developed only very limited links with local supplier networks, it strongly supported the development of

an indigenous supplier network in Eastern Germany, including the arranging of conferences and the creation of training centres in Zwickau and Chemnitz to assist local companies (Sadler *et al.* 1993).

There is no such thing available as a comprehensive nominative list of all firms operating as car component suppliers in Hungary and Eastern Germany, but it is possible to estimate the number of existing firms that fall into this scope. The estimation is relatively straightforward in Hungary: according to Eurostat, about 500 companies in Hungary fall under the NACE Rev. 2 category C29. Out of these, about 50 fall under category C29.1 (manufacture of motor vehicles), about 110 belong to category C29.2 (manufacture of bodies, trailers and semi-trailers) and about 340 belong to category C29.3 (manufacture of parts and accessories for motor vehicles). The C29.3 group probably corresponds most closely to a generic definition of car component manufacturers, although firms in groups C29.1 and C29.2 could also be considered as being part of this industry. These 500 companies employ about 66,000 people but this workforce is very unevenly distributed: the majority of companies (about 280) are small and employ less than 10 people each, about 90 companies employ between 10 and 50 people, about 80 companies employ between 50 and 250 people and less than 60 companies employ more than 250 people each (this predominance of small firms is confirmed by the data collected within the scope of this study as shown hereafter). These 500 companies operate about 540 'units' (or production sites) in Hungary, meaning that most companies operate only a single site but some of them operate on two or more sites. Eurostat also provides a geographical breakdown of these production sites at NUTS2 level.

The exercise is a bit trickier in Germany as both Eurostat and the German statistical office Destatis provide aggregate data comparable to those available for Hungary, but some of these data are provided only for Germany as a whole without a breakdown for Eastern Germany, i.e. the sub-set that concerns this study. In addition, there seems to be a methodological divergence in the presentation of data between Eurostat and Destatis (and even within Eurostat between years): Eurostat considers that about 2,900 companies in Germany belong to NACE category C29 while Destatis only counts about 1,000 as belonging to Destatis category WZ08-29 (which is defined in a way very similar to NACE C29). Interestingly enough, however, both Eurostat and Destatis consider that their respective group of companies employs about 780,000 people so they seem to capture the same scope of 'reality' but maybe have different

ways of counting firms e.g. by counting a pure holding-company as a separate firm, or not – this would need to be determined by further analysis of their methodology. Neither Destatis nor Eurostat provide a geographical breakdown of the number of firms between Western and Eastern Germany, but Destatis do so for the firms' turnover and both do so for the number of production sites. At the level of the production sites, however, the challenge again seems to be a significant methodological divergence: while Destatis consistently estimates the number of production sites across Germany at around 950 over the last years (out of which about 180 in Eastern Germany), Eurostat's estimation evolved around 1,400 until 2009 (out of which about 280 in Eastern Germany) but then suddenly jumped to over 6,000 since 2010 (out of which about 1,200 in Eastern Germany). This is certainly due to a change of methodology that would still need to be analysed. Somewhat reassuringly in this context, both Eurostat and Destatis seem to agree that the number of people employed in this sector in Eastern Germany has consistently been between 50,000 and 70,000 since 2005, and the annual numbers from both sources even seem to be matching exactly (e.g. 51,283 people in 2006).

4.2 Characteristics of the Firm Sample Analysed

The firms analysed in this study are part of the car component manufacturing industries in Hungary and Eastern Germany as described in the preceding section. As mentioned in Section 3.13.1.3, data was collected for about 160 Hungarian and 160 Eastern German firms, representing a diverse, albeit not necessarily representative, sample of car component manufacturers in these regions. The following provides a breakdown of the characteristics of this firm sample in terms of location, size and ownership – characteristics that are then in Chapter 5 put into perspective with the patterns of capital sourcing identified for these firms.

4.2.1 Diversified Locations and Firm Sizes

In terms of location and size, the analysed sample of firms represents a diversified group spread all over Eastern Germany and Hungary, albeit with some regional concentrations, and of all sizes, but with a predominance of small firms.

Location

A breakdown of the 157 Eastern German firms in this study's sample by NUTS1 region (Figure 16) shows that it contains firms in each of the six *Länder* of Eastern Germany, though with some concentration in Thuringia where almost 4 out of 10 firms are located:

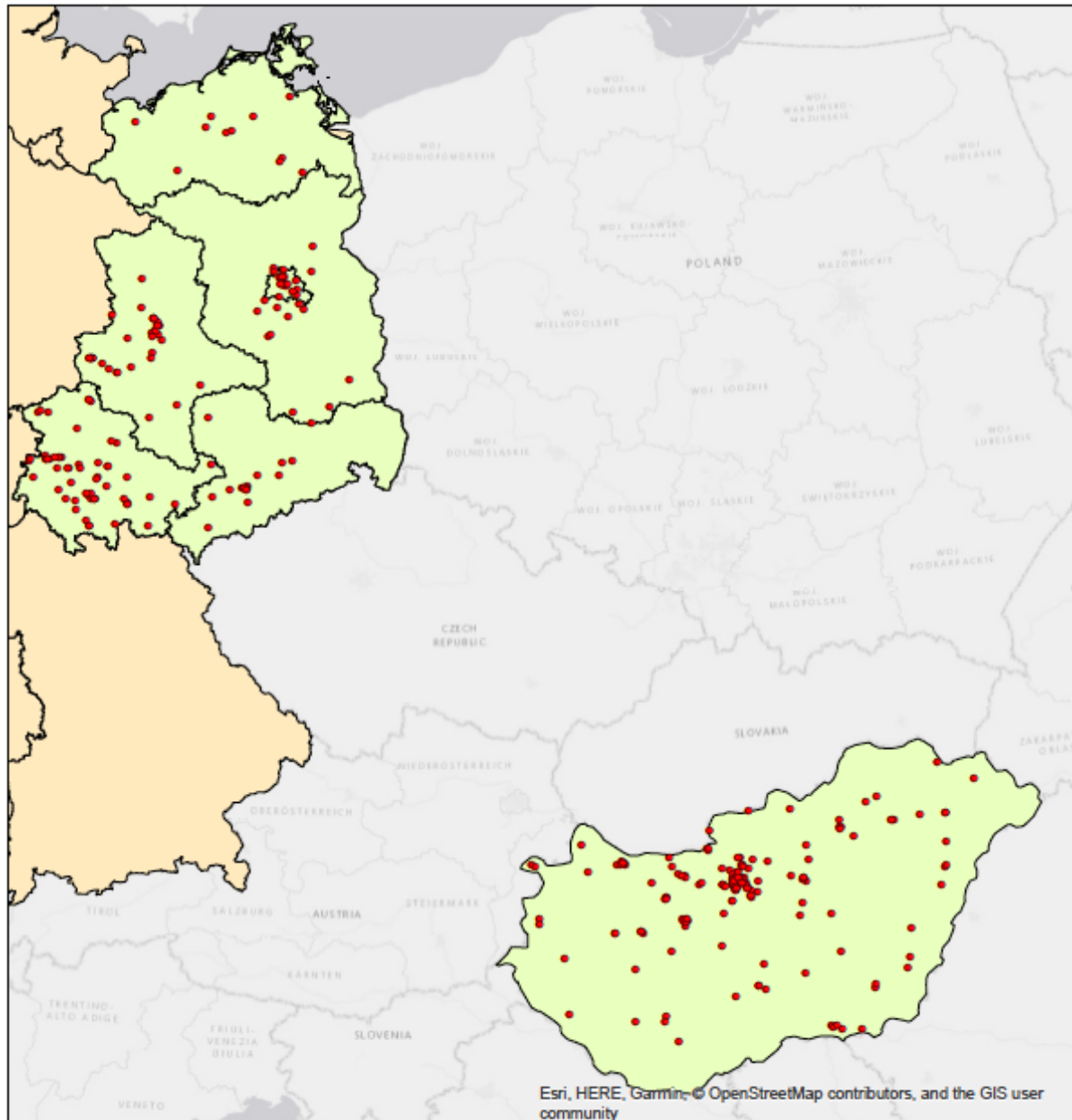
Eastern Germany	Firms	%	Hungary	Firms	%
Thüringen	58	37%	Közép-Magyarország	68	41%
Sachsen-Anhalt	35	22%	Dunántúl	51	31%
Mecklenburg-Vorpommern	11	7%	Alföld és Észak	45	27%
Brandenburg	17	11%			
Sachsen	18	11%			
Berlin	18	11%			
Total Eastern Germany	157	100%	Total Hungary	164	100%

Figure 16 Firm location by NUTS1 Region

Source: author

This pattern is consistent with the Thuringian cluster of car component manufacturing well identified in the literature, e.g. Swain (1996), and reflects the spatial proximity of many car component manufacturers with the car assembly plants in this region: PSA/Peugeot-Citroën's (formerly GM's) Opel and Vauxhall plant in Eisenach and Daimler's factory for Mercedes-Benz engines in Kölleda within the limits of Thuringia, as well as VW's (Leipzig, Chemnitz and Zwickau) and BMW's (Leipzig) plants located in Saxony but near the border with Thuringia. Interestingly, there seems to be no concentration of car component manufacturers in Saxony (with only 11% of firms in the sample located there) even though in addition to the four plants near the Thuringian border mentioned above, this region also has a VW plant in Dresden. By contrast, a comparatively high number of firms (22%) is in Sachsen-Anhalt where no car assembly plant is located. A map overview of the location of the firms (Map 1) yields some further insight: the concentration of 58 firms in Thuringia can be clearly recognised although they do not seem to be particularly clustered around Opel's plant in Eisenach but rather spread all over the region.

Virtually all 18 firms in Saxony are located on a relatively narrow axis between VW's car assembly plants in Dresden, Chemnitz and Zwickau, but only very few around BMW's and VW's plants in Leipzig. The data collected does not reveal which car component manufacturers work with which car assemblers, so further research would need to assess whether or not the reason of all firms in Saxony being located on the axis between the three VW plants is that they are suppliers to these plants, and whether BMW has no suppliers located nearby because it does not work with local suppliers – but clearly BMW does not seem to have any co-locations or industrial condominiums as mentioned in Section 4.1.1 whereas VW seems to have car component manufacturers located in very close vicinity of most of its assembly plants.



Map 1 Overview of sample firm locations

Source: author

Many of the 35 firms in Sachsen-Anhalt are concentrated around the regional capital Magdeburg, seemingly without particular spatial proximity to any OEM's car assembly plant in Eastern Germany – however, relatively close to the headquarters (and production site) of VW in Wolfsburg, which is located in Lower Saxony just outside of Sachsen-Anhalt. This very likely explains these component manufacturers' presence (and suggests a likely integration in the global production network of VW) although, like in the case of the firms in Saxony, this remains to be confirmed empirically. The 11 firms in Mecklenburg-Vorpommern are spread

all over this Land which has no car assembly plant: the 7% of firms located in this region seem to suggest that spatial proximity is not necessarily a determining factor at least for some car component manufacturers in Eastern Germany. Most interestingly however, Map 1 reveals that almost all of the 17 firms in Brandenburg are actually located very close to Berlin: together with the 18 firms located inside Berlin, this group represents an aggregate 22% of German firms in the sample and forms a cluster which is spatially close to Daimler's Mercedes-Benz plant in Ludwigsfelde in central Brandenburg just outside of Berlin.

An alternative way of looking at the location of the Eastern German car component manufacturers in the sample (complementary to their distance to OEMs as discussed above) is in terms of distance from the main financial centres of the region, and in particular of the headquarters of the German Landesbanken which are the main providers of credit to German firms both directly and through the network of savings banks (Sparkassen) they are associated with. While there were 11 independent Landesbanken in Germany before the crisis of 2007, including two which had their headquarters in Eastern Germany (Landesbank Berlin and SachsenLB in Leipzig), several institutions were merged thereafter, only six remain independent today and only one of them has its seat in Eastern Germany (Landesbank Berlin). As a consequence, with the exception of Berlin, the networks of savings banks (which are the main providers of local credit to SMEs) in all regions of Eastern Germany are today associated to a Landesbank which has its headquarters outside the region: Helaba (Landesbank Hessen-Thüringen) with its headquarters in Frankfurt am Main covers Thuringia and Brandenburg, LBBW (Landesbank Baden-Württemberg) with its headquarters in Stuttgart covers Saxony (since its acquisition of SachsenLB in 2008), NordLB (with its seat in Hannover, but also a secondary seat in Magdeburg) covers Sachsen-Anhalt and Mecklenburg-Vorpommern. Put into perspective with the location of the car component manufacturers in this sample, this means that only the firms in and around Berlin as well as those in Sachsen-Anhalt are located in real proximity to their relevant Landesbank, whereas all others, and in particular the ones in Saxony and Mecklenburg-Vorpommern are located at a relatively long distance. In a similar manner, the only firms located close to any (even regional) capital market are the ones in Berlin (close to Börse Berlin) and, to a lesser extent, those in Thuringia (with the stock exchange of Frankfurt am Main located not too far away). Whether or not, and if so then how,

this may impact the capacity or willingness of the firms to obtain bank loans and/or use the capital market to source capital is something Chapter 5 tries to assess.

In Hungary, a breakdown of the 164 firms by NUTS1 region (Figure 16) reveals a strong concentration, with over 4 out of 10 firms, in the central region (Közép-Magyarország) which is by far the smallest of the three regions but also the economically strongest one containing in particular the capital Budapest. The other two regions (Dunántúl covering the western half of the country and Alföld és Észak covering the eastern half) each represent a bit less than a third of the Hungarian firms in the sample. A look at the map (Map 1) clearly shows the concentration in and around Budapest, but also a relatively even distribution of firms all over the entire territory of the country, in other words no particular clustering other than in Budapest and firms located also in the periphery of the country. In terms of relative distance to the assembly plants of OEMs, the map interestingly shows not the slightest concentration of firms around the four OEM production sites in the country, with VW's Audi Hungária plant in Győr and Suzuki's Magyar Suzuki plant in Esztergom (both near the border with Slovakia), Daimler's Mercedes-Benz plant in Kecskemét halfway between Budapest and the border with Serbia and PSA's (formerly GM's) Opel plant in Szentgotthárd on the Austrian border. This landscape contrasts starkly with the situation in Eastern Germany, where a clustering around the OEM plants in and near Thuringia as well as near VW's Wolfsburg is clearly perceptible. Based on the locational data of this study, spatial proximity therefore does not seem to play an important role for the firms in Hungary. This might be a first indication about the nature of the Hungarian car component manufacturers in this study's sample: given that spatial proximity (with co-location and industrial condominiums) is important mainly for the higher tier firms that have a strong and close relationship with the OEMs (cf. Section 4.1.1), the absence of such spatial proximity in Hungary likely suggests that many Hungarian firms are indeed lower-tier firms with weak links to the OEMs, in line with what would be expected based on the literature.

In terms of distance from financial centres, however, the situation is very different: 68 Hungarian firms (i.e. over 4 out of 10 in this study's sample) are located in and around Budapest, i.e. in or very close to the country's only financial center where all major banks of the country (in particular OTP Bank, K&H Bank, Erste Bank, Budapest Bank, CIB Bank and MKB Bank) are headquartered and where the country's only stock exchange (the Budapest Stock

Exchange) is located. Conversely, however, this also means that 96 firms (i.e. almost 60% of the sample) are located further away from this financial centre in more peripheral regions. Whether and how this influences the way the firms source their capital (from banks or other sources) is again something that Chapter 5 aims to explore.

Firm Size

In terms of size, Figure 17 (categorising firms according to the balance sheet size thresholds of the German accounting rules) shows a diversified sample with representatives in all categories, although with different focus between Hungary and Eastern Germany.

Eastern Germany	Firms	%	Hungary	Firms	%
Small	79	50%	Small	99	60%
Medium	42	27%	Medium	44	27%
Large	36	23%	Large	21	13%
Total Eastern Germany	157	100%	Total Hungary	164	100%

Figure 17 Firm breakdown by size category

Source: author

In Germany, the dominant group are the 79 small firms, representing half of the firm sample and the 42 medium-sized ones representing over a quarter of the sample: taken together, these firms are part of the German ‘Mittelstand’, i.e. the family-owned small-and medium-sized enterprises considered as the backbone of the German economy. However, there is also a significant group of 36 large firms representing almost a quarter of the German firms in the sample. These are likely the higher-tier component manufacturers with higher-value add components and stronger ties to the OEMs. The predominance of small and medium-sized firms is even stronger in Hungary, with 99 small firms (i.e. 60% of the sample) and 44 medium-sized firms (27%). As a consequence, only 21 firms (or 13%) of the Hungarian firm sample are large firms. This is another indicator about the likely nature of the firm sample in Hungary: just like the absence of spatial proximity to the OEMs’ production plants as seen above, the predominance of small firms suggests that many of these are lower-tier manufacturers producing simpler components at the lower end of the value-add chain.

As a consequence, the sample of firms selected for this study allows to explore the capital sourcing patterns of firms in all size categories in both regions, but it also reflects the structure of the industry with a predominance of Mittelstand firms (as well as a presence of larger, likely

higher-tier component manufacturers) in Eastern Germany and an even more marked predominance of especially small but also medium-sized (likely lower-tier) firms in Hungary.

4.2.2 Ownership: Contrasting Structures

In terms of ownership, it was possible to identify the ownership type within the sample of firms as follows:

Eastern Germany	Firms	%	Hungary	Firms	%
Home Individual	55	35%	Home Individual	76	46%
Foreign Corporate	8	5%	Foreign Corporate	35	21%
Home Corporate	25	16%	Home Corporate	9	5%
Home Mixed	16	10%	Home Mixed	9	5%
Other	9	6%	Other	18	11%
Unknown	44	28%	Unknown	17	10%
Total Eastern Germany	157	100%	Total Hungary	164	100%

Figure 18 Firms by ownership type

Source: author

Predominance of Firms Owned by Domestic Individuals

In Eastern Germany, the largest group by far, representing over a third of the sample, are the 55 firms owned by private individuals, usually families having established the firm and still being involved in their management, assuming the roles of CEO and often also those of all other key management positions. A related group are the 16 ‘home mixed’ firms, which are firms that are owned partly by domestic individuals and partly by a domestic firm. As discussed in Chapter 3, these shareholding firms are likely not substantive corporates but rather entities through which individuals hold another portion of the firms (for reasons linked for example to the easier transferability of the shares to successors within the family). Although this was not empirically assessed within the scope of this study (and should be done by further research), this was assumed to be reasonably likely and therefore the firms in the ‘home mixed’ category are combined with the firms in the ‘home individual’ category for the analysis of capital sourcing patterns in Chapter 5. Another significant group of German firms are the 25 (16%) ‘home corporate’ firms owned by other German firms. Some of these will also be mere shareholding entities for individuals (meaning that they should in fact be counted with the group of firms owned by domestic individuals), while others are owned by other car component manufacturers. No distinction was made here between Western and Eastern Germany although it would be interesting to do so in follow-up research because in many

cases the German owner of an East German firm is likely to be a firm located not in Eastern but in Western Germany.

None of the firms within the sample is directly owned through the capital market, i.e. has its equity traded on the stock market. Such firms would represent the most direct connection to capital markets and principles of shareholder value. As can further be seen from Figure 18, it was not possible to establish the ownership for all firms in the sample. The figure was particularly high in Eastern Germany with 44 firms, that is over a quarter of the sample, not listing their list of shareholders on the official websites. These firms were nevertheless kept in the sample to include them in the patterns of capital sources collected.

Only 8 of the 157 firms in Eastern Germany (i.e. 5% of the sample) are owned by foreign corporates, but it is worth having a closer look at these:

- **Truck-Lite Europe GmbH**, based in Eisenach and originally a Thuringian family owned business founded in 1868, was nationalized in 1948 and re-privatised in 1990 by sale to Stuttgart's Robert Bosch GmbH, one of the largest car component suppliers worldwide, having its equity listed on the Stuttgart stock exchange but still almost entirely owned by the founding Bosch family. In 2002, the Eisenach firm was sold to US car component manufacturing group Truck-Lite, itself owned by private equity.
- **Autotest Eisenach GmbH**, based in Eisenach, has an interesting history of evolving ownership: registered in 2005, the firm was in 2007 purchased by the EDAG-Group, a global car component developer based in Wiesbaden (Hessen) operating in 17 countries and having its equity traded on the Frankfurt stock exchange. In 2011, EDAG sold the firm to Italian car component manufacturer Autotest AG (based in South Tyrol), originally also a family owned business founded in 1983 but itself purchased by German private equity firm Ceterum Holding in 2016. Ceterum Holding is based in Wernigerode in Saxony-Anhalt and invests primarily in small and medium-sized firms of the automotive, electronics and medical sectors. This means that Autotest Eisenach GmbH is actually not ultimately owned by a foreign car component manufacturer, but rather a very rare example of a firm owned by a Germany private equity firm – and what is more one that is headquartered in Eastern Germany.
- **Boryszew Kunststofftechnik Deutschland GmbH** (formerly Altmärkter Kunststoff GmbH, AKT), based in Gardelegen in northern Sachsen-Anhalt was originally founded

in 1991 and acquired by the Boryszew group after it went insolvent in 2011. Boryszew is a Polish car component manufacturer founded in 1911, nationalized under state-socialism, re-privatised in the early 1990s and has its equity listed on the Warsaw stock exchange since 1996. Boryszew acquired the firm in Gardelegen in 2011 as part of its globalization that started in 2010 with investments not only in Germany but also in Italy, France, Spain, Brazil, China, India and Mexico.

- **Novero Dabendorf GmbH** (formerly Funkwerk Dabendorf GmbH), located in Dabendorf near Berlin, was originally part of the Funkwerk AG group which was founded in 2000 with its seat in Kölleda in Thuringia and listed its equity on the Frankfurt and Munich stock exchanges. The Dabendorf firm was sold in 2012 to Novero, a Düsseldorf-based car component manufacturer formed in 2008 through a management buy-out of Nokia's automotive business – and Novero was itself purchased in 2015 by Laird plc, a global UK-based electronics group listed on the London Stock Exchange.
- **Alupress Berlin GmbH**, is owned by the family-owned Alupress AG based in Italy (South Tyrol).
- **ARKAL Automotive GmbH**, based in Auengrund in Thuringia is owned by Israeli car component manufacturer Arkal founded in 1997.
- **Nemak Europe GmbH**, based in Wernigerode in Sachsen-Anhalt is owned by Nemak, a global automotive component manufacturer based in the Monterrey area of Mexico and having its shares publicly listed but owned mainly (75%) by Mexican industrial conglomerate Alfa (itself publicly listed) and a stake of about 5% also held by Ford.
- **Oberaigner Automotive GmbH**, based in Laage in Mecklenburg-Vorpommern was founded in 2011 by Firma Oberaigner GmbH, an Austrian family-owned business founded in 1977.

It was not possible to analyse the ownership of all firms in the sample in the same details as done for the eight firms above (in particular for the 35 Hungarian firms owned by foreign corporates and the 25 German and 9 Hungarian firms owned by domestic corporates), but what the above illustrates is the sometimes complex and evolving history of ownership by car component manufacturers once they are in the circuit of ownership by other car component manufacturers, whereas firms owned by individuals often remain in the hands of the same

family for many years. The above also suggests that firms owned by foreign corporates as identified in this study are indeed generally owned by other car component manufacturers and therefore integrated in global production networks not only through their commercial relationships but also through their ownership. It finally evidences that whereas none of the firms in the sample were found to have their equity directly traded on the stock market or owned by private equity, most of those that are owned by foreign corporates are in fact indirectly related to stock markets and private equity as this is what owns most of the foreign car component manufacturers owning firms that are part of the sample of this study. Chapter 5 tries to assess whether this translates into any particular ways of sourcing capital for these firms.

The Hungarian firm sample has a very different composition in terms of ownership than the Eastern German one: 76 of the Hungarian firms, i.e. with 46% almost half of all firms are owned by Hungarian individuals (i.e. domestic family owned businesses), a much higher proportion than the 35% of Eastern Germany. Furthermore, 35 firms (21%) are owned by foreign corporates, again a significantly higher proportion than the 5% in Eastern Germany. By contrast, the other categories (home corporate, home mixed, other and unknown) represent only 31% in aggregate (whereas the aggregate proportion of these four categories is 60% in the Eastern German sample). This is another indicator that the dichotomy of Hungarian car component manufacturers as identified in the literature (Dicken 2003) between locally owned lower-tier suppliers and foreign-owned higher tier suppliers is well reflected in the sample of firms of this study.

The foreign owners of Hungarian firms include firms from as diverse a geographical spectrum as Austria, Belgium, Cyprus, France, Germany, Italy, Japan, the Netherlands, Sweden, Turkey, the UK and the US. It was not analysed for these firms to which extent they are substantive firms (i.e. GPN firms having established or purchased the firm as a subsidiary) or shell firms (merely holding the firm on behalf of an ultimate shareholder) and to which extent they are themselves owned by private equity or via the capital markets. However, the result of such an analysis would be expected to be in essence similar to the one of the 8 foreign corporate firms in Germany, i.e. generally these would be expected to be larger car component manufacturers themselves owned via the stock market or by private equity.

Strong German Mittelstand vs. Dichotomy of Component Manufacturers in Hungary

When combined with the information about the firms' size as discussed above (Figure 19), the pattern appears even more clearly. Setting apart the significant number of firms for which ownership could not be established (this remains to be done by future research), it very clearly appears that the smaller firms in Germany are overwhelmingly owned by domestic individuals (especially if the 'home mixed' firms are considered as ultimately fully owned by domestic individuals as well), whereas corporate ownership predominates for the large firms and the situation is balanced in the medium-sized firms. This evidences that most of the firms in this study's sample are indeed part of the German Mittelstand, i.e. small or medium-sized firms owned by domestic families or individuals.

In Hungary, the situation is even more contrasted with the vast majority of small firms being owned by domestic individuals, whereas most of the medium-sized and large firms are owned by foreign corporates, confirming indeed the dichotomy of the sector as was expected based on the literature. It is interesting to note that domestic capital seems to play only a very limited role in Hungary – or when it does, it is materialised by individuals (hinting at a rather small scale industry) rather than by domestic firms (which could represent a larger scale industry). There are some exceptions however, with a very small number of individually owned medium-sized and large firms being individually owned, such as Videoton Holding Zrt, for example, which defines itself as the 'largest Hungarian industrial group being in local private ownership' with almost 9,000 employees in 11 locations and is owned by three individual business men.

Knowing whom a firm belongs to, who its shareholders are and where they are located is key when assessing the potential implications of a firm's geography (with locations and relations) for the way the firm finances its activities. On the one hand, shareholders are themselves one of the main sources of capital through the equity they inject at inception of the firm or during its life, such as, for example, for the financing of significant investments, the acquisition of other firms, the expansion into new markets etc. The availability (and conditions) of such capital to a firm is very unequal depending on who its shareholders are: for the individuals owning an SME, this firm will often constitute a significant portion of their wealth, and they are likely not to have the financial resources to inject further significant amounts into the firm.

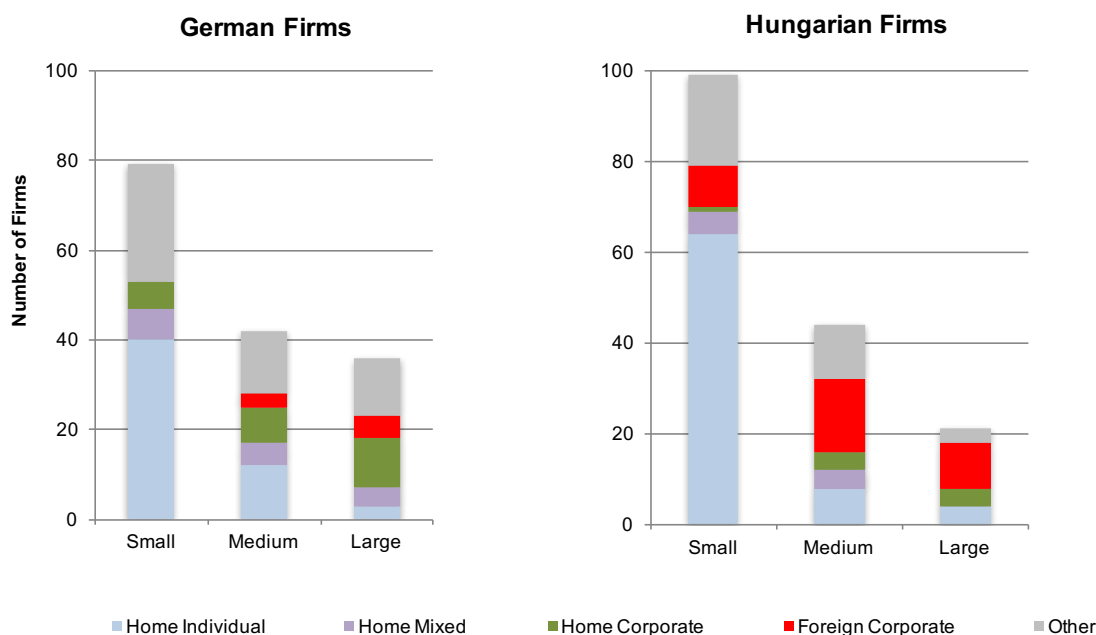


Figure 19 Firms by size and ownership type

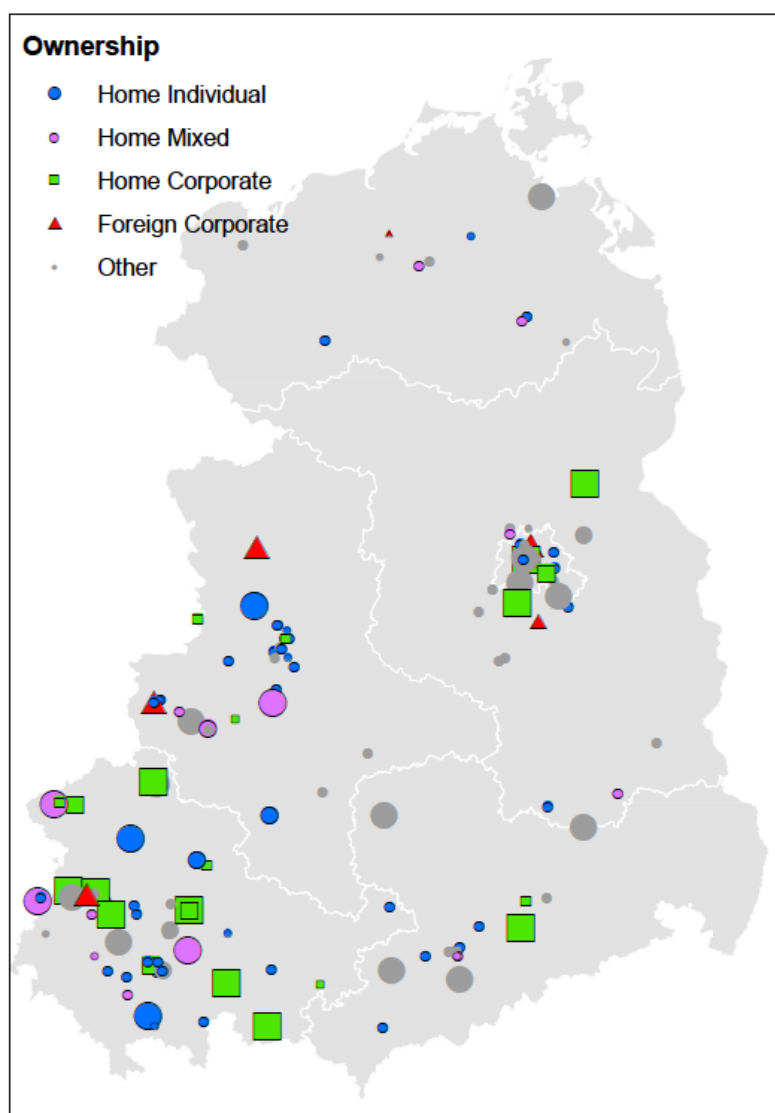
Source: author

By contrast, a large GPN firm owning the firm as a subsidiary probably has the capacity to generate profits, or to borrow capital at its level, and to inject these amounts as equity into the firm to finance significant investments. On the other hand, shareholders have significant power over strategic decisions taken in the firm, regarding the distribution of profits, the utilisation of other sources of capital and so on. The expectations and time horizon, in terms of profitability and dividend distribution are likely not to be the same between a family owning an SME founded by one of their ancestors, a GPN firm operating the firm as a subsidiary in an expanding market and an asset manager managing the shares as a financial asset on behalf of institutional investors. As a result, the ownership type of the firms is likely to have a significant impact on the firms' financing patterns, access to both equity and other forms of capital and further financial behaviour such as profit distribution, as explored in Chapter 5.

Geographical patterns of ownership and size

Combining the firms' location, size and ownership into one combined view, an interesting landscape emerges. In Eastern Germany (Map 2), most of the larger firms (mostly owned by other German firms, green squares) tend to be located relatively 'centrally' (i.e. closer to the OEM's manufacturing sites) in Thuringia, on the VW axis in Saxony, in Berlin or in the Saxony-

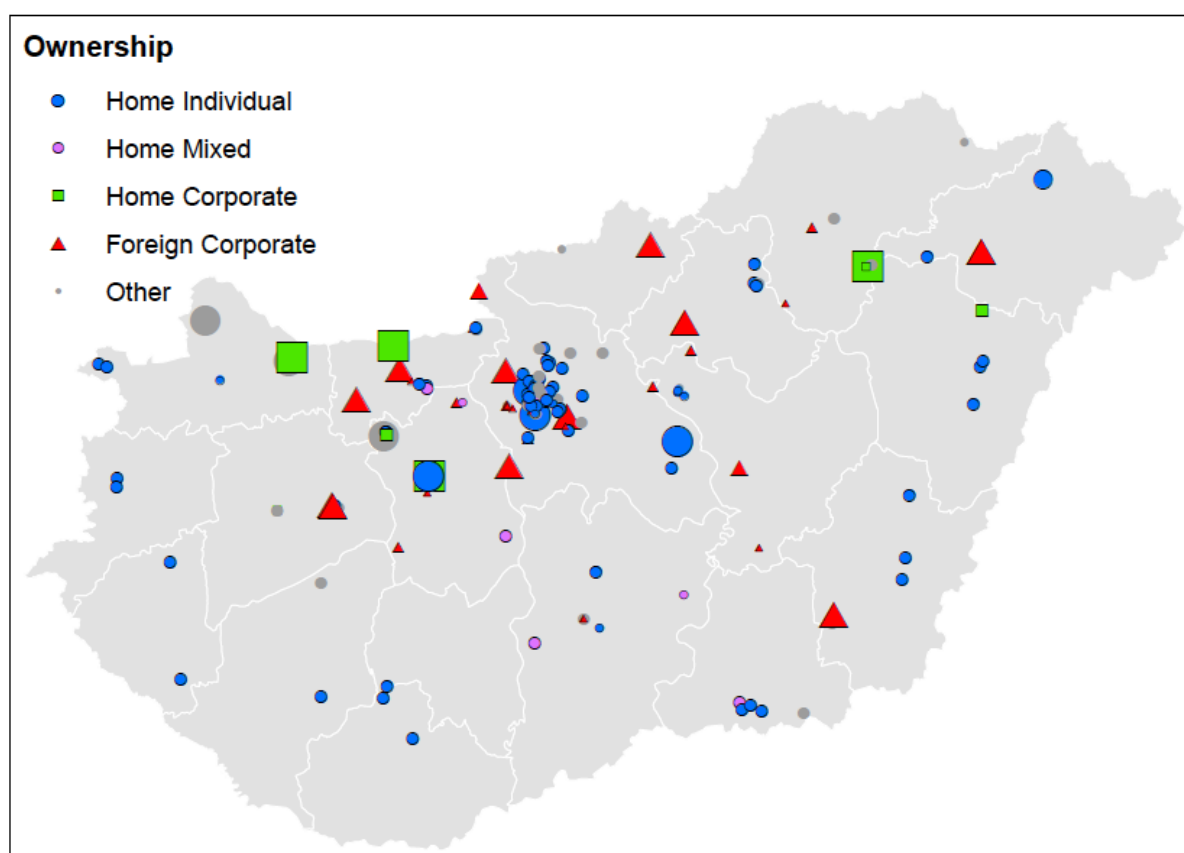
Anhalt vicinity of VW's headquarters in Wolfsburg, suggesting that they likely are higher-tier suppliers with a closer relationship to the OEMs. There are, however, also many small firms located within the OEM crescent (bordering the edges of Eastern Germany from the Sachsen-Anhalt zones bordering Wolfsburg, including Thuringia and VW's axis in Saxony) and the Berlin area. The 8 firms owned by foreign corporates (red triangles) are almost all located close to the border with Western Germany or in Berlin i.e. relatively 'centrally' – with the exception of the small Oberaigner Automotive GmbH with its very remote location in the middle of Mecklenburg-Vorpommern.



Map 2 Location, size and ownership of German firms

Source: author

By contrast, most of the firms located outside the OEM crescent and Berlin are small firms – suggesting that just like their counterparts in Hungary, these are individually owned (blue circles) lower-tier suppliers with less strong ties to the OEMs. This is particularly striking in Mecklenburg-Vorpommern where almost all of the 11 firms (with only one exception) are small and, to the extent this could be identified, domestic family owned businesses. With the exception of the very peripheral situation in Mecklenburg-Vorpommern however, the situation in Eastern Germany is relatively balanced with firms of all sizes and ownership types co-existing in all regions where there is a strong presence of car component manufacturers.



Map 3 Location, size and ownership of Hungarian firms

Source: author

The picture in Hungary (Map 3), by contrast, looks very different. The map shows far fewer corporately owned firms (green squares, mostly large or medium-sized) and firms with unknown ownership (grey circles). The landscape is really dominated by the dichotomy between mostly small locally owned family businesses (blue and purple circles) and mostly medium-sized or large firms owned by foreign corporates (red triangles). There is also a clear tendency for the locally owned firms to be located either extremely centrally in Budapest or

very peripherally all over the country, whereas most of the foreign owned firms are located not inside Budapest but rather in its region and the surrounding areas or central Hungary (only some of which however in any perceptible vicinity to the OEM's plants in Győr and Esztergom, and none near Szentgotthárd or Kecskemét).

The sample of firms in this study therefore includes two groups of small, family-owned firms (identified as the lower-tier suppliers with weak ties to the OEMs and at the lower end of the value chain in the literature): those in a very central location in Budapest (i.e. close to banks and potentially other financing sources) and those located in the periphery, far away from the OEMs and any financial centre. Chapter 5 explores whether there is any difference in the way these two groups of family business source their capital, as well as whether the situation is any different for the foreign owned firms, whether they be located rather centrally or more in the periphery as is the case for some of them.

4.3 Capital Provision: Institutional Infrastructures in Hungary and Eastern Germany

After having discussed the structure of the car component manufacturing industries in Hungary and Eastern Germany and the characteristics of the firm sample analysed with its distinct ownership structures reflecting one aspect of the specific variegations of capitalism in these two regions, this section discusses institutional infrastructures of capital provision in these regions.

As shown in Section 2.1.2, capitalism unfolds in different forms in different regions depending on the institutional context prevalent therein. Hall and Soskice (2001b) and Crouch *et al.* (2009) recall that geographical variegations in the way firms access capital impacts corporate governance and shapes the activities of the firms. This section explores how the way firms in Hungary and Eastern Germany obtain capital from different types of sources depends on the institutional infrastructures of capital provision in these regions as conceptualised within the theoretical framework of variegated capitalism presented earlier. It looks at the geographical foundations (Clark and Wójcik 2007: 57-58) of capital markets and private equity/venture

capital, banking and foreign direct investment through global car component manufacturers in these regions.¹⁵

Institutional and State Policy Context

Capital provision to car component manufacturers in Hungary and Eastern Germany by different types of capital providers is framed by the institutional and state policy context of capital provision prevalent in these regions. This context cannot be dissociated from the fact that these regions underwent a fundamental system change from state socialism to market economies in the 1990: both institutions and state policies were deeply transformed, and through these policies the new governments played a crucial role in framing the extent to which foreign capital providers were enabled or even encouraged to enter and invest capital into these regions. According to Drahekoupil (2009), most post-communist governments in the region originally pursued internally oriented reform strategies focused on privileging domestic sources of investment, but by the end of the 1990s state policies had shifted towards externally oriented strategies focused on promoting the economy's competitiveness by encouraging foreign direct investments. While the reasons and exact circumstances for this policy shift (and resulting dominance of foreign capital in most countries) differ from country to country, Drahekoupil (2009) highlights three connected factors providing a general explanation and context: the original internally oriented strategies being exhausted by the end of the 1990s, foreign investors becoming active in the region after an initial period of hesitation, and the important role played by the connection of domestic actors with foreign capital, fostering the necessary political, social and institutional support for state policies more favourable to opening up the economy to non-domestic investment.

With respect to the original internally oriented strategies, these were originally pursued by most governments in the region to explicitly avoid foreign direct investment, aiming to foster the development of national capitalism and national capitalists instead (Drahekoupil 2009). The one most notable exception was Hungary which pursued an externally oriented, FDI-reliant strategy from the very beginning of the 1990s (Swain 1996). As Drahekoupil (2009) notes, the initial reluctance of most other governments to foster FDI was in contrast to what

¹⁵ For further context on the financial systems in these regions, cf. also the FESSUD reports on Germany and Hungary (Detzer *et al.* 2013; Szikszai *et al.* 2013; Detzer *et al.* 2014; Detzer and Hein 2014; Badics and Szikszai 2015)

most Western analysts would have expected (and recommended) at the time: since the mid-1980, international financial institutions such as the World Bank had been promoting FDI as a tool of economic development, FDI was widely seen as the more effective strategy compared to inward oriented strategies, and FDI had effectively increased substantially across the globe since the late eighties. This view was not shared by most governments of Central and Eastern Europe, however, resulting in an initial phase where (with the exception of Hungary) the institutional context and state policies were not favourable to capital provision by foreign actors.

With the exception of Hungary therefore, where car component manufacturers like Ford, GM and Suzuki made significant direct investments as early as 1990 and 1991 (cf section 4.1.2), only very little FDI was actually attracted into Central and Eastern Germany in the early 1990s, and FDI was even virtually absent from Slovakia in the mid-1990s (Smith and Ferencikova 1998). Over the course of the 1990s, however, an increasing number of foreign companies expanded into a range of sectors in Central and Eastern Europe, including but not limited to car and car component manufacturing. The reason for this later than expected but eventually very clear opening up of the region to foreign capital was a combination of foreign investor's increased knowledge and therefore comfort in the region, fostered by an increasingly supportive context of state policies that by the end of the 1990s had shifted towards clearly supporting foreign direct investment and explicitly attracting foreign investors in most cases (Drahokoupil 2008). One key reason for this shift in state policies, as Drahokoupil (2009) notes, is the role played by the development of domestic actors connected to international capital, i.e. rather than the direct transmission of foreign practices into domestic policy, their transmission via domestic 'coalitions of social actors' (Drahokoupil 2008: 197) which had the required political, social and institutional domestic leverage to push for a change in domestic policy. The result of these processes was the development of particular varieties or variegations of capitalism in these transition economies, as discussed in further detail by Myant and Drahokoupil (2011).

A concrete example of such a transmission of foreign practices via an 'investment promotion community' connecting actors from both outside and inside the country is given by Sellar and Pastor (2015) in respect of Italian foreign direct investment into Italy. As a corollary to these FDI-supporting policies leading to foreign companies investing in Central and Eastern Europe,

foreign banks expanded into the region as well, as illustrated by the study of Sellar (2015) on Italian banks following their textile and clothing manufacturing clients into Central and Eastern Europe as these increased their outsourcing of production into the region. Given the sectoral industrial differences between the garment sector and car component manufacturing, the implications may differ in particular with regards to the role played by the banks in terms of 'cultural intermediation' and knowledge transfer observed by Sellar (2015) in his study, but the presence of foreign-owned banks accompanying their clients in their expansion and outsourcing of activities into Hungary in particular is a phenomenon that could be observed in car manufacturing as well.

Capital provision in these regions thus ended up being strongly shaped by foreign institutions (both industrial firms doing foreign direct investment and banks establishing a local presence to provide loans to firms) as a result of deliberate government action and state policy creating the correspondingly supportive institutional context of capital provision. The 'success' of these strategies is well illustrated for example by the dominance of foreign direct investment both in the Hungarian car production (as discussed in section 4.1.2) and among Hungarian car component manufacturers (as discussed in section 4.2.2), and by the dominance of foreign-owned banks in the Hungarian banking landscape (cf. later in this section). It is much less apparent in Eastern Germany, likely as a result of the very different path taken by this region compared to other Central and Eastern German economies: having been absorbed practically overnight into the pre-existing market economy of Western Germany, the focus of state policy there was on the integration between the two parts of the country, rather than on foreign direct investment or the promotion of foreign banks. The role played in Hungary by foreign direct investment and foreign banks was thus in Eastern Germany largely assumed by the investment of Western German capital and the expansion of Western German banks into Eastern Germany.

Capital Markets and Private Equity/Venture Capital

The degree to which firms in Hungary and Eastern Germany seek to finance investments through capital markets strongly depends on the geography and the relevant institutional infrastructure of capital provision. In terms of raising capital for investments for example, Germany is traditionally very much debt focused while the UK is more equity focused: while the average equity rate (including both external equity and retained earnings) of UK firms

since the early 1980s has been around 50%, it has been below 20% in Germany (Klagge and Martin 2005). While there is a relatively high number of publicly listed companies in Western Germany, there is, for historic reasons, only a very small number in Eastern Germany (Klagge and Martin 2005). The following summarises the context of capital markets in both Hungary and Eastern Germany as well as private equity and venture capital in these two regions.

Opened in the summer of 1990 as the first post-communist stock exchange in Central and Eastern Europe, the Budapest Stock Exchange is today one of the largest stock exchanges in the region. It covers all capital market transactions on the Hungarian market as well as a significant share of transactions from other issuers in the region. As of September 2018, the Budapest Stock Exchange listed the shares of 41 companies and bonds of ten companies (some of which also have their equity listed). This list appears very small compared to the over 2,000 companies listed on the London Stock Exchange or the over 2,400 companies listed on the New York Stock Exchange. Virtually all of the companies listed on the Budapest Stock Exchange are Hungarian. The private or public offering of securities (i.e. stocks, bonds or other instruments through which capital is raised through the capital market) on the Hungarian capital market is governed by various regulations, which foresee a certain number for eligibility criteria a firm needs to fulfil if it wants to list its equity or bonds on the Budapest Stock Exchange. These criteria do not include any requirement of a minimum size (except for listing on the prime equity market) so SMEs are not formally prohibited from raising capital through the capital market. However, firms that do so on the BSE tends to be larger and there must be other criteria making it more difficult or less attractive for small and medium-sized firms to raise capital through the capital market. As a result, even though the capital market exists in Hungary in the form of the Budapest Stock Exchange, it is very small in comparison with capital markets in the US, the UK or even Germany and not a customary source of capital for car component manufacturers in this region.

The situation is a little different in Germany which is less centralized than Hungary and has not only one but several local capital markets - even though the largest one, the Frankfurt Stock Exchange, represents 85% of turnover and is therefore largely dominant. Out of the other

seven regional stock exchanges located in Germany only one¹⁶ is based in Eastern Germany: Börse Berlin is a trading place for a very large number of mostly international issuers and for example trades almost all NASDAQ securities but also companies from China and South Africa. It is also, however, the 'home' market for about 45 companies for whom Berlin is the first (and sometimes only) place where their equity or bonds are listed. Most of these firms are German but interestingly the list also includes 7 non-German companies from Malta, the UK, Switzerland and Austria. None of these firms, however, are car component manufacturers. Among the conditions for trading equity on Börse Berlin, the relevant regulatory and legal context would need to be considered and potential conditions could be firm size for example, publication of annual accounts under certain standards, or others. Another factor to be kept in mind is investor appetite, i.e. the extent to which investors prefer to invest through one capital market (which they know well) rather than through another (which they know less).

The above focuses only on the capital markets located within Hungary and Eastern Germany respectively, but firms operating within these regions can in principle access capital markets in other regions, and it is therefore necessary to also consider this. The Frankfurt Stock Exchange is a very open and international stock exchange (and of course located in the same country as Eastern Germany), with almost 500 companies having their equity listed there. Most of these companies are German but almost 60 are from other countries, mostly European but also including the USA, Russia and China. None of these companies however is Hungarian and only very few of the German ones are based in Eastern Germany: interesting to note that the geography of firms using the Frankfurt Stock Exchange as a source of capital seemingly reaches across the globe, but does not include the geographically much closer regions of Hungary and, even more strikingly, Eastern Germany. In addition, the accessibility of the capital market as a source of equity capital is generally higher for larger firms than for SMEs, but SMEs are not by definition completely excluded. The Frankfurt Stock Exchange introduced a dedicated segment for the equity of traditional SMEs (very much the type that can be found among car component manufacturers) in 1999 but this was closed in the early 2000s, so that, today, there is a lack of dedicated structures supporting the provision of public

¹⁶ Leipzig is sometimes listed as home to one of the local exchanges but this is the European Energy Exchange (EEX), a trading platform specialised in energy related contracts and derivatives and as such not a 'capital market' on which a company can raise capital in the form of equity or bonds.

equity to German SMEs (Klagge and Martin 2005). Other relevant questions include how global financial markets act as standard setters (for disclosure, corporate governance standards, internal accountability, external transparency, cf. chapter 7 of Clark and Wójcik (2007)), how the cross-listing of companies may lead to the diffusion of standards between jurisdictions, whether the relationship between home and host corporate environment is important for decision to cross-list, potential reasons why firms list their equity on certain stock exchanges rather than others or whether cross-listing could be seen as a means to submit oneself to stricter corporate governance standards. According to Clark and Wójcik (2007: 133-134), "US cross-listing is a form of access to global capital markets and increases firm-level incentives for good corporate governance" and "at the heart of corporate governance lies the risk that corporate managers will misuse or even steal the capital entrusted to corporations". Most companies, if listed, cross-list on more than one stock exchange (Clark and Wójcik 2007: 144).

Given that newer and smaller firms traditionally struggle to raise equity through the stock market, private equity / venture capital firms aim to address this gap since the late 1980, particularly in the US and the UK but also in countries like Germany (Klagge and Martin 2005). However, like the capital markets, this source of capital concerns only a small portion of firms and even in these firms only a small portion of the equity. There has been some geographically interested research in this area, in particular regarding a potential 'equity gap' regarding venture capital for firms located in peripheral regions (cf. e.g. Martin *et al.* 2005; Wray *et al.* 2011). In many cases, the capital used by private equity to invest in firms combines equity contributed by the investors the private equity firm manages with a bank loan taken on by the private equity firm, hence the term 'leveraged buy-out' (Scheuplein and Teetz 2014), and this debt is then pushed down after the acquisition, hence increasing the indebtedness of the firm (to sometimes potentially less sustainable levels weakening the firm as such). This means that a private equity take over cannot only modify the equity relationships in a firm but also impact the firm's other sources of capital (replacing retained earnings by bank loans).¹⁷ Private equity tends to aim less for high yield (dividends) during the limited time that they hold shares in the firm but rather to achieve a high profit when they on-sell the shares after a certain number of

¹⁷ Scheuplein and Teetz (2014) provide a more general characterization of private equity and its mechanisms.

years (Scheuplein and Teetz 2014). This is why private equity firms tend to exercise a strong influence on the firm's management and operations during their holding period. They are 'activist owners' rather than 'coupon cutters' (Scheuplein and Teetz 2014: 6).

The venture capital market could be a potential mitigant to the difficulty of SMEs in accessing the capital market but still remains marginal for German SMEs. German policy focuses less on the increase of public capital provision to SMEs than on the creation of 'innovative private equity instruments' (Klagge and Martin 2005: 411) driven by the KfW (Kreditanstalt für Wiederaufbau) and the associated Mittelstandsbank (Klagge and Martin 2005). There has also been an effort to develop 'hybrid' financial instruments (mezzanine finance) qualifying as equity under EU/Basel-rules but at the same time addressing the traditional resistance of SME-owners to yielding control to external shareholders. The German association of private equity firms (*Bundesverband Deutscher Kapitalbeteiligungsgesellschaften, BVK*) has over 120 members. Most of them are based in Frankfurt or Munich, but hardly any of them invest in Eastern Germany. According to Scheuplein and Teetz (2014), almost 200 German firms were taken over by private equity firms in 2013, so private equity is not as marginal in Germany as one could think although only very little of this activity concerns Eastern Germany. Why do a firm's shareholders sell all or part of their shares to private equity firms? Apart from shareholders that are private equity firms or other financial investors (and where the on-sale forms part of the original strategy), Scheuplein and Teetz (2014: 40) mention the following main motivations: succession (*Nachfolgeregelung*), growth, restructuring, monetization or change in group strategy leading to a spin-off of part of the firm's activities.

Although private equity and venture capital started to develop in Hungary as early as 1990 and Hungary quickly rose to be the most developed private equity market in Central and Eastern Europe by 2000 (Szikszai *et al.* 2013), Hungary today ranks among the European countries with the lowest presence of private equity (measured in terms of proportion of GDP) alongside Germany but also Italy and other Eastern European countries such as Poland or the Czech Republic, while the high end of the spectrum is occupied by the UK followed by the Nordic countries Sweden, Denmark and Norway (Bedu and Montalban 2014). Most aspects of private equity (such as the legal environment, types of actors and types of structures) in Hungary are similar to those found in Western Europe, but investments are mainly made into larger companies with only very limited investment in small and medium-sized companies

(Szikszai *et al.* 2013). The rate of private equity and venture capital investments in Hungary has significantly declined since the crisis in 2008 and only little activity can be evidenced today, for reasons such as the small size of the Hungarian economy, the end of privatization (i.e. the lower number of large firms being sold by the state) and the unpredictability of economic policy (Szikszai *et al.* 2013).

Overall, the institutional context of capital provision to firms in Hungary and Eastern Germany through capital markets and private equity / venture capital evidences a comparatively less developed presence than in comparatively more capital-markets driven economies such as the US or the UK.

'Patient Capital': Banks and Foreign Direct Investment

Just like the capital market and private equity, the structure of the banking sector in Hungary and Eastern Germany has its specificities which are briefly discussed below. The literature considers jurisdictions such as Germany to be characterised by a strong and often long-lasting relationship which is built between firms and their 'house banks' (Hausbanken) while others (such as Anglo-Saxon contexts in particular) are understood to be very different in that the relationship between firms and banks is more transaction driven and less relationship based.

In Germany, banking is traditionally marked by a strong relationship between the banks and the firms. Usually these German banks are domestic (such as, for example, Deutsche Bank, Commerzbank and the regional banks such as Helaba, Bayerische Landesbank, HSH, LBBW etc.). There are no major foreign or foreign-owned banks that have a material stake of the aggregate loans granted to commercial firms in Germany. Firms in Germany tend to have one 'relationship bank' (their '*Hausbank*' or 'home bank') with which a relationship is built over the years and where individuals from the bank and the firm know each other well. The personal relationship between key actors within the bank and the firm means that the firm will get most or all its bank loans from that bank over many years (Handke 2011).

The situation in Hungary is very different to the one in Germany. While the privatisation of the Hungarian banking sector started only in 1994, i.e. comparatively late compared to the Czech Republic or Poland (Szikszai *et al.* 2013), most major banks present in Hungary today are foreign or foreign-owned, such as, for example, Erste Bank and Raiffeisen (both Austrian) and Unicredit Bank (Italian). The only major Hungarian bank with a domestic ownership is OTP,

although the current Hungarian government aims to bring more large Hungarian banks back into domestic ownership (such as for example MKB, formerly owned by the German BayernLB, which was recently sold to a consortium of Hungarian and foreign equity funds). While the indebtedness of Hungarian firms (i.e. the degree to which they use bank loans as a capital source) increased markedly in the first decade of the 21st century, indebtedness levels have been continuously decreasing since (Szikszai *et al.* 2013), meaning that the number of firms that use bank loans as a capital decreases and/or that the firms that use bank loans as a capital source do so in a smaller proportion compared to their aggregate capital sources. This marked decline in corporate lending in Hungary since the financial crisis is even stronger than in the other Central and Eastern European countries where corporate lending has decreased to a lesser extent or even increased (Szikszai *et al.* 2013).

When trying to understand reasons why firms may or may not get loans from banks, it is also necessary to look at what the banks do with them, i.e. whether they keep them on their balance sheet once they have been made to the firms. Banks can, in principle, either keep them on their balance sheet or sell them on. One form of selling them on is to securitise them. i.e. sell them to a special purpose vehicle that finances this acquisition by issuing bonds subscribed by capital market investors: these investors then effectively end up being the (indirect) owners of the capital provided in the SMEs. The securitization of SME Loans is still relatively rare in Europe but much more common in the US, where it developed after 2008 when banks significantly tightened their lending guidelines and reduced the number of loans they granted to SMEs. Securitising the loans is in this case seen as a way to 'free up' the banks' balance sheet, enabling it to extend more SME loans or use its balance sheet otherwise. In the US, this had been done for a long time already with all types of loans, notably sovereign debt in the 1980s, as regulators wanted banks to clean up their balance sheets. Non-bank specialty finance companies seized this 'opportunity' and developed SME securitization during this period (S&P 2013). The securitization of SME loans consists in the sale of a series of loans granted by a bank or other financial institution to SMEs and then sold (partly or fully) to a vehicle which issues bonds subscribed by capital market investors, often insurance companies. While originally typically 100% of the loan was on-sold to the vehicle, regulatory requirements in the US and in Europe today require the originator to keep at least 5% to increase the alignment of interests between the originator and the investors. In many instances, the

'attractiveness' of the bonds for the investors is enhanced by the fact that either the underlying SME loans or the issued bonds are guaranteed by a public institution such as the state or a public institution (e.g. the SBA in the US, the EIF in Europe), meaning that if the loan/bond is not repaid by the SME at maturity, the investors get their money back from the guaranteeing institution. This reduces the probability that the investors do not recover all their capital at maturity, increases the 'risk/reward' for investors and will typically also reduce the level of remuneration requested by investors to invest in that transaction.

As discussed in this chapter, car component manufacturers in Hungary and Eastern Germany are a diversified group of firms of all sizes and ownership types, located in both central and peripheral regions of both countries, sometimes in close proximity to their shareholders and to financial centres with other types of capital providers, and sometimes at an important distance. The institutional context of capital provision in these two regions is particular and the reflection of these two regions' own national and regional variegations of capitalism, with a comparatively low prevalence of capital markets and a role of banks that is markedly different between Hungary and Eastern Germany. Having thus presented the empirical context of this study in light of the conceptual framework developed in Chapter 2, the study is now ready to proceed to a discussion of the empirical findings: this is done in the next two chapters, first discussing the variegated patterns of capital sourcing that have been observed, and then discussing, based on the information available, what reasons this might have – in particular with regards to the firm's embeddedness in specific institutional infrastructures of capital provision – and what effects it might have – in particular with regards to the firm's governance and local and regional development implications.

Chapter 5 Variegated Patterns of Capital Sourcing

This chapter is the first of two that present and discuss the empirical findings of this study. It explores which capital sources car component manufacturers in Hungary and Eastern Germany primarily use and which patterns can be empirically observed in the prevalence of certain capital sources over others, depending on the firms' characteristics such as location (evidencing aspects of national and regional variegations of capitalism), size or ownership (in particular by other GPN firms) analysed from a geographical point of view (highlighting potential regional capital gaps for example). Potential reasons and implications of these patterns are then discussed in the next chapter.

The chapter is organised in two parts. The first part (5.1) illustrates the variegation in the patterns observed for the utilisation of long-term capital sources such as industrial equity (provided by individual owners or other car component manufactures, i.e. another GPN firm, owning the firm), bank loans and subsidies, and discusses the marked absence of any direct financial equity such as capital markets or private equity – highlighting certain characteristics of the relevant variegations of capitalism in Hungary and Eastern Germany. It further discusses the utilisation of short-term capital sources such as trade liabilities between GPN firms and short term bank loans. The second part (5.2) then focuses on retained earnings, as a source of capital produced by the firm itself over time. Retained earnings clearly emerge as an often overlooked but crucial source of financing, present in almost all firms (and sometimes their predominant or even exclusive source of capital) but to a degree that varies depending on a range of factors such as the firm's location in more central or peripheral areas and on its GPN integration through ownership ties. This is a central finding of this study highlighting certain differences between the relevant variegations of capitalism, the impact of the firm's integration (or not) through ownership ties in global production networks and the likely existence of regional capital gaps as discussed in Chapter 2. By exploring these variegated patterns of capital sources observed in the sample of firms, the chapter answers the first of the three research questions formulated in Chapter 2 (*how* are the firms financed and which geographical factors impact this the most) and thereby sets the stage for the remaining two research questions (*why* is that so and *what effects* this has) explored in the next chapter. It evidences (i) that there is variegation of capital sourcing depending both on the firm's location

and GPN integration through ownership ties and suggests (ii) that such variegation also exists at a sub-national, regional level, supporting the argument for the existence of regional variegations of capitalism.

5.1 The Unequal Utilisation of External Capital Sources

External capital, as discussed in Section 2.3.2, is contributed by parties external to the firm and its utilisation therefore creates and maintains unequal relationships of power between the firm and a third party. As shown in Section 2.3.2, it is the type of capital most commonly considered in geographical research on firm finance and can originate from a range of different actors (such as individuals, industrial or financial shareholders, banks or public entities) and take different forms (equity, debt or subsidies). Each of these actor types and capital forms has specific implications for the type of relationship created between the firm and the capital provider, depending to a certain extent to the location of the capital provider in relation to the firm.

When considering the sources of capital used by car component manufacturers, it is useful to keep in mind (as set out in more detail in Section 2.3) that capital is used for two very different purposes: on the one hand, to finance long term investments and acquisitions; on the other, to fund short term working capital needs. These two purposes are covered through different types of capital: while long-term financing needs are typically covered through equity, long-term bank loans, debt raised through the capital markets and subsidies, short term needs are covered primarily through trade liabilities and short-term bank loans.

5.1.1 Financing Investment: Long-Term Capital Sources

As set out in Section 2.3.2, the main sources of capital typically used by firms for long-term purposes are (i) 'industrial' equity, i.e. equity provided either by the founding individual or family owners (typically located in close vicinity to the firm), or by other industrial firms operating in a related sector (typically located further away), (ii) long-term bank loans (from banks typically located in the relevant national or regional financial centres), (iii) subsidies (from institutions which may be either national or trans-national in the case of the EU) and (iv) 'financial' capital raised through the capital markets or other financial actors such as private equity or venture capital firms (which will typically be based in international financial centres such as London, but also in cities like Paris or Munich). The following section looks at

how each of these four major forms of external long-term capital can be empirically observed (or, significantly and perhaps sometimes surprisingly, not observed) in this study's sample of firms and how these observations differ depending on the firms' geographic location, size and ownership.

Industrial Equity: marginal yet determining?

As seen in Section 4.2.2, all firms in the sample for which the ownership could be determined have industrial owners in the sense that they are either the individuals or families that founded, still own and manage the firm (and will typically be based in close proximity to the firm), or larger (often foreign based) car component manufacturers that have founded or acquired the firms as part of their international expansion and production chain integration strategy, and which form part of their global production network. Does this mean that industrial equity is a primary source of capital for these firms? The answer strongly depends on who the firm is owned by, as illustrated by the following figures.

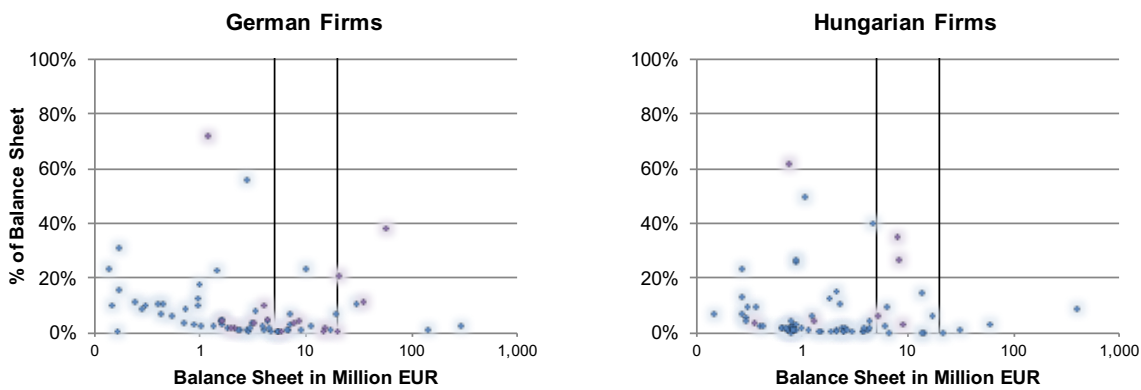


Figure 20 Owner funds in firms owned by domestic individuals

Source: author's calculations based on published annual statements

Figure 20 shows the 71 Eastern German firms in the sample owned directly or indirectly by domestic individuals of families and their 85 counterparts in Hungary, in each case placed according to the size of their balance sheet (x-axis) and to the proportion which owner funds represent on their balance sheet (y-axis). For the purpose of this analysis, firms fully owned directly by domestic individuals (in blue) and those owned partly by domestic individuals and partly by domestic corporates (in purple) are represented here together as the latter category very likely consists of firms that are fully owned by domestic individuals with simply a corporate structure used as an intermediate.

The 66 small or medium-sized Eastern German *Mittelstand* firms (in the left and central sections of the left-hand chart of Figure 20) tend to be financed very little to not at all through owner's funds: most have an owner fund ratio close to zero. The very small firms in Germany with a balance sheet of less than 1 million euro seem to have a slightly higher ratio, but this is likely due simply to the legal minimum capital firms are obliged to have and which represents a higher proportion of the balance sheet for these small firms. The situation of the five large individually owned German firms (in the right section of the left hand chart) is not materially different, with also very little to no capital provided by the owners. Only five firms have a markedly higher owner funds ratio:

- **Krüger & Gothe GmbH**, with a balance sheet of about 20 million euro just at the limit between being medium-sized and large, a 'mixed individual' ownership and an owner funds ratio of 21%, located in Staßfurt (Sachsen-Anhalt) south of Magdeburg
- **EcoNautic Systems GmbH** (10 million euro balance sheet i.e. medium-sized and individually owned) with an owner fund ratio of 24%, located in Dargun (Mecklenburg-Vorpommern)
- **AE Group AG** (58 million euro balance sheet i.e. large and 'home mixed' owned) with an owner fund ratio of 38%, located in Gerstungen (Thüringen)
- **Awab Umformtechnik und Präzisionsmechanik GmbH** (2.7 million euro balance sheet i.e. small, 'home individual' owned) with an owner fund ratio of 56%, located in Oschersleben (in western Sachsen-Anhalt) and
- **Pestel PUR-Kunststofftechnik GmbH** (1.2 million euro balance sheet i.e. small, 'home mixed' owned) with the highest owner fund ratio observed with 72%, located Chemnitz (Sachsen)

What the above shows is that while some of the individually owned firms in Germany that are funded by owner's equity to a comparatively higher extent are located in comparatively remote areas (such as EcoNautic Systems GmbH in particular), this is not the case for others, and it can therefore not be inferred from the data that individually owned firms in the Eastern Germany periphery might find it more difficult to get loans from banks and therefore fund their activities to a higher degree through equity, i.e. there is no clear indication of a regional equity gap at this level. As a general rule, it appears very clearly that firms that are owned by domestic individuals in Eastern Germany do not receive any material portion of their capital

from their owners regardless of their more or less central location: they rather rely on other sources of financing.

The picture in Hungary is very similar in that respect, with the 85 firms owned directly or indirectly by domestic individuals showing an owner funds ratios close to zero in an overwhelming majority of cases, and only a very small number of exceptions. These exceptions include two medium-sized firms (Galvánplastik Kft and KUNPLAST-KARSAI Zrt) with an owner funds ratio of 27% and 35% respectively and located in medium-sized cities outside the central NUTS1 region, two small firms (August Vonóhorog Kft, AluWork Hungary Kft) with an owner funds ratio of 23%, 26% respectively and located in remote regions, three small firms (Armafilt RT, Elas Kft and KMGY Zrt) with an owner funds ratio of 27%, 40% and 49% respectively and located in Budapest as well as one firm (Autofer Zrt) with the highest owner funds ratio of 62% located remotely in Szeged. In other words, while some of the firms with a particularly high owner funds ratio are located in remote regions, this is not the case of others with some of the highest owner funds ratios found inside Budapest. Similar to Germany therefore, the data does not suggest that individually owned firms in the Hungarian periphery compensate a potential difficulty in obtaining bank loans by contributing a higher proportion of equity. As a general rule however, like their Eastern German counterparts, car component manufacturers owned by domestic individuals in Hungary are therefore virtually not financed by capital provided by their owners but rather rely on other sources of financing. Whether this might be by choice or necessity will be explored later in Chapter 6 but it appears likely that this is due to the comparatively limited financial resources at the disposal of the individuals and families owning the firms and, at first sight, it seems to confirm the pecking order theory (as discussed in Section 2.3) with regards to the 'last resort' nature of equity, at least for individually owned firms.

The situation is very different among those firms that are owned by another car component manufacturer, especially those owned by foreign based firms which are generally larger GPN firms of the same sector (Figure 21). The eight German firms in this category are all financed to some extent through owner's funds, in some cases even to a very large extent with proportions over 60% in two cases. A closer look at the data reveals that those foreign owned firms that were found to be ultimately owned by private equity (Autotest Eisenach GmbH and Truck-Light Europe GmbH) tend to have a comparatively low owner funds ratio (with 14% and

38% respectively), those ultimately family owned (Alupress Berlin GmbH and Oberaigner Automotive GmbH) tend to be in the middle field (with 47% and 55% respectively) and those ultimately owned via the stock market (Boryszew Kunststofftechnik and Novero Dabendorf) tend to have the highest proportion of funds provided by the larger car component manufacturer that owns them with 60% and 66% respectively (although there are some exceptions to the rule such as the 75% of Israeli-owned ARKAL for which it could not be determined what type the ultimate ownership is and Nemak Europe ultimately owned via the Mexican stock market with its exceptionally low owner funds ratio of 22%).

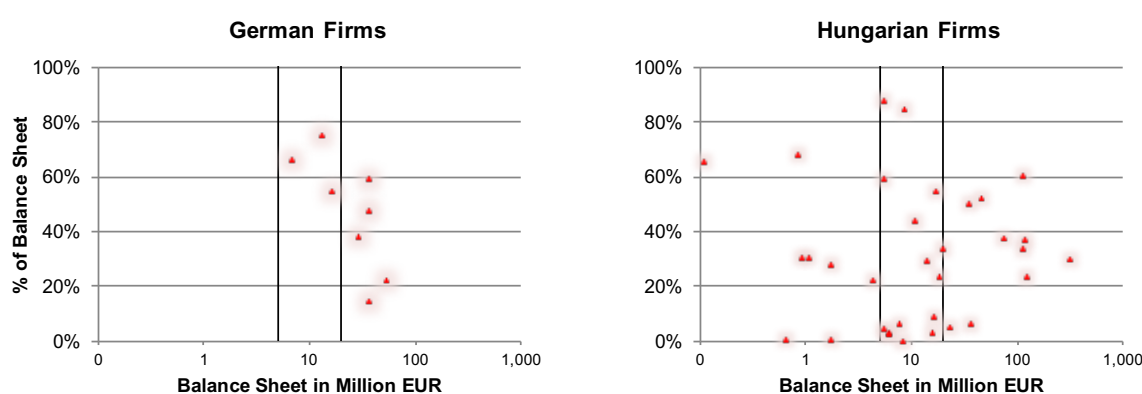


Figure 21 Owner funds in firms owned by foreign corporates

Source: author's calculations based on published annual statements

What this suggests is that where the ultimate owners are private equity, there might be a higher pressure to source capital through other (e.g. bank loan) sources, while when the ownership is ultimately a family business or a larger car component manufacturer owned via the stock market, there might be a tendency to fund the subsidiary more through capital generated (or maybe borrowed) by the owning car component manufacturer.

The situation of the 35 Hungarian firms owned by foreign corporates is more diversified, with a few examples financed little to not at all through owner funds – however, owner funds do represent a material and sometimes dominant portion in a significant number of cases. Looking at some of the two extremes of the spectrum, the following picture appears:

- **ABB Kft** (9% of owner funds) is part of the global Swedish/Swiss-based automation technology group Asea Brown Boveri (ABB), the ownership of which is traded on stock exchanges in Zurich, Stockholm and New York

-
- **Phoenix Légrugó Technológia Kft** (6%) owned by German ContiTech Vibration Control GmbH is part of the German Continental Group headquartered in Hannover, one of the world's largest car component manufacturers with its equity traded on stock exchanges (but 46% controlled by Schaeffler AG, another major German car component manufacturers also owned via the stock market)
 - **IMPREGLON Kft** (6%) is owned by Impreglon SE, another global car component manufacturer based in Germany (Lüneburg) and owned via the stock market
 - **SALGGLAS Zrt** (5%) is owned by two firms incorporated in Cyprus but a closer look reveals that these are not car component manufacturers but rather simply intermediate structures held by other shareholders not directly apparent in the structure. According to publicly available information, the firm was owned by global private equity firm Riverside from 1997 to 2007 and is currently owned by 'investors from Germany and New Zealand' – it is not disclosed who these investors are but it appears very likely that these are private equity investors rather than other car component manufacturers
 - **Eckerle Automotive Kft** (4%) is part of the family-owned German Eckerle car component manufacturing group based in Ottersweier (Baden-Württemberg)
 - **S&T Consulting Hungary Kft** (3%) is part of the technology group S&T AG based in Linz (Austria) and owned via the stock market with a material stake held by Taiwanese technology firm Quanmax
 - **Kaeser Kompressoren Kft** (3%) is part of the global Kaseser Kompressoren Group which is based in Germany (Coburg) and family-owned
 - **Parafix Hungária Kft** (2%) is part of the global family-owned Parafix group based in the UK
 - **Innotec Magyar Kft** (1%) is part of the Innotec group, a global car component manufacturer based in Michigan (US) which is family and employee-owned
 - **Technospring Kft** (0%) is owned by Hutter & Schranz, an Austrian industrial group, the ownership of which has been traded on the Austrian stock exchange since 1905
 - **General-Plastics Kft** (0%) is part of the Austrian Rejlek group, a likely family owned industrial group based in Vienna.

What this look at these 11 foreign-owned firms with a particularly low owner funds ratio (of less than 10%) seems to suggest is that many of them, in particular at the very bottom of the scale (with less than 5% of owner's funds) are ultimately family owned – which seems coherent with the finding from the domestic firms where family owned firms have a very low owner funds ratio as well: just like their domestic counterparts, these firms ultimately owned by foreign individuals likely do not have the financial resources to inject significant amounts of equity in their Hungarian subsidiaries. However, this is not necessarily the case as a look at the other end of the spectrum shows, with the 10 foreign-owned firms in the Hungarian sample that have an over funds ratio above 40%:

- **Aunde Kft** (44% of owner fund ratio) is part of the Aunde group, a family owned global car component manufacturing group based in Mönchengladbach (Germany)
- **Gedia Hungary Kft** (50%) is part of the Gedia group, another family owned global car component manufacturing group based in Attendorn/NRW (Germany)
- **Musashi Hungary Kft** (52%) is part of the Musashi group, a global car manufacturing group based in Japan and owned by various Japanese institutions
- **LEAX Hungary Zrt** (55%) is part of the Leax group, a likely family owned car component manufacturing group based in Sweden
- **Warema Plastic Technology Hungary Kft** (59%) is part of the Warema group, a global industrial group based in Bavaria (Germany) which is family owned as well
- **Stanley Electric Hungary Kft** (60%) is part of the Stanley Electric group, a global car component manufacturer based in Japan and owned via the stock markets
- **Schneider Prototyping Hungary** (66%) is part of the Schneider International group, a global car component manufacturer based in (Bad Kreuznach) Germany and family owned
- **MetoKote Hungary Kft** (68%) is part of the US-based car component manufacturer Metokote, which was itself acquired in 2016 by another US-based industrial group PPG which is owned via the stock markets
- **Benteler Distribution** (84%) is part of the Benteler group, a family-owned car component manufacturer based in Austria

-
- **Tesa Tape Kft** (88%) is part of the UK-based Tesa group, ultimately controlled by the Beiersdorf AG, a global industrial group based in Germany and owned via the stock markets

The proportion of capital contributed by the ultimate shareholders is systematically significant, as illustrated by Figure 21 – however, as the above list shows, most of them are ultimately family owned, a stark contrast to the foreign-owned firms in Eastern Germany which, as seen above, are mostly owned by private equity or the stock markets. Consequently, some of the foreign (but ultimately family)-owned firms in Hungary do have a significant portion of the capital contributed by their shareholders, which means that an ultimate ownership by a family does not necessarily preclude a firm from being financed through equity to a significant extent. A potential (and seemingly plausible) reason for this is that when the firm's owner is another (generally larger) firm (even if it is ultimately family owned), that firm may have more capital available or a more easy, cheaper and more direct access to the capital market or other forms of capital (such as bank loans in their country). In these cases, having capital contributed to the firm by the firm that owns it may be the most efficient and cheapest way to do so. Does this contradict the pecking order theory (cf. Section 2.3.2) for firms owned by other firms? Possibly or, more likely, it may reflect the fact that the decision-making power largely resides already with the owning firm that contributes the capital: while the pecking order theory predicts that firms will aim to avoid raising equity from third party investors that do not already control the firm in order to avoid transferring governance power to them, decision making power in firms owned by other car component manufacturers already resides with the (geographically remote) shareholders. Furthermore, the equity is contributed by that shareholder and not by another third party so there is no transfer of power between shareholders either.

No clear pattern emerges in terms of owner fund ratio from the other categories of firms (Figure 22) such as corporately owned firms (green squares) and other firms (grey dots) - including those for which the ownership could not be identified but most of which are very likely owned by domestic individuals. Further analysis as to the ultimate shareholders of these firms would be necessary to interpret these figures further, but they are shown here to illustrate the range of other situations some of the firms in the sample are in (thereby providing some context to the firms above for which the ownership was identified).

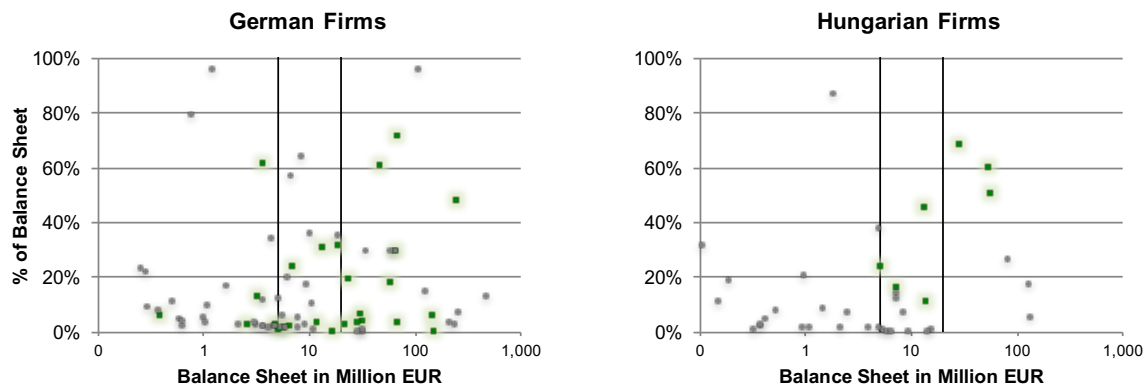


Figure 22 Owner funds in other firms

Source: author's calculations based on published annual statements

It should be noted that, while a low owner funds ratio means the firm relies heavily on other sources of capital to fund its investments and operations, it does not mean the owners of the firm do not control it. Shareholders have a significant position in the firm's governance regardless of how much or how little the firm is financed through equity (especially if the remainder is constituted of internal capital, i.e. retained earnings as set out below), but the more the firm is financed through other external sources, the more the shareholder's position in the firm's governance is diluted to the benefit of other capital providers.

In summary, there does not seem to be a marked difference between the Hungarian and Eastern German variegations of capitalism in respect of capital provision by the firms' owners, and there is no clear indication for the existence of regional equity gaps in either region. The main differentiating factors with regards to the provision of equity seems to be the firm's GPN integration through ownership ties with another GPN firm: these are the cases where significant contribution of equity can most often be observed – in apparent contradiction to the pecking order theory but in reality highlighting that it only applies to equity provided by new external shareholders (to which governance power would be transferred if equity was provided by them) and not to existing industrial shareholders (who already hold the decision making power and the dominant position in the firms' governance).

Bank Financing: an unequally used source of capital

As discussed in Chapter 2, bank loans are a key source of financing for firms, but often difficult to obtain in particular for small firms and firms located in the periphery (with evidence for the existence of regional debt gaps). As a key actor of capital provision but with differing positions

in different institutional contexts, banks play a key but differentiated role in different variegations of capitalism (depending on their local embeddedness with presence concentrated in major urban centres or also in more peripheral cities, and on their relationship with banks which can be relatively stable and institutionalised as is typically the case in Germany, or less so as is the case in other regions such as Hungary for example).

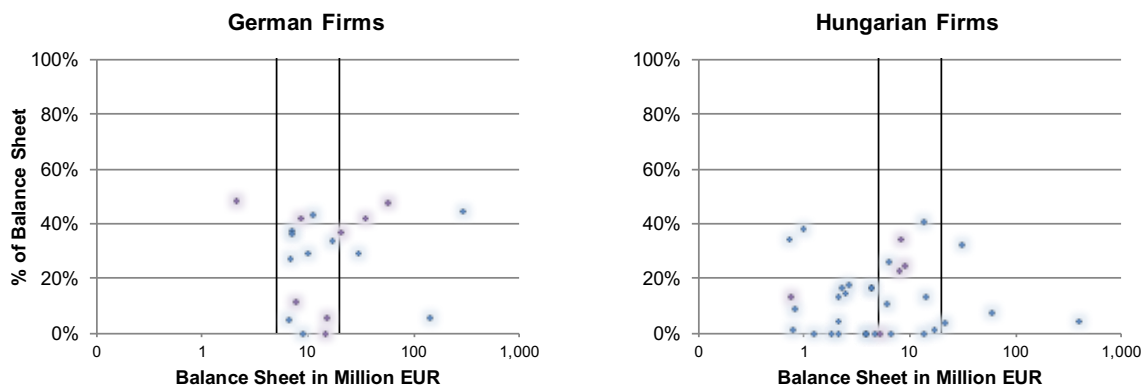


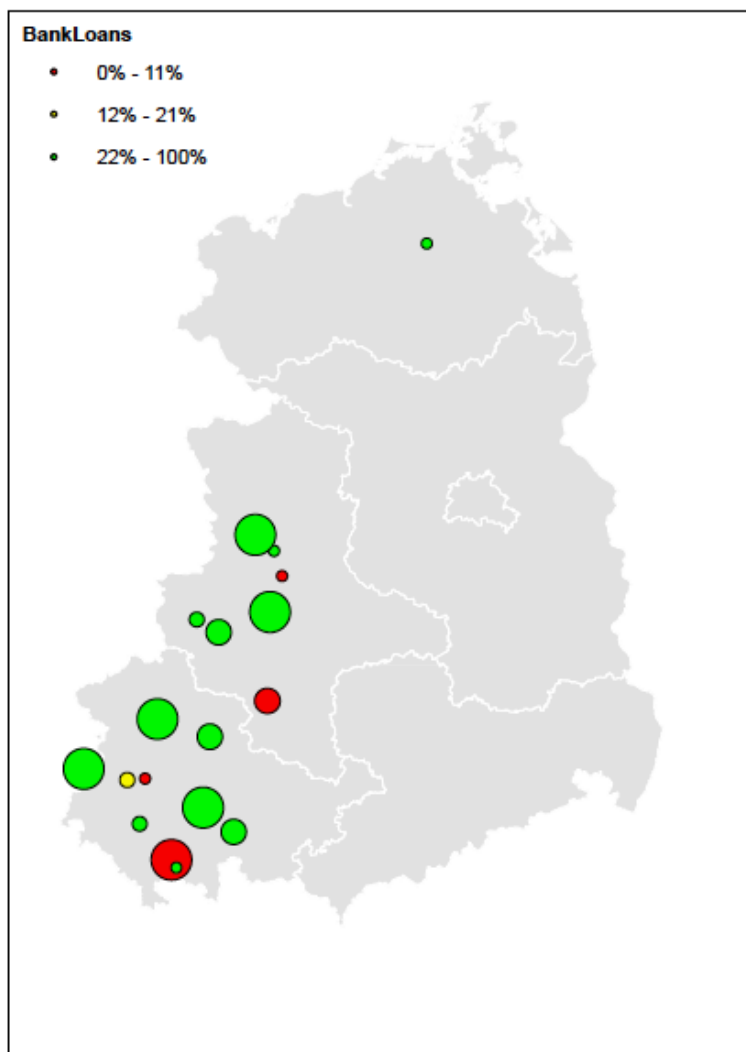
Figure 23 Bank loan ratio for firms owned by domestic individuals

Source: author's calculations based on published annual statements

The analysis of the empirical data for firms owned by domestic individuals (Figure 23) first illustrates a methodological obstacle encountered during the analysis, which is that small firms in Germany tend not to publish their capital sources in a detail which allows to identify their bank loans (simply because they are not legally obliged to do so). As a consequence, bank loan data is (with very few exceptions) available only for medium-sized and large German firms, as well as for firms of all categories in Hungary. For those where the data is available, a look at Figure 23 suggests two groups among the German firms: those (six) firms that use bank loans not at all or to a very limited extent (between 0% and 11%) and those (13) firms which use them to a relatively significant extent (between 25% and 50%). This finding is unsurprising and rather consistent with the understanding that firms in Germany rely heavily on their 'relationship banks' (*Hausbanken*) (Handke 2011).

In Hungary, the picture is a bit different than in Germany, with a significantly higher amount of (17) individually owned firms using bank loans not or only very little (not more than 11%) and those (68) that do, do so to a lesser extent than their Germany counterparts (often below 20% and hardly ever above 40%). In other words, bank loans seem to be less prevalent among individually owned Hungarian firms and when they do get bank loans, German firms tend to

finance a higher proportion of the bank loans through this source. This recalls the findings of Bečicová and Blažek (2015) in the Czech Republic, pursuant to which some firms deliberately chose not to use bank loans.



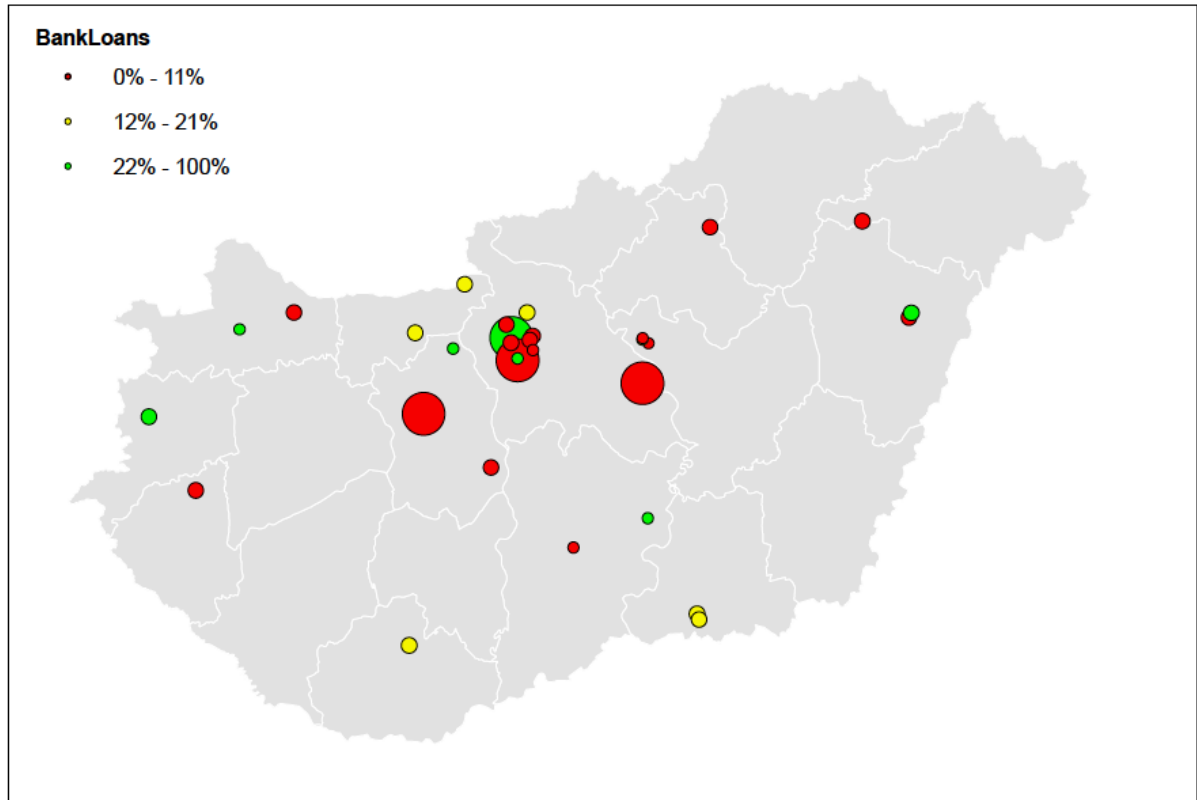
Map 4 Bank loan ratio for individually owned firms in Germany

Source: author

To assess whether this also echoes with the idea frequently found in the literature that individually owned firms in the periphery find it harder to get bank loans even if they want to, i.e. the existence or not of a regional debt gap, the following maps look at the distribution of these firms in geographic terms. As far as the bank loan ratio for individually owned German firms could be identified (Map 4), there seems to be no significant difference in terms of geographical location between those firms (in red) that use banks loans only very little to not at all and those (in green) that use them to a significant extent.

What is striking is that the map only shows firms located in Thuringia and Sachsen-Anhalt (as well as one exception in Mecklen-Vorpommern, which is also the only small firm for which the bank loan ratio could be identified): this does not necessarily mean that the firms in the other regions do not use bank loans but rather, as mentioned above, that they are mostly small firms and therefore do not report their capital sources in a detail which would allow to identify the bank loan ratio. There are also some (seven) medium-sized or large firms in this region that in principle have to publish their accounts in sufficient detail but the bank loan ratio could not be identified for other reasons. Based on the limited data available, however, the data of this study does not seem to suggest there is a credit gap for (at least medium-sized and large) individually owned firms in Eastern Germany with regards to their more central or peripheral location - at least with regards to the outcome of their negotiations with banks. The data does however not reveal whether the process is more difficult for the firms located further away from the financial centres. The data does show that most of the German firms do use bank loans to a significant extent (over 22%).

By contrast, the situation for individually owned firms in Hungary (Map 5) looks very different. Most of the firms on the map are red, i.e. they use bank loans not at all or only to a limited extent (of up to 11%). In terms of regional variations within Hungary, the picture is a bit more nuanced: while a majority of the firms outside the metropolitan region of Budapest do not use bank loans, or only to a very limited extent, this is also the case of some firms within Budapest. Similarly, while some of the firms using bank loans to a significant (at more than 22%) extent are located within or near Budapest, this is also the case of some firms located in more remote regions such as Debrecen in the East of the country. Consequently, while the data suggests that many individually owned Hungarian firms in the periphery do not use bank loans (either because they chose not to or because they can't), this is also the case for some individually owned firm in the center of the country – a credit gap is therefore not necessarily suggested from this data. One methodological issue encountered here is that the data is incomplete: it was not possible to identify the bank loan ratio for as many firms as the retained earnings ratio (as discussed below), which therefore seems to be a better indicator for the potential identification of a regional capital gap in Hungary. A further question is to which extent this lesser reliance on bank loans is a matter of choice or of necessity: Chapter 6 explores this in more detail.



Map 5 Bank loan ratio for individually owned firms in Hungary

Source: author

The picture is very different for firms owned by foreign corporates, i.e. by firms that are owned by other GPN firms located in other countries (Figure 24): virtually none of these in either Germany or Hungary use banks as a source of financing at all. There are only three exceptions in Hungary with over 20% of bank loans.



Figure 24 Bank loan ratio for firms owned by foreign corporates

Source: author's calculations based on published annual statements

This suggests that firms that are integrated in global production networks through ownership ties with another GPN firm tend to be less integrated with banks, which are the main local capital providers of their respective variegations of capitalism. The picture is more nuanced when looking at the other firms owned by domestic corporates or with an unknown ownership (Figure 25). To analyse this further, however, it would be necessary to identify their ownership or location in more detail.

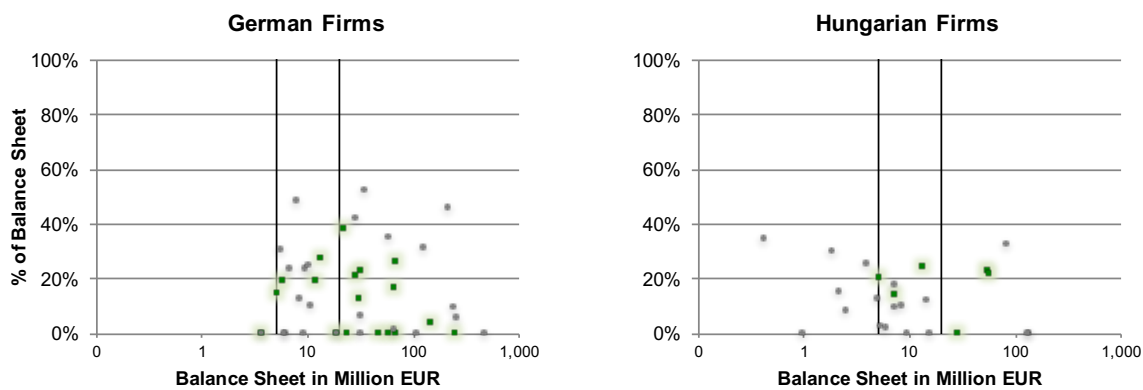


Figure 25 Bank loan ratio for other firms

Source: author's calculations based on published annual statements

In summary, the empirical findings suggest that bank loans are an important, though far from prevalent, source of capital for individually owned firms in both Eastern Germany and Hungary, although Eastern German firms seem to rely more heavily and systematically on their banks than the Hungarians, suggesting a more important role played in the Eastern German variegations of capitalism than in the Hungarian variegations of capitalism. By contrast, firms owned by corporates, and foreign corporates (i.e. other foreign GPN firms) in particular, seem to almost completely refrain from getting bank loans. Chapter 6 endeavours to explore why that might be the case, although one possible explanation is that these firms likely access capital through their shareholders (which are larger firms with potentially better connections to international capital markets and other sources) at more favourable terms.

Subsidies: fading away?

For almost four decades following World War II, the role of the state in financing car component manufactures in Hungary and Eastern Germany was predominant and almost exclusive, with state ownership of most of the industry that existed under state socialism. State ownership ended (for all but a handful of firms) around 1989 and firms were privatised,

meaning that the role of the state as a capital provider in the institutional infrastructures of capital provision in Hungary and Eastern Germany, and thereby the variegations of capitalism in these regions, changed significantly. However, the support of the state (and more recently, of the EU) in the form of capital provided at preferential terms (i.e. subsidies) did not end there. Regional development support programmes in both regions aim to strengthen local firms through the granting of subsidies, with the objective of supporting firms located in more peripheral regions and therefore less able to obtain capital from other sources which are often located in the more central regions of the countries.

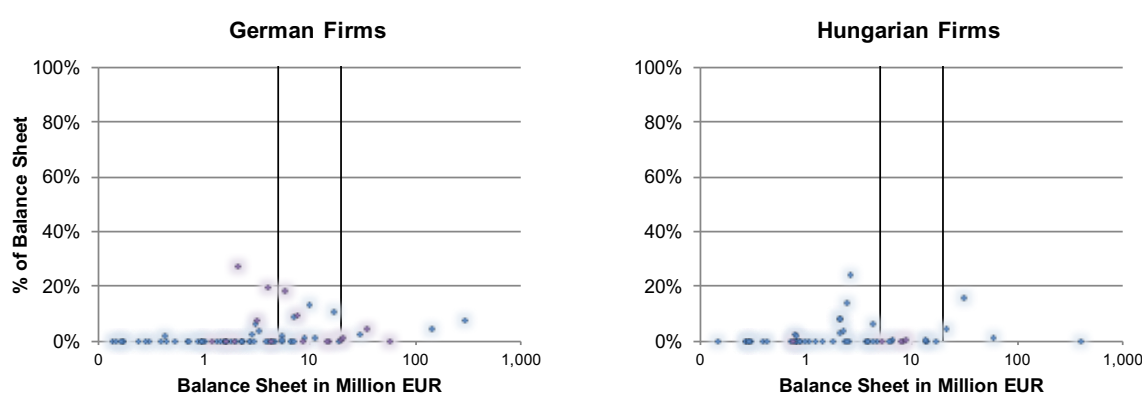


Figure 26 Subsidy ratio for firms owned by domestic individuals

Source: author's calculations based on published annual statements

However, as Figure 26 shows, subsidies are found in a relatively small proportion of individually owned firms both in Hungary and in Eastern Germany. It comes with little surprise that only very few large firms in both countries benefit from subsidies, as the purpose of subsidies is arguably to strengthen the weaker small and medium sized local firms which have more difficulties in accessing other sources of capital. Somewhat more surprisingly, by contrast, is the finding that only very few small firms seem to benefit from subsidies: these seem to be used primarily by medium-sized firms in Germany, and in Hungary by firms that are just too small or too large to fall into the medium sized category but that are rather close thereto. A potential reason for this could be that the administrative burden for applying for and obtaining subsidies (and/or for reporting on performance while a subsidy is outstanding) is such that smaller firms find themselves discouraged and only medium-sized firms have the resources to go through the process. A potential link between the presence of subsidies and the more or less peripheral location of the firms was not explored within the scope of this

study, but would remain to be done through further research focusing more specifically on the geographies of subsidies and the question whether subsidies are able to materially mitigate regional equity or debt gaps that may exist in certain regions.

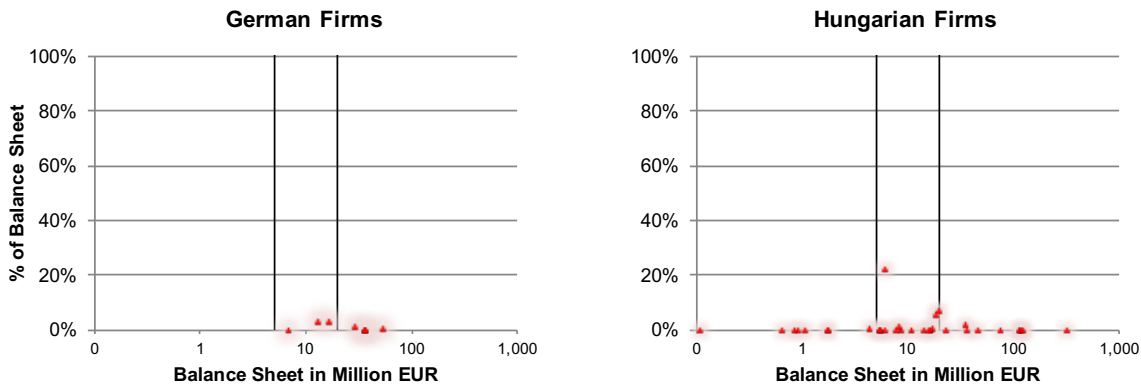


Figure 27 Subsidy ratio for firms owned by foreign corporates

Source: author's calculations based on published annual statements

Foreign-owned firms (Figure 27) were not found to be using subsidies at all, with one exception in Hungary. It was not analysed within the scope of this study whether this might be due to a potential ineligibility of foreign owned firms to receive subsidies, or whether foreign-owned firms have easier access to other sources of capital which do not come with the constraints associated with obtaining and having subsidies in place (through which the public entity granting the subsidy enters the governance of the firm), and that they therefore may prefer to refrain from accessing subsidies in order to retain more autonomy in their governance. Among the other firms (Figure 28), some firms do use subsidies but a closer analysis would be required to identify their ownership and location.

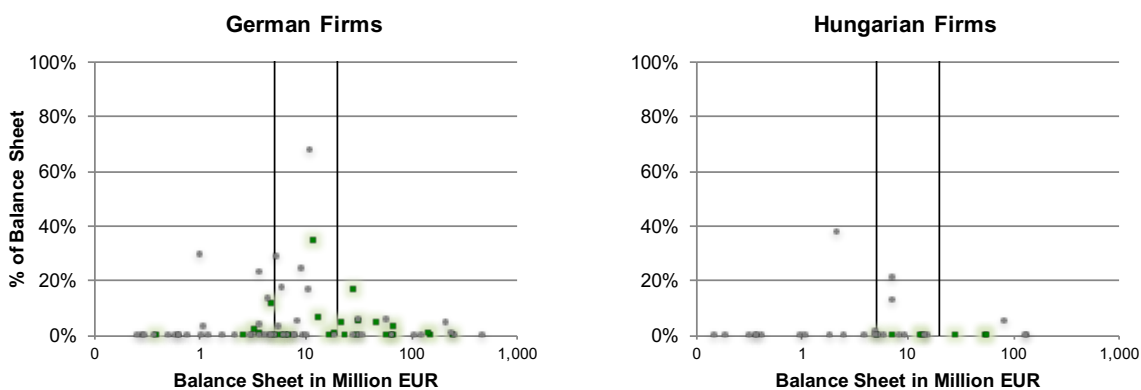


Figure 28 Subsidies ratio for other firms

Source: author's calculations based on published annual statements

Future research could explore the distinction between subsidies granted by regional or national institutions on the one side and through EU institutions on the other side to understand whether there are regional variegations of capitalism with regards to the presence and role played by subsidy-granting institutions at various geographical scales.

The Big Absentees: Capital Markets and Private Equity

Much of the academic literature on geographies of finance and financialisation focuses on capital which circulates through global capital markets and international financial actors such as private equity and venture capital firms. However, as the following section shows, one significant finding of the analysis of capital sources for the sample of firms in this study is the absence of capital directly sourced from ‘financialised’ sources such as the capital markets and private equity. As shown in Section 4.2.2, none of the firms in this study’s sample is organised as a PLC with its equity traded on the stock market, bonds issued through the debt market are also absent from the firm sample and none is directly owned by private equity.

This is consistent with the literature on the public listings for firms in Eastern Germany (cf. e.g. Clark and Wójcik (2007: 118) for a map showing how few listed companies there are in the Eastern Länder, compared to some Western Länder – although there are some in Saxony and Thuringia) and is consistent with the more general understanding that publicly listed equity (i.e. stocks traded on a capital market) is virtually absent from the SME sector, with only a tiny minority of SMEs having their equity listed on a capital market such as Enternext and Alternext for European SMEs or the CAC Mid & Small in France and none of the SMEs from this project’s scope. It contrasts with countries such as the US or the UK where a higher number of large firms and also small- and medium-sized firms are listed.

Does this mean that capital markets are irrelevant in the context of car component manufacturers in Hungary and Eastern Germany? Not necessarily. There is a link of certain firms to capital markets via certain larger car component manufacturers they are owned by. While direct capital market financing (in the form of both equity and debt) is absent from this study’s sample of car component manufacturers, it is traditionally present among the lead firms of the automobile sector as well as among the larger international car component manufacturers. Most of the lead firms have their equity publicly traded on the stock market. General Motors, with its very granular shareholding (largely held by funds who themselves

each represent thousands of individuals) and its shares publicly traded since the early 20th century is a prime example of what Froud *et al.* (2002b) call 'coupon pool capitalism', although even this company was completely nationalized and not on the stock market in 2009 and 2010. Volkswagen is a less typical example, with only about 10% of shares freely traded on the stock market, a majority of the shares held by the members of one family and the remainder being held by governments (Lower Saxony and Qatar). The shares of some of the global tier-one suppliers are traded on the stock market (e.g. Delphi Automotive Plc, Magna International, Inc. or Lear Corporation), but this is much less likely to be seen among tier-two and tier-three supplier SMEs. The lead firms are also very familiar with the debt side of capital market finance, issuing bonds (i.e. borrowing financial capital directly from capital market investors rather than from a bank) and securitizing certain of their assets or of their claims against third parties (such as for example the clients that buy a car on loan). Most major lead firms in the automotive industry have been obtaining financial capital in this way for decades. Some of the capital that lead firms obtain through the issuance of bonds is used to finance their 'car financing activity' (consisting in lending to customers the money to buy the cars they sell them) (Froud *et al.* 2002a), i.e. not directly related to productive investment in car manufacturing.

Private equity firms as well as venture capital are often cited and considered as another form of non-traditional, 'financial' equity. The private equity market is strongly developed in the US and in the UK, where a larger number of firms count some form of private equity actor among their shareholders. In continental Europe, the role of private equity is much more limited but still present to some extent. By contrast, as seen in Section 4.2.2, private equity is fully absent as a direct capital provider from the firm sample analysed in this study, where ownership is traditionally family-based or based on ownership by other car component manufacturers (although as seen above some are indirectly owned by private equity). Scheuplein (2012) shows that there had been a wave of takeovers of German car component manufacturers by private equity firms in the first decade of the current century (2000 to 2011), with about 130 (12%) of those firms with at least 100 employees having at least 25% of their shares held by private equity at some point during this time. Interestingly, this phenomenon concerns mainly the lower end of the value chain with almost two thirds of the target firms belonging to the third tier, only 30% to the second tier and hardly any to the first tier. Geographically, the phenomenon was strongly focused on Bavaria, Baden-Wuerttemberg and North Rhine

Westfalia (West Germany's typical car component manufacturing industries) – hardly any of the firms taken over by private equity were located in Eastern Germany (Scheuplein 2012).¹⁸ This concurs with the lack of finding of any direct private equity participations in any of sample firms of this study in Eastern Germany. This may suggest a bias of private equity investors to certain (more central regions) in Germany, like Wray *et al.* (2011) have shown for venture capital in the UK. Scheuplein and Teetz (2014) also provide a more general and detailed discussion of private equity actors and takeovers in Germany, including their geographical distribution and its implications on firm governance.

In conclusion, the sample of firms in this study has no direct connection with or reliance on capital markets and private equity (and is therefore not 'financialised' in that sense), but there are indirect connections. Both lead firms and larger car component manufactures that do have such 'financialised' sources of capital do have commercial relationships with firms in the sample, and in some cases also through ownership relationships as shown by some of the firms cited in Section 4.2.2 (such as Truck-Lite Europe or Autotest Eisenach owned by firms who are themselves owned by private equity, and Boryszew Kunststofftechnik or Novero Dabendorf who are owned by firms that have their own equity traded on the stock markets).

5.1.2 Financing Operations: Working Capital

The question of how and where firms in Eastern Germany and Hungary source their capital both for their investment and for their working capital needs is particularly relevant in the automobile supplier industry where due to "stringent working capital management by lead firms, financing requirements are more and more shifted towards upstream suppliers" (Baumeister and Zademach 2017). As a consequence, the firms not only need to raise long term funds to purchase and modernize equipment and increasingly also to fund R&D expenses, but also to bridge the gap created by the fact that their buyers (lead firms or larger suppliers) benefit from more extended payment terms than the firms' own suppliers - meaning de facto that the firms are net providers of trade credit to their buyers, which requires them to raise interim capital through other sources and increases their overall financial costs (Baumeister and Zademach 2017). Such interim capital can be raised either in

¹⁸ There is one example in this sample with a private equity firm based in Wernigerode in Saxony-Anhalt ultimately holding the firm via another car component manufacturer.

the form of trade credit granted by their own suppliers, or through short term bank loans. This is relevant for another form of indirect exposure which results from a firm's commercial (customer/client rather than owner/subsidiary) relationships with firms that have their equity owned (or that are otherwise financed) through the capital market.

Trade Liabilities and other forms of Inter-firm Financing?

Firms finance part of their activities by delaying payment of their suppliers (and therefore reducing their own working capital requirement) – corresponding effectively to free short-term credit granted by the supplier (Froud *et al.* 2002a). In theory (Pollard 2007), it is mainly the larger powerful assemblers that have the negotiation power to impose beneficial payment terms onto their suppliers and thereby benefit from trade credit as a source of short term working capital. Smaller SME suppliers are expected to have less negotiating power and therefore not be able to access such trade credit to the same extent as larger firms (it is mainly a question of the 'net position' between the trade credit they are able to get and the trade credit they are obliged to grant). In fact, inter-firm financing is one of the main forms of financing for GPN firms, but SMEs are globally net providers (rather than receivers) of this financing. Factoring is one way of "monetizing" these receivables, but its use remains limited to date. Inter-firm financing can also be a factor of financialisation when the lead firms of a GPN encourage or assist the smaller firms of their network in obtaining [equity or] debt from the capital market and thereby enter financialised circuits of capital (Baumeister and Zademach 2017). In this context, there is potential for "partners within the value chain [to] collaborate to either provide financing/fund investments or facilitate the access to finance in cooperation with external investors such as banks" (Baumeister and Zademach 2017), being understood that such financial collaborating requires a consideration of power relations, network embeddedness and relevant institutional frameworks – which is why the GPN perspective is pertinent here.

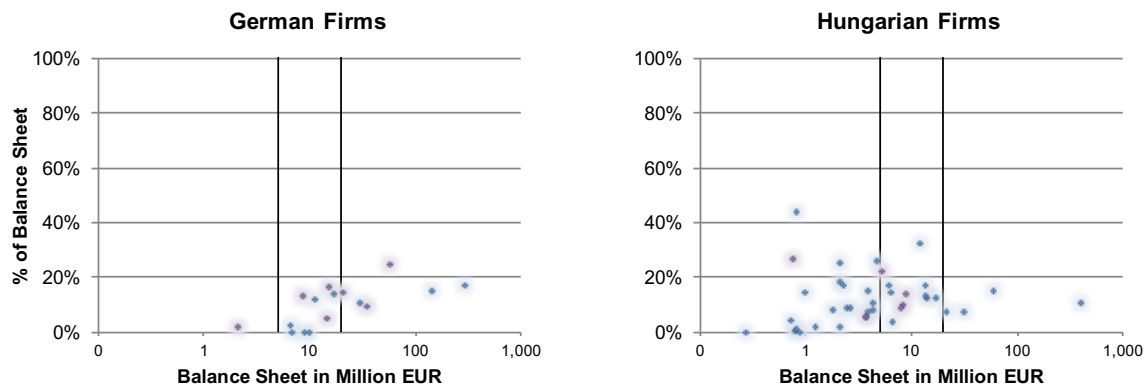


Figure 29 Trade credit ratio for firms owned by domestic individuals

Source: author's calculations based on published annual statements

How does the actual picture look based on the empirical data for individually owned firms (Figure 29) and for foreign owned firms (Figure 30)? Again, data is unfortunately not available for small German firms but based on the data available, trade-liabilities seem to be a form of capital for a significant number of individually owned firms, and the data does not suggest that it is the larger and stronger firms that are able to use this type of capital more than others.

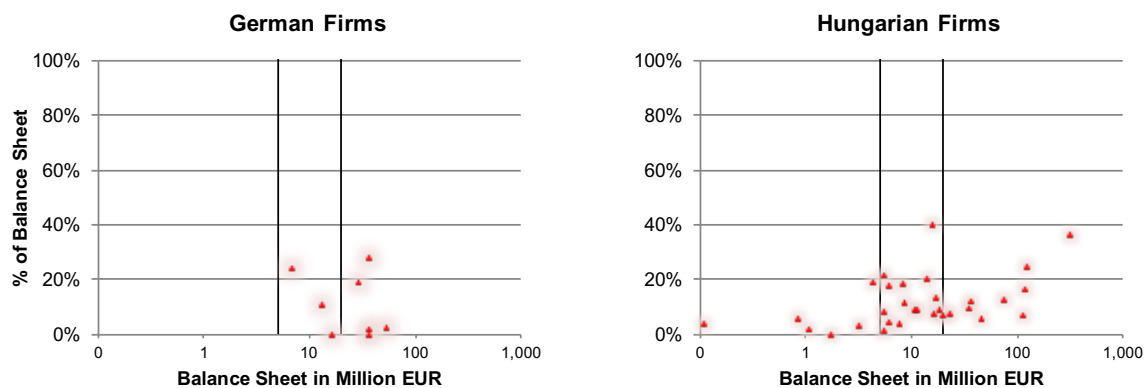


Figure 30 Trade credit ratio for firms owned by foreign corporates

Source: author's calculations based on published annual statements

No clear patterns appear either when looking at the other firms (Figure 31), although the Hungarian firms owned by domestic corporates seem to have a slightly higher capacity of imposing trade credit onto their suppliers as compared to their German counterparts:

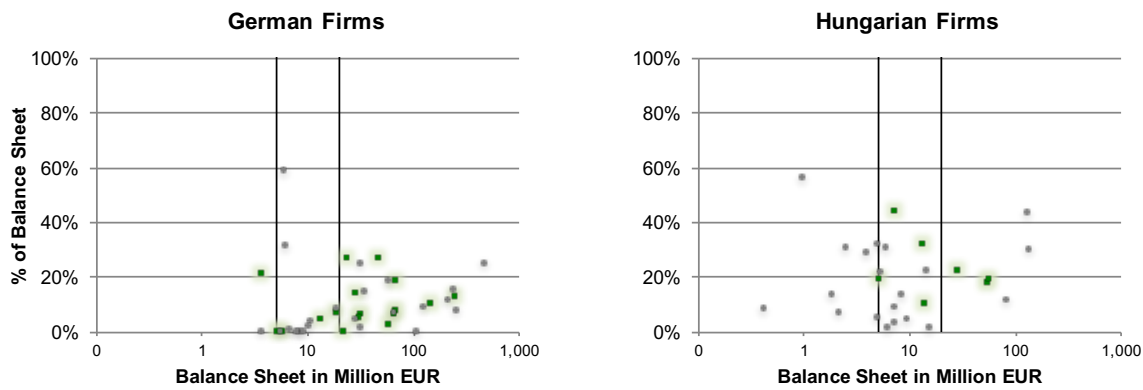


Figure 31 Trade credit ratio for other firms

Source: author's calculations based on published annual statements

In short, the empirical data of this study do not seem to confirm the general assumption in the literature that larger firms within global production networks are able to impose more trade credit to their suppliers than smaller firms. There are, however, likely other factors at play, such as the firm's activity or tier-positioning within the global production network which was not analysed within the scope of this study (but could be done by future research), which may have an impact on the firm's capacity to impose, or not, trade credit to their suppliers. This is an area where the customer relationships with more or less financialised larger car component manufacturers might come into play.

Short Term Bank Loans

To the extent firms need to advance funds to purchase material to produce their goods before receiving payment for these goods once they are finished, i.e. to the extent they cannot impose payment timing terms favourable to them and thereby fund the gap through trade credit granted by their suppliers, firms need to bridge the gap through short term bank loans (revolving credit facility lines). Is this a (costly) compensation for the inability of imposing trade liabilities? While it was not possible within the scope of this study to distinguish between long-term and short-term bank loans, it is likely that this is a relatively rare source of capital for many firms, which is consistent with the findings of Bečicová and Blažek (2015) according to which small firms in the Czech periphery often prefer not to take on any (even short term) bank loans.

This section has concentrated on the range of theoretically possible (and to a more limited extent empirically observed) forms of external capital sourced from third parties outside the

firm to finance investments in the long term and operations in the short term, as one aspect of the varieties of capitalism prevalent in Hungary and Eastern Germany consisting in the relationships between firms and the capital providers that form part of the institutional infrastructure of capital provision in these regions. It was evidenced that the firms use a variety of different sources, and the balance depends to a certain extent on the firm's location, size or ownership. However, none of these seems to be a predominant source of finance in many cases, with very few exceptions. In the overwhelming majority of cases, all external capital sources taken together cover only part of the entire capital needs of the firm. How is the remaining need for capital financed? Through retained earnings, an internal source of capital, produced by the firm itself, which is often overlooked in geographical analysis of firm finance but used by the firms as a means of increasing or preserving their autonomy and self-reliance.

5.2 The Predominant Role of Internal Capital: Retained Earnings

Retained earnings are capital produced 'inside' the firm, through the production process every year in which profit made by the firm is retained for future investment rather than distributed as dividends to its shareholders. By retaining the profit made in a given year rather than distributing it in the form of dividends, the firm creates its own form of capital available to fund investments over the long term and constituting a working capital stock in the short term. Put into the conceptual framework of variegated capitalism, it has the particularity of not being supplied by one of the institutions that form part of the relevant institutional infrastructure of capital provision, but rather being produced by the firm itself. As the following section shows, this source of capital is widely used by most firms in the sample, often as the predominant and sometimes even as the exclusive source of capital for some firms. Here again, however, patterns appear between the degree to which firms rely on retained earnings as a source of capital and certain of their characteristics such as their location, size or ownership – with certain regional gaps evident suggesting that a firm's location in particular and its integration through ownership ties with other GPN firms may impact the degree to which it is likely to rely on retained earnings as a capital source. These findings seem to confirm those of Donati and Sarno (2015) in the context of peripheral regions in Italy where there also seems to be a strong reliance on internal funds.

The section is organised in two parts. The first part discusses the general importance of retained earnings for most types of firms, regardless of their size or ownership and with only limited contrasts observed between Eastern Germany and Hungary. The second part offers a more nuanced picture however, highlighting regional contrasts within Hungary that seem to indicate the existence of a ‘capital gap’ in particular in the Hungarian periphery.

5.2.1 A Central Source of Capital for Most Firms

As mentioned above, retained earnings constitute a significant source of capital for many of the firms in the sample but to a very differing degree. The following section assesses to which extent the relative importance of retained earnings for a given firm may be due to certain of its characteristics such as size, ownership or location. Past performance (the making of profit or losses) and strategy (the distribution of profits made as dividends or rather their retention as retained earnings) are also relevant factors but could not be analysed in this study: this remains to be done through future research.

The importance of retained earnings for individually owned firms

The following looks at the prevalence of retained earnings among individually owned firms (Figure 32). Unlike what was seen for the external forms of capital earlier, it appears that retained earnings are used as a source of capital by almost all firms.

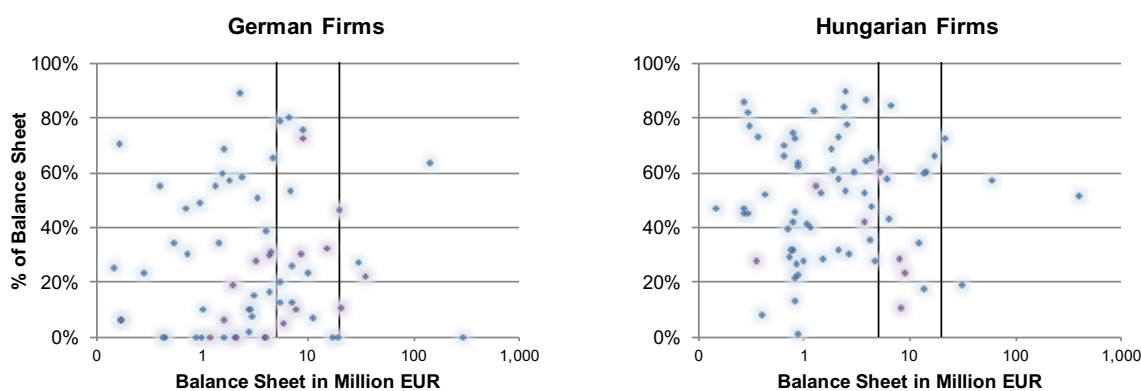


Figure 32 Retained earnings in firms owned by domestic individuals

Source: author’s calculations based on published annual statements

There are only very few exceptions of firms, in all sizes and ownership types, that do not seem to use retained earnings at all. Whether this is because they (or more precisely the stakeholders controlling their governance) chose not to retain and rather distribute all their

profits or whether it is because they have made losses over the last years and therefore were not able to constitute or preserve retained earnings as a capital source remains to be determined. Among the individually owned German firms that use retained earnings as a capital source, examples can be found in every category – from marginal with less than 20% to intermediary and even predominant, and one domestically owned small firm even almost exclusive (with almost 90% of its capital represented through retained earnings). This being said, a majority of individually owned German firms seems not to rely on retained earnings as a predominant source of capital. These firms do engage with external capital providers (such as banks in particular) that form part of the regional institutional infrastructure of capital provision.

By contrast, the overview for the individually owned Hungarian firms provides a rather different picture. Again, firms can be found in all categories, but there are far fewer firms where retained firms are marginal (less than 20%) and far more firms where retained earnings are predominant (over 50%) or even almost exclusive (over 80%). It clearly appears that there is a tendency for retained earnings among individually owned firms in Hungary to play a greater role than in Eastern Germany. Hungarian firms, especially the smaller ones, tend to be financed to a higher degree through retained earnings than Eastern German firms, suggesting that they either cannot find other financing sources or chose not to in order to retain their autonomy in terms of firm governance. As a result, these firms engage less with the external capital providers that form part of the institutional infrastructure of capital provision in Hungary, suggesting a difference in the variegations of capitalism prevalent in Hungary compared to the one prevalent in Eastern Germany.

Importance also for firms owned by foreign corporates

As far as foreign-corporately owned firms are concerned (Figure 33), a majority of those in Germany have a very little proportion of retained earnings whereas in Hungary there is really no perceptible pattern at all: firms with all proportions of retained earnings can be found in all size categories.

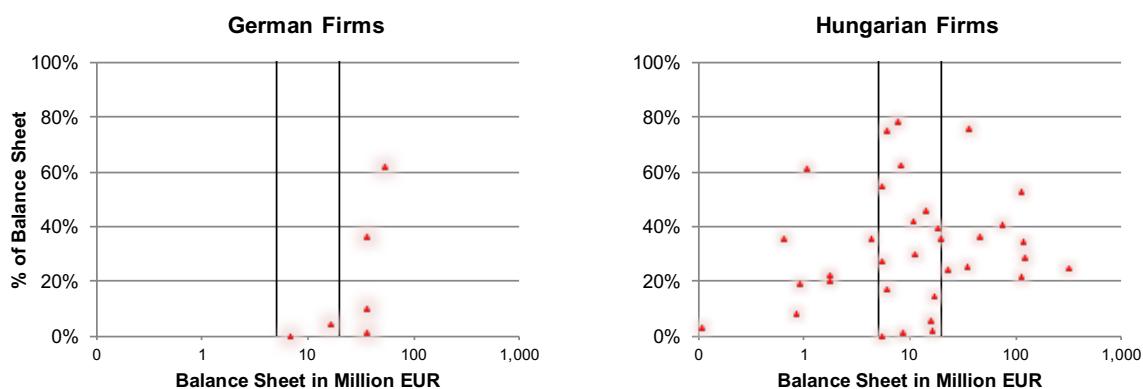


Figure 33 Retained earnings in firms owned by foreign corporates
Source: author's calculation based on published annual statements

The situation for other firms (Figure 34) looks similar. In summary, the analysis of retained earnings ratios of the firms in this study's sample in light of their size and ownership does not evidence any clear patterns. The picture is a very diverse one overall: firms for which retained earnings constitute the predominant source of capital can be found in all size categories, and the same is true for firms for which retained earnings do not play an important role with regards to capital sources. This suggests that there is a host of contextual factors that determine the relative weight of retained earnings for a firm, illustrating the limits of a binary VoC approach.

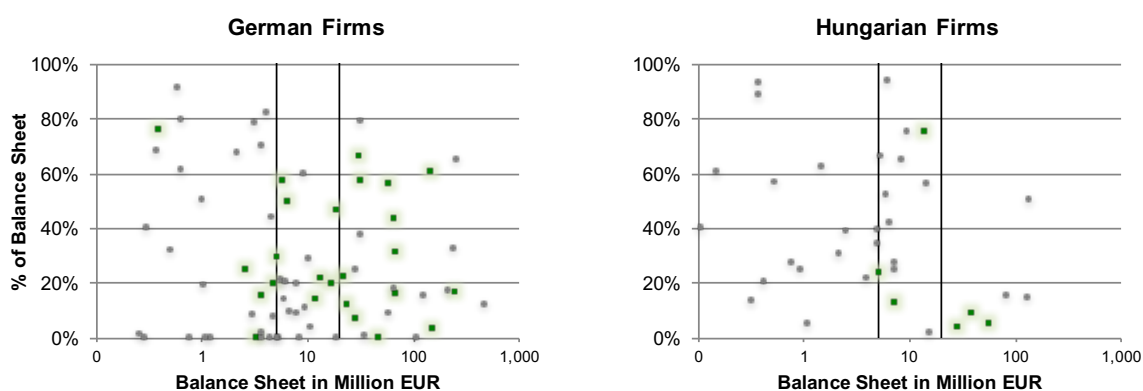


Figure 34 Retained earnings in other firms
Source: author's calculation based on published annual statements

The general overview in the previous section evidences a rather complex and chaotic picture but it also shows that retained earnings constitute the predominant (>50%) source of financing for many firms in both Eastern Germany and Hungary, and even the (almost) exclusive (>80%) source of capital for some firms particularly in Hungary. It appears that

retained earnings are important especially for the smaller ones that are domestically owned (as well as, as will be shown later, those in the Hungarian periphery). These firms seem to prefer retained earnings over external capital sources, either because they struggle to access these external sources or because they find the conditions and constraints attached to them too intrusive and because retained earnings enable them to preserve their autonomy and self-reliance. But this would not be sufficient to explain the predominance of retained earnings: the firms also need to have the capacity to accumulate retained earnings by making profits over several years and retaining them rather than distributing them as dividends to shareholders. This suggests that the small firms in the Hungarian periphery are able to work profitably over a number of years and accumulate capital by not distributing dividends – although this strategy likely also means that they remain small and do not grow at a pace they might if they did resort to external financing sources. Another approach though could be to see that those firms that rely most heavily on retained earnings in Hungary are the smaller ones. Could it be that they must rely on retained earnings because they struggle to access external capital, and at the same time they make only limited profits over the years so they remain small in the long term? By contrast, in Germany it seems to be larger firms that seem to be relying to a higher extent (though never exclusively) on retained earnings: could this mean that they do so out of choice rather than necessity, that they are able to access other sources of capital as a complement and therefore grow more strongly than their Hungarian counterparts? This remains to be analysed by future research. As Lapavitsas (2011) recalls, a strong reliance on retained profits was already observed almost 80 years ago by Sweezy (1942) in respect of large corporations, enabling them to finance investment without relying heavily on banks. The context is of course different in this study which concerns mainly small and medium-sized enterprises.

5.2.2 Regional Contrasts and Capital Gaps

The previous section has shown how important retained earnings are for most firms in the sample, almost regardless of their size or ownership and with only little contrast between Eastern Germany and Hungary, i.e. without at first sight a strong geographical differentiation. This section draws a more nuanced picture by highlighting what the previous section did not show: the likely existence of a capital gap in the Hungarian periphery which appears when the importance of retained earnings is put into perspective with the firm's location. Just as

strikingly, however, the empirical data shows no sign of such a gap among the sample firms in Eastern Germany.

Regional capital caps for individually owned firms?

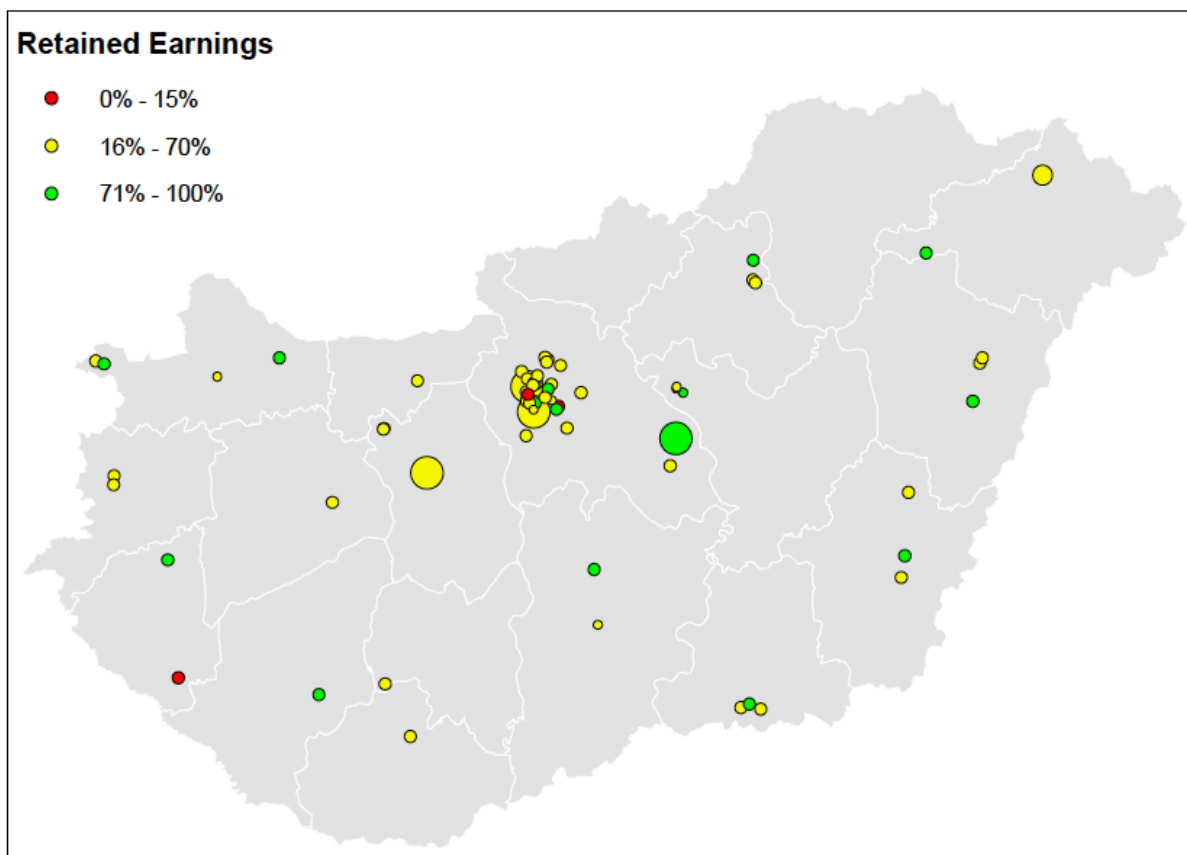
As seen earlier, the firm's size and ownership does not seem to provide a satisfactory explanation for the very unequal importance of retained earnings among the firms, so another possibility to be explored is whether geography, the firm's location might be an explaining factor. The firms' location in either Germany or Hungary is therefore analysed now and, within each of these two regions, in more central or more peripheral regions, to assess whether these factors might evidence patterns as well as what the explanations might be. Map 6 and Map 7 project the firms owned by domestic individuals in Hungary and Eastern Germany respectively, differentiated by the relative importance retained earnings play among their capital sources as follows:

- In red, firms for which retained earnings represent only a very small proportion of their capital sources (less than 15%): these firms rely primarily on external capital sources such as industrial equity, bank loans or trade liabilities. In other words, these firms engage to a stronger extent with external actors that are part of the relevant regional infrastructure of capital provision;
- In yellow, firms for which retained earnings represent between 15% and 75% of their capital sources
- In green, firms for which retained earnings represent over 75% of their capital sources: these firms are most autonomous in their financing and rely the least on third party capital providers (whether by choice or by necessity remains to be determined)

The size of the firms is also reflected by the size of the symbols between small, medium-sized and large firms.

In Hungary (Map 6), it seems to appear clearly that there is a contrast between the centre and the periphery: while the metropolitan region of Budapest is dominated by red and yellow firms, i.e. firms that have a low to medium level of retained earnings and therefore (are able to) rely strongly on other external forms of capital, the rest of Hungary (i.e. the more peripheral regions) is strongly dominated by (mostly small) yellow and green firms, i.e. firms

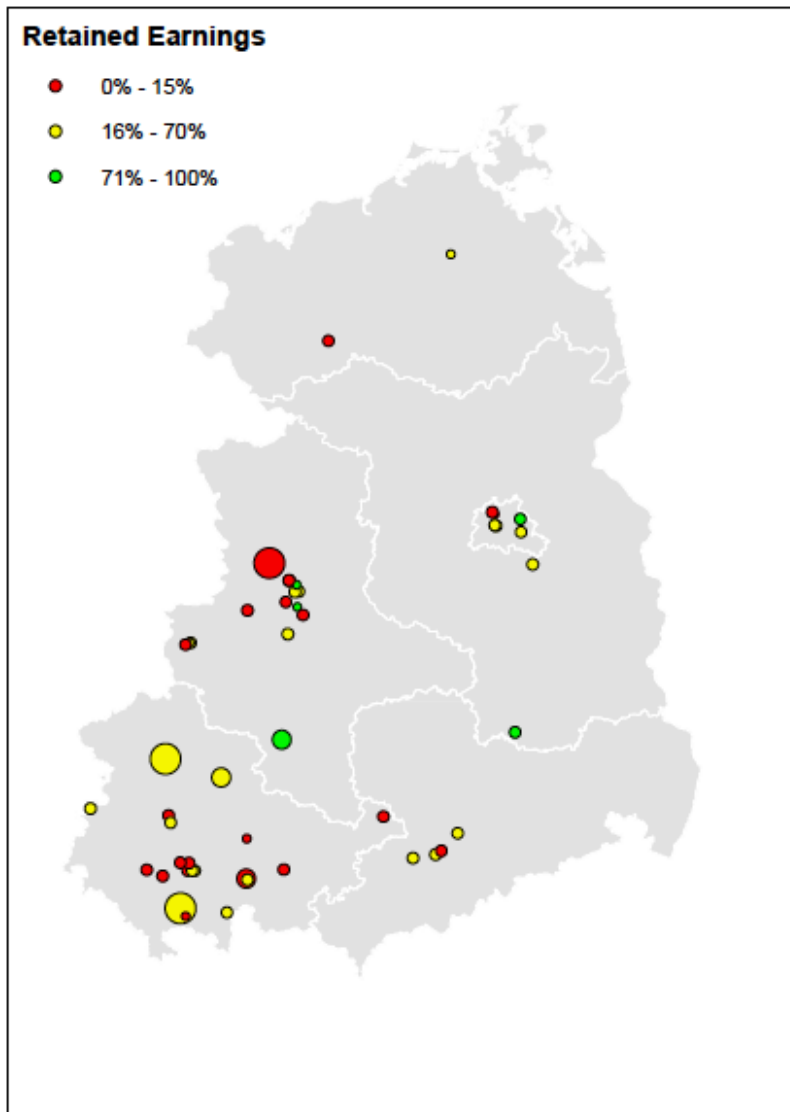
that have a medium to high level of retained earnings and therefore use external capital only to a very limited extent.



Map 6 Retained earnings for individually owned firms in Hungary

Source: author's calculations based on published annual statements

This looks like a potential confirmation of the idea that, similar to the question regarding the existence of a 'credit gap' discussed in the literature (cf. section 2.3.1.), there might be a regional equity gap as far as Hungary is concerned, because firms in the periphery seem to be lacking external capital and therefore relying on retained earnings, due to the distance from banks and the capital market in Budapest as discussed in Chapter 4.



Map 7 Retained earnings for individually owned firms in Eastern Germany

Source: author's calculations based on published annual statements

As Klagge and Martin (2005) recall, even though to a certain extent decentralised financial markets exist for example in Germany, other countries continue to have a very centralised financial system, as is the case of Hungary for example.

The data in Eastern Germany (Map 7) shows a very different picture: there are far fewer 'green' firms with a high reliance (>75%) on retained earnings, and the few that are seen are not in the periphery but in Berlin and in or near the automobile cluster of Thuringia. There are far more 'red' firms with very little (<15%) retained earnings, and this significantly includes most firms in the more peripheral region such as Mecklenburg-Vorpommern and Sachsen-Anhalt. What this suggests is that, unlike their Hungarian counterparts, firms in the Eastern

German periphery seem to be able to access other forms of capital from external sources and therefore rely less on retained earnings. It is far less evident to suggest the existence of a regional equity gap here than it is in Hungary, based on the empirical data of this study.

A different look at the same data is proposed by Figure 35, which distinguishes individually owned Hungarian firms between those located in the 'centre' (defined here as the NUTS1 region around Budapest) and the 'periphery' (comprising the two other NUTS1 regions of Hungary).



Figure 35 Retained earnings for individually owned Hungarian firms (center vs periphery)

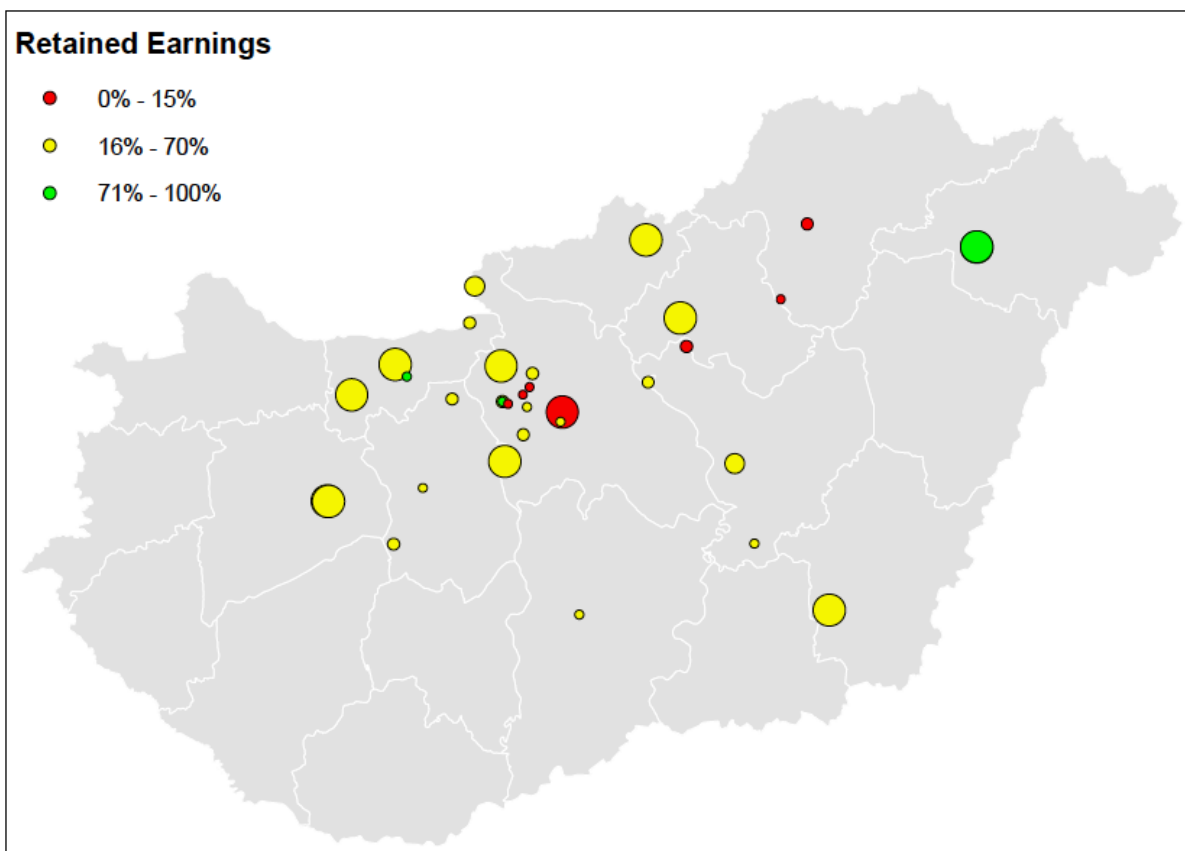
Source: author

While it is not very obvious to see a clear difference between the two groups (which means that there are firms with very high and very low retained earnings both in the Hungarian centre and in the Hungarian periphery), a closer look does reveal that firms with very high retained earnings tend to be located more in the periphery: while only 6 out of the 38 firms in the centre (i.e. 16%) have retained earnings above 70%, this is the case for 11 out of the 47 firms in the periphery (i.e. 23%). The contrast appears even more clearly when the threshold is set not at 70% but at 60%: while only 10 out of the 38 firms in the centre (i.e. 26%) have retained earnings above 60%, this is the case for 18 out of the 47 firms in the periphery (i.e. 38%). This conclusion needs to be nuanced of course: rather than revealing an 'absolute' distinction (which would have been that 'all firms in the periphery rely on retained earnings to a higher extent'), it rather reveals a tendency (i.e. 'firms in the periphery tend to rely on retained earnings to a higher extent') and also recalls that the level of retained earnings (like the other capital sources, but maybe even more than the others) ultimately depends on a range of factors (such as the performance over the last years etc.) other than the firm's size,

location and ownership, as well as the integration in the institutional infrastructures of capital provision and their relation with capital providers that are discussed in the next chapter. It may be a reflection of the firm's ability or choice to use external capital sources such as banks loans in particular, but it also depends on a range of other factors which could not be analysed within the scope of this study.

A different situation for firms owned by foreign individuals

The situation looks rather different for the foreign-owned firms in Hungary:

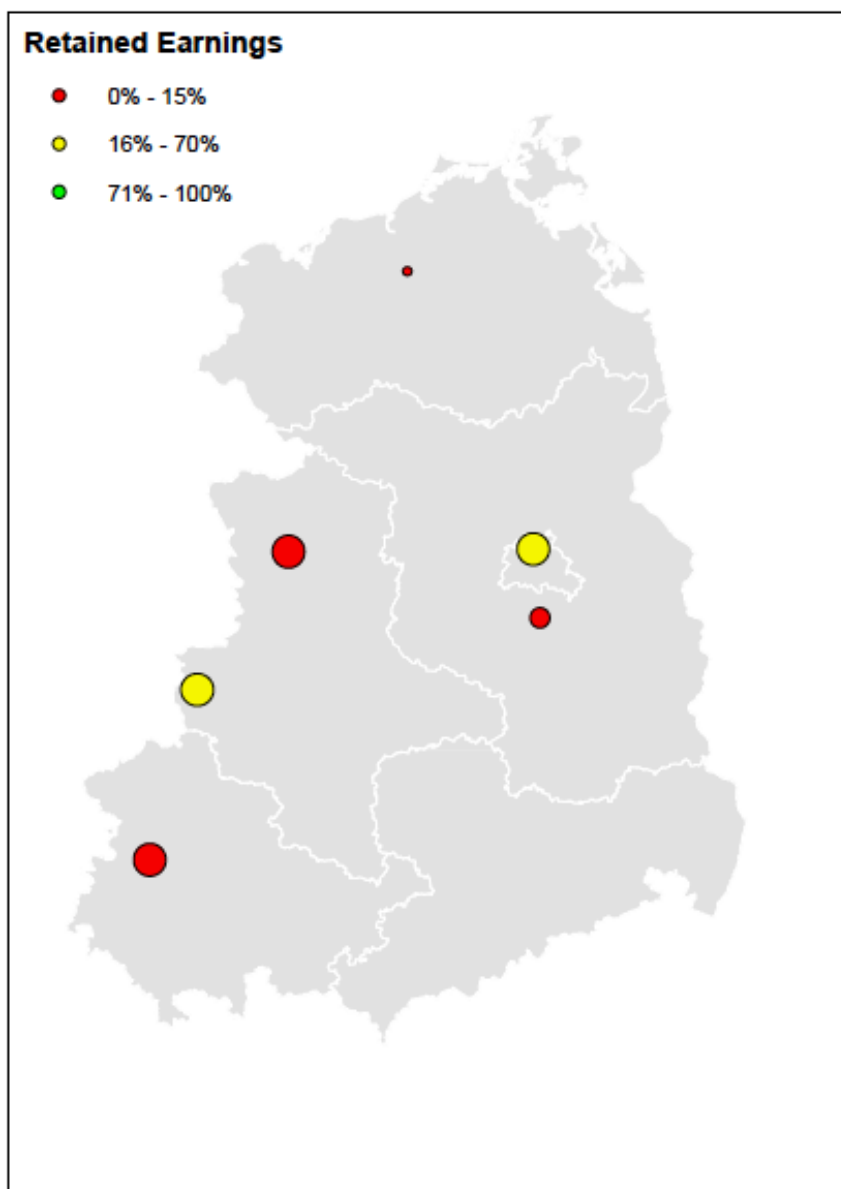


Map 8 Retained earnings for firms owned by foreign corporates in Hungary

Source: author's calculations based on published annual statements

These tend to have a lower portion of retained earnings than their locally owned counterparts (although they also tend to be located in less peripheral regions), likely a reflection of their disembeddedness out of their regions through their embeddedness through ownership relations in global production networks leading to their higher capacity (or need) to source external capital. Whether it is a question of necessity or choice for these Hungarian firms to almost exclusively use external capital sources is not revealed by this data.

In Germany (Map 9), with only six foreign owned firms for which the retained earnings ratio could be assessed, none of the firms in the sample show any material proportion of retained earnings but this could still be analysed in more detail to distinguish between those that use no loans and those that use some to see whether there is a difference between those that are ultimately owned by private equity and those ultimately owed by families or the stock market.



Map 9 Retained earnings for firms owned by foreign corporates in Eastern Germany

Source: author's calculations based on published annual statements

Regional capital gaps? Contrasting pictures between Hungary and Eastern Germany

In summary, this chapter has analysed the differentiated financing patterns of the firms and the higher or lesser degree to which they finance their investments and activities through external rather than internal capital sources, and the degree to which they both generate and retain profits (or not) enabling them to finance themselves through retained earnings (in turn enabling them to repay previously incurred external capital and/or to grow). This sets the empirical ground for the next chapter which explores the second and third research questions presented in Chapter 2: why these patterns may look the way they do and what the implications thereof might be. For example, to the extent a significant difference was found between German and Hungarian firms, this might be due to the respective variegated capitalism of these regions (as the concept was defined in Section 2.1). To the extent significant differences were found between firms in relatively central locations as opposed to the periphery, an explanation might draw on the literature on regional equity or debt gaps as discussed in Section 2.3.1. To the extent size or ownership has turned out to be a significant factor, the literature on geographies of finance (as presented in Section 2.3.2) more broadly might provide plausible explanations. The firm's ownership can also be analysed from the perspective of global production networks (as presented in Section 2.2) for both a theoretical support to provide a plausible explanatory account and potentially a critical reflection on potential predictions of the theory itself, to the extent the firms are owned by other car component manufacturers.

To conclude this chapter, the few key findings of the previous pages, regarding patterns of capital sourcing that were observed among a set of car component manufacturers in Hungary and Eastern Germany, can be summarised as follows:

- **Capital markets:** equity or debt sourced directly through the capital markets is virtually completely absent from the sample of firms but it is very present indirectly through the foreign car component manufacturers owning the firms in the sample, especially in Germany. The variegations of capitalism in both Hungary and Eastern Germany seem to involve connections with the capital markets for most firms only indirectly.
- **Equity:** owners' funds (i.e. capital contributed by the shareholders) are significant only for those firms that are owned by other car component manufactures, they are marginal for all others (in particular for firms owned by individuals). In other words,

only firms that are integrated in global production networks through ownership receive a significant proportion of their capital from their shareholders.

- **Bank loans:** bank loans are used more by German firms (“Mittelstand” in particular) than by Hungarians, suggesting a difference in the Hungarian and Eastern German variegations of capitalism with respect to the role played by banks in the respective institutional infrastructures of capital provision. Banks are virtually absent in firms owned by foreign firms, suggesting that the network embeddedness of firms through ownership by foreign firms weighs more in the decision to use (or not) bank loans as a capital source than the firm’s geographic location in a territory. A regional bank loan gap could however not clearly be evidenced by the data.
- **Trade liabilities:** the relative weight of trade liabilities does not seem to reflect the unequal power relations between smaller and larger firms within the global production networks. This somewhat contradicts the expectation based on the literature, but further factors would need to be studied to better understand whether or not unequal power relations between firms lead to a higher capacity of certain firms to use trade liabilities as a flexible alternative source of capital.
- **Retained earnings:** retained earnings are by far the most significant source of capital, in particular for individually owned firms in the Hungarian periphery. Firms in the Eastern German periphery rely on them significantly less than their Hungarian counterparts, evidencing a clear difference in the behaviour of firms based on their geographical location, both between Hungary and Eastern Germany and between the centre and the periphery of each of these two regions.

The next step, after having identified and described these patterns of **how** firms are financed, needs to be an attempt to explain them, identify the underlying causes and mechanisms **why** firms finance their activities the way they do and what the **implications** of these patterns on the firms’ governance and development prospects might be. This is the objective of the following Chapter 6, exploring the institutional context of capital provision in Hungary and Eastern Germany as well as potential other explanations and implications.

Chapter 6 Institutional Infrastructures of Capital Provision and Potential Implications

As discussed in Chapter 5, capital markets and private equity are virtually absent as a source of financing for car component manufacturers in Hungary and Eastern Germany. The utilisation of bank loans is very unequal and is more common among German firms than among Hungarian ones. Many firms, especially the smaller individually owned ones in more peripheral regions in Hungary, rely to a significant extent on retained earnings as an internal source of capital to cover their financing needs. This chapter explores (i) why that may be the case and (ii) what the potential implications on the firms' governance (and the role different stakeholders play therein) might be as well as wider local and regional development implications, with the objective of answering the second and third research questions of the study.

The chapter is organised in four sections: framed by the conceptual framework of variegated capitalism presented in Section 2.1, the first section (6.1) explores how the car component manufacturers engage with the (national and regional) institutional infrastructures of external capital provision in Hungary and Eastern Germany, both with regards to capital markets and private equity as more 'new' or 'financialised' sources of capital and with regards to banks and industrial equity as more traditional sources. It relates this to the empirical firm-level data discussed in Chapter 5 to illustrate and corroborate or contrast expectations deriving from the review of existing literature by the findings of the empirical research. The second section (6.2) aims to understand how this institutional context of external capital provision constrains (or is constrained by) the agency of firms and shapes their financing patterns (or is shaped by them) through the effects of different forms of embeddedness. It shows that the regional variegation of financing patterns observed in Chapter 5, especially with respect to the relative importance of retained earnings for firms in the Hungarian periphery, may at least partly be explained by regional variegations of capitalism and the firm's relative position in global production networks. The analysis thereby contributes to advancing understandings and explanations beyond the national frame, revealing factors that drive variegations of finance at different scales beneath the level of the national, with a key role among these factors for the firms' place within global production networks and regional variegations of capitalism.

The third section (6.3) focuses on the social and spatial geographies of power relationships between car component manufacturers and different types of capital providers in Hungary and Eastern Germany, and on what this means for governance within the firms. Capital indeed constitutes a relationship between the capital provider and the capital user, a relationship in which power is distributed unevenly. It further analyses what this implies in terms of circuits of value and for the ability of car component manufacturers and regions to both create and capture value. The fourth section (6.4) discusses what these variegated power relationships resulting from different capital forms mean for the firms' agency in terms of value enhancement and industrial upgrading, as well as for their resilience in crises and wider local and regional development implications. The analysis of the implications of various capital sources is thereby broadened from the impact on the immediate firm to wider implications in the local and regional development context in which the firms are embedded.

6.1 Firm Engagement with Institutional Infrastructures of Capital Provision¹⁹

In both Hungary and Eastern Germany, the national and regional institutional context of capital provision as conceptualized in Section 4.3 is marked by comparatively underdeveloped capital markets and private equity (i.e. comparatively 'new' and 'financialised' sources of capital) and by a banking sector and industrial capital (i.e. capital that is provided by investors that are themselves individuals or industrial firms rather than financial investors) which are strong but contrast starkly between the two regions. This section looks at how the car component manufacturers engage with these two groups of capital sources respectively.

6.1.1 Capital Markets and Private Equity: the Big Absentees

As set out in Section 2.1, capital markets and private equity are both most strongly developed in the Anglo-Saxon world (mainly the US and the UK) where they constitute a very common and important source of capital even for small and medium-sized firms. In the economic geography literature, they are considered as comparatively 'financialised' forms of capital in the sense that they introduce and increase the weight of financial metrics into a world traditionally more driven by industrial metrics. Capital markets and private equity are further seen in this literature as comparatively short-term oriented forms of capital, as opposed to

¹⁹ For further relevant context cf. also the FESSUD reports on Germany and Hungary (Detzer *et al.* 2013; Szikszai *et al.* 2013; Detzer *et al.* 2014; Detzer and Hein 2014; Badics and Szikszai 2015)

longer-term oriented bank loans and industrial investment. The following pages examine to which extent the car component manufacturers analysed in this study engage (or not) with capital markets and private equity in Hungary and Eastern Germany, as well as potential reasons therefore.

The Absence of Direct Involvement of Capital Markets and Private Equity

As shown in Section 5.1, car component manufacturers in Eastern Germany hardly use capital markets to source their capital, be it in the form of equity or debt: none of the firms in the sample analysed have their equity listed on a stock market, which would be the evidence of equity being sourced through the capital market. Similarly, none of the firms analysed seem to have any bonds outstanding, i.e. debt sourced through the capital market. The situation is similar in Hungary where almost half of the firms are individually owned and a significant number of firms is corporately owned, but none of the firms analysed seems to have its equity traded on the stock market. Similarly, the data collected did not evidence any bonds issued by the firms. Not precluding that there may be important indirect links and implications as will be discussed later, Section 5.1 has therefore shown that capital markets are totally absent as a direct source of financing for car component manufacturers in Hungary and Eastern Germany. This stands in stark contrast to the US or the UK for example, where numerous car component manufacturers source at least some of their capital in one form or another through the capital markets including not only large firms (e.g. Delphi Automotive Plc, Magna International, Inc. or Lear Corporation). While Börse Berlin theoretically and technically is a source of capital available for car component manufacturers in Eastern Germany, it is not in practice, evidencing that the institutional infrastructure of capital provision in the variegations of capitalism prevalent in Hungary and Eastern Germany does not typically imply a direct relationship between (even the local) capital markets and firms such as car component manufacturers.

As shown in Section 5.1.1, any form of direct private equity investment is also absent from this study's firm sample, although several firms are indirectly, i.e. ultimately, owned by private equity. Is this absence of direct private equity investment due to a general absence of private equity investors from the institutional landscape in Hungary and Eastern Germany, or is it due to certain features of the car component manufacturing industries in these regions that make them less attractive to private equity investors – or firm owners less willing to see a private

equity firm enter the capital of their firm? In Eastern Germany, private equity would in theory constitute a source available for car component manufacturers as there is an active market for private equity even for car component manufacturers in Germany as shown by Scheuplein (2012). However, as Scheuplein (2012) also shows, there are hardly any in Eastern Germany. This seems to suggest the existence of a regional private equity gap in Germany as evidenced by Wray *et al.* (2011) in respect of venture capital in peripheral UK regions. In Hungary, private equity is generally less present, and not relevant for the small, individually owned firms that constitute the bulk of car component manufacturers in this region, as well as for the foreign owned firms that constitute the other material group in the sample.

This institutional context of private equity in Hungary and Eastern Germany which is part of the overall institutional infrastructure of capital provision in these regions is likely to drive the demand and supply of capital markets and private equity capital for car component manufacturers in these regions. The absence of direct financing through capital markets and private equity may partly be due to the predominance of small firms in the sample, but also to cultural and other reasons. Recourse to capital markets and private equity would allow significant growth, but would also imply a loss of control, which is resisted by firms in particular when they are individually owned and when capital is less required such as in the case of firms owned by foreign corporates. In the absence of interviews with the firms themselves, however, this interpretation remains speculative and would need to be confirmed and further developed through future research.

No 'Impatient Capital' for Car Component Manufacturers in Hungary and Eastern Germany?

What does this mean for the second research question, i.e. why the firms finance themselves in the way they do, as opposed to how they could do it in theory or how they actually do it in other regions (notably the US and the UK)? Why is 'impatient capital' (here defined as mobile or volatile capital contributed through the capital markets or by private equity firms) largely absent from the sample of firms (as seen in Section 5.1.1) and why do they therefore focus more on 'patient capital'²⁰ (bank loans, industrial equity and, crucially, retained earnings)?

²⁰ A term that emerged in the US in the 1980s (Knafo and Dutta 2016) and developed in particular by Zysman (1983) for example.

One potential further reason might be timing and access to capital i.e. in some ways internal decision making concerning allocation of retained earnings might be the quickest source of capital of all (and at the same time the most patient), relying only on internal decision making within the firm whereas external capital involves other actors and interests and decision makers. Capital markets are the most 'impatient' and the slowest to access – but capital market can provide more resources and enables quicker growth in the medium term.

How does the different institutional context of capital provision in Hungary and Eastern Germany (as compared to the UK and the US for example) explain the significant difference in connection between car component manufacturers and capital markets? The differences or variegations in institutional context of capital markets in these regions may explain and help understand the absence of 'impatient' capital among car component manufacturers in Hungary and Eastern Germany. As seen in the literature review and in Chapter 5, small and medium-sized firms in Germany and Hungary traditionally do not have a direct link with the capital market and close to none of the equity or debt is sourced through these sources. Unlike larger firms, their shares are not traded on the stock market, they do not issue bonds on the bond market and they do not securitise their assets. This is due mainly to the comparatively small size of both their operations and financing needs and the resulting comparatively high transaction costs that would result in accessing the capital markets directly (Pollard 2003). The private equity landscapes in Hungary and Eastern Germany also differ significantly from those of more developed/traditional private equity markets such as the US and the UK. Private equity operates differently and targets different types of firms than capital markets, but constitutes a different dimension of financialised, 'quick' capital. This is another reflection of variegated capitalism which translates into a context that conditions the choices of firms when it comes to determining their sources of capital.

Despite this current absence of 'impatient' capital among the firms analysed within the scope of this study, there is currently some effort made towards a more direct circulation of financial capital in the form of debt between these firms and the capital market: one form of enhancing the access of small and medium-sized firms to capital market finance are Supply Chain Finance (SCF) programs, whereby receivables of smaller suppliers against the larger lead firms are used as collateral to obtain capital for the smaller suppliers from either banks or from institutional investors (through securities sold on capital markets). As shown by (Baumeister and Zademach

2017), such programs are present in the German automotive industry, although they are for the time being more common in Brazil. Under certain conditions, they can contribute to facilitate the access of SMEs to cheaper capital, although it can also be argued that they contribute to maintaining the uneven distribution of financial burdens in place (Baumeister and Zademach 2017). What role does this play in practice? As mentioned above, the absence of direct link between firms and capital markets does not preclude there being indirect links (with many of the foreign-owned firms in the sample being ultimately owned by private equity).

In line with what was seen in the literature review (in particular on variegated capitalism) capital markets and private equity play no big role in the provision of capital for car component manufacturers in Hungary and Eastern Germany and this is mainly due to a general underdevelopment of capital markets and private equity financing in these regions.

6.1.2 *The Reliance on 'Patient' Forms of Capital*

While Chapter 5 evidenced the absence of capital market and private equity finance among this study's firm sample as discussed above, it also showed that the more traditional/patient forms of capital provision that are banks and industrial capital do play an important though variegated role in the two regions concerned by this study.

As seen in Chapter 5, commercial banks constitute a very important tool of capital provision for all types of firms in both Eastern Germany and Hungary, albeit to a different extent: bank financing is more common and systematic for firms of all sizes and locations in Eastern Germany (with the rare exception of the few firms owned by foreign corporates). By contrast, it is less commonly found among Hungarian firms, in particular among those located in the periphery of the country. As discussed in Chapter 2, the institutional infrastructure of banks in Eastern Germany is marked by a strong relationship between firms and their 'home bank' (Hausbank, cf. Handke 2011)). The same is likely true for the car component manufactures of this study. In Hungary, by contrast, banking relationships are traditionally less developed and it is likely that individually owned firms may chose not to take any loans in order to preserve their autonomy, as shown by Bečicová and Blažek (2015) for car component manufacturers in the Czech Republic. What are the main differences between the banking landscapes in Hungary and Eastern Germany? How concentrated or regionalised are the banking sectors in

these two regions? Bečicová and Blažek (2015) question the relevance of this question (i.e. whether a more concentrated banking sector means more difficult access to credit for the firms in the periphery) in the context of a study on the concentration/foreign domination of the Czech banking sector. While the German banking sector is dominated by domestic institutions, the Hungarian banking sector is dominated by foreign institutions.

As seen in Chapter 5, most types of firms get only a very limited proportion of their capital from their shareholders directly: they rather rely on capital provided by banks or, even more strongly, on retained earnings. The only exception are those firms that are owned by other GPN firms, i.e. other firms that are themselves producers in global production networks of the car component manufacturing industry. In Eastern Germany, only a few of the firms of the sample fall into this category, such as Truck-Lite Europe or Autotest Eisenach for example. In Hungary, by contrast, a very large number of car component manufacturers is owned by foreign corporates and therefore receives a material portion of its capital from their owners. The likely reason for the foreign-owned firms receiving more capital through equity is that, to the extent the owners are individuals, they do not have the financial capacity to raise and inject significant amounts of capital. If the owners are domestic firms, they might have the capacity but no competitive advantage compared to the conditions at which their subsidiaries can raise capital in the form of loans from banks. The only material exception to this are those firms that are owned by foreign shareholders, which is likely due to their capacity to source capital at more interesting terms in their home country and then provide it to their local subsidiary.

There is a significant differentiation between car component manufacturers in Hungary and Eastern Germany regarding their ability to obtain bank loans and the conditions at which they can do so: one fundamental differentiation is geographical (SMEs in Western Germany having significantly more access to bank debt than comparable SMEs in Eastern Germany), another one concerns the ownership situation: SMEs owned by larger firms tend to obtain bank loans more cheaply than independent SMEs. From the bank's perspective, this is explained by an unequal credit risk – from the SME's perspective, this translates into an unequal ability to fund its projects and an unequal cost/financial burden for the SME.

As seen in the previous section, one measure increasingly considered to increase the amount of loans granted by banks to SMEs is to securitise them, i.e. to have banks sell these loans to

institutions that issue bonds subscribed by capital market investors, in particular to insurance companies. By selling the loans, banks remove them from their balance sheet, meaning that they are no longer required to reserve capital for the portion of the loans sold. This in turn increases the profitability (because the bank will have been paid an upfront fee for the initial granting of the loan) and hence the incentive for the bank to grant new loans. The securitisation of SME loans however seems to be far from the reality of bank loan financing in Eastern Germany, where the relationship between the bank and the firm very strongly remains seen as a long term relationship between the firm and its 'Hausbank' and in Hungary, where even though the banks tend to be foreign-owned and the relationship arguable a less long-term one, securitisation is not a common practice.

Does the above analysis evidence a strength of 'patient capital' (in the form of bank loans and capital injected by foreign GPN owners) among car component manufacturers in Hungary and Eastern Germany, as opposed to the weakness or absence of 'quick capital' (as embodied by capital markets and private equity) discussed earlier? The answer is probably more nuanced than that. It also needs to be mitigated by the finding that the really predominant form of capital is no external capital at all, but retained earnings as seen in Chapter 5.

6.2 Embeddedness and Interaction with Agency

This section broadens the scope by putting the analysis of the previous section into perspective with the theoretical framework set out in Chapter 2, in order to explain how institutional infrastructure of capital provision, set up and conditions of these various forms of capital sources determine whether and to what extent these sources are used by the firms. Looking at it from the perspective of embeddedness and agency and taking the institutional infrastructure of capital provision as analysed in the previous section as a basis, this section shows how territorial and network embeddedness constrain and modify the agency of firms and shape financing patterns in the way that was observed empirically. The main question explored is to which extent network embeddedness may affect territorial embeddedness and to what extent agency goes beyond both.

The section is organized in two parts as follows: the first part uses the concept of territorial embeddedness developed in Section 2.1 to explain how the location of car component manufacturers in certain regions and their relationship (or the absence thereof) with other

actors in these regions determines the capacity of the firms to use certain sources of capital rather than others. The second section broadens the analysis based on the concept of network embeddedness to explain how some firms are somewhat disembodied from their territories (and the associated constraints and limitations with regards to their sourcing of capital) by their being embedded in networks of global production, particularly in the form of ownership by another foreign car component manufacturer. One associated question is to which extent territorial and network embeddedness are a cause or a consequence of the financing patterns observed.

6.2.1 Effects of Regional Embeddedness in Variegated Forms of Capitalism

Most car component manufacturers analysed in this study are small to medium-sized firms with a single production site, located at the same place as the management and financial direction of the firm. Their location and territorial attachment to a specific place can consequently be assumed to be strong unless other factors (such as foreign ownership for example) mean they are disembodied from the region. In principle, the firms are embedded in a specific territory with relationships to a range of actors therein such as employees living there, clients and providers operating in the same region, regional government and others. Even for firms with a strong territorial embeddedness, relationships of course also exist with actors located beyond the region, such as with clients and providers located in other regions or countries, national government etc. However, the regional embeddedness determines the operation of the firms in many ways. Furthermore, it is not only firms as users of capital but also other actors as providers of capital that are embedded in their respective geography, their regions, their networks of relationships and their institutional context.

Embeddedness in Regional Variegations of Sources of Capital Provision and Firm Agency

Literature on the territorial embeddedness of firms usually focuses on the attachment of firms within a specific territory and the relationships with different types of actors therein. What does territorial embeddedness mean with respect to capital provision for car component manufacturers in Hungary and Eastern Germany? What is the relationship between these firms and the various types of capital sources and providers in their regions, in particular with local shareholder and local banks? How is each of them embedded regionally, and what does

it mean for their mutual relationships? Do high retained earnings mean high regional embeddedness and therefore stronger agency, stronger autonomy in their governance? How are the firms embedded in the institutional context of capital markets and private equity firms? How does embeddedness materialise concretely in this empirical context? How are the firms embedded in the institutional context of banks and GPN owners? When looking at how the regional embeddedness of car component manufacturers in variegated forms of capitalism frames their access to different capital sources, it first needs to be considered how capital providers themselves are embedded (or not) in the regions where the firms are located.

The single form of capital provider with a very strong territorial embeddedness are individual owners of the firms – but as seen in the previous sections these tend to contribute only a very small portion of the capital in the firms. As a result, firms with a strong regional territorial embeddedness tend to most easily access individual owners as capital providers, but these tend to be able to contribute only a very small portion of the capital. Industrial capital tends to be contributed mainly by foreign GPN firms that own a car component manufacturer in the region, so here again the territorial embeddedness of the capital provider is low, or created mainly through its owning the car component manufacturer in that region. The embeddedness with GPN owners materializes through the existence of capital provided by and shares owned by these GPN owners, also establishing a relationship between the firm and the GPN owner and embedding the firm in a network of relations with its implications. The embeddedness can also be indirect through a trading relationship between a firm and another one that has bank loans or is owned by a GPN owner.

Similarly, banks tend to be global institutions but there is a large empirical literature evidencing the importance of spatial proximity between firms and decision makers within the bank in respect to extending a loan. Second in the availability of capital based on the territorial embeddedness of firms and capital providers, banks will be available sources, to the extent they are themselves present in the regions in which the firms operate. And this is where a regional variegation of capitalism appears in Hungary and Eastern Germany. While banks in Germany have a strong local network and decision making takes places in spatial proximity to the locations of our firms, the landscape in Hungary looks different and firms located in the periphery of the country far from the larger cities and Budapest have much weaker ties and

relationships with banks than their Eastern German counterparts. This may explain why firms in the Hungarian periphery use banks loans to a lesser extent than firms in Eastern Germany regardless of the centrality of their location. The embeddedness of car component manufacturers in the institutional context of banking are primarily materialized through loans granted by banks to these firms. These loans materialise a relationship between the firm and the bank and come with a number of implications that shape the relationship and the action of the firm.

Private equity providers are global players too but spatial proximity does play an important role as evidenced by Wray *et al.* (2011) for example. In other countries (such as the UK for example), private equity would function according to a similar logic of spatial proximity as the banks, but as seen in Section 6.1.1 private equity is comparatively underdeveloped in Hungary and Eastern Germany and not really an available source of financing for the firms. Capital markets are probably the least embedded form of capital provision as seen above, as the firms that use them tend to be located all over the globe and spatial proximity does not seem to play an important role. Capital markets, finally, have a very low regional embeddedness (and therefore their location within or without the region of the firm should have relatively little impact) but as seen above the firms do not use them for other reasons. In short, the regional embeddedness of the car component manufacturers in variegated forms of capitalism, with what that means in terms of access to different forms of capital providers, has a direct impact on the availability of certain sources of capital over others for different types of these firms in Hungary and Eastern Germany.

What does this territorial embeddedness into regional institutional contexts of capital provision mean for the agency of the firms, how does it shape or constrain – in other words, how does it interact with it? To which extent does it make, in principle, available (or not) a range of different capital sources to the firms? The understanding of how firms are directly or indirectly embedded in institutional contexts of capital provision, as described above, does not in itself sufficiently explain why firms finance themselves the way they do. Another important question is what agency firms have, to which extent they can or cannot exercise options to use one source of capital or another.

The existence of banks providing loans in a region generally does not mean all firms can obtain bank loans in the same way. Banks have eligibility criteria determining to which types of firms

they are willing to lend and under which conditions they are willing to lend. Certain types of firms, such as those in peripheral regions in Hungary for example, may find it more difficult than others to obtain bank loans. This means that, within the institutional context of bank loan provision in these regions as a whole, the agency of firms is differentiated depending on their characteristics. The ability of a firm to use capital markets or private equity as a source of capital depends not only on whether these sources of capital are generally available in the relevant region. It also depends on whether the firm concretely fulfils the eligibility criteria requested by these types of capital providers.

The Relevance of Regional Financing Gaps

Linking back to the second research question (why firms finance themselves the way they do), how do this study's empirical quantitative findings challenge or corroborate the expectation based on the literature review? The preceding section explained how the uneven territorial embeddedness of firms and capital providers respectively interacts with the firm's agency for sourcing capital from different sources and thereby helps better understand the existence of the regional capital gaps observed in Chapter 5 especially with regards to retained earnings, which are much more prevalent in small, individually owned car component manufacturers in the Hungarian periphery.

While there is a regional capital gap due to firms choosing not to engage with banks and the capital markets (or not being able to), a range of efforts is made by governments to change this and to facilitate SME financing through a variety of programs.²¹ In the US, the SBA (Small Business Administration) has been dedicated since more than 50 years to guaranteeing financing extended by banks or other institutions to SMEs and also facilitates the obtaining of grants by SMEs. Similar institutions exist in Europe. Even where the state does not directly or indirectly provide financial capital in the form of equity, debt, subsidies or guarantees, it has a crucial role as a regulator for all other forms of financing: financing of GPN firms in Central Europe through the capital markets only became possible when the Central European governments and the EU allowed financial capital to circulate across the borders and allowed local firms to be purchased by foreign firms or to issue equity or debt to capital market investors. Governments and public institutions continue to play an important role in the way

²¹ Such as public support programmes especially when part of regional policy instruments, e.g. EU Funds.

capital market finance is regulated and encouraged or discouraged. Several lead firms in the automotive industry have even recently been and continue to be directly owned and/or financed by their respective governments: cf. for example the USD 17 billion loan by the US government to General Motors in 2008 (followed by its nationalisation between 2009 and 2013), the participation of the French state in the EUR 3 billion capital increase of PSA Peugeot Citroën announced in January 2014 or the long-standing participation of the regional government of Lower Saxony in the ownership of Volkswagen. In other words: (at least partial) public ownership of automobile firms and their financing by the state has never been limited to state socialism. This however seems to be limited to the large, strategic companies, i.e. the lead firms in the automotive manufacturing industry and does not concern the smaller companies in the automotive supplier industries.

Strong regional territorial embeddedness also seems to confirm the thesis of defensive financial behaviour according to which peripheral SMEs choose not to raise external capital and to use only the capital they can accumulate internally (Dow 1992). This is clearly something observed very strongly in the firms of the Hungarian periphery in this study. A fortiori, these firms will not be interested in any 'exotic' forms of equity such as private equity or venture capital (also the case for example among Czech firms, cf. Bečicová and Blažek (2015)). Can this be seen as a confirmation of the pecking order theory? In any case, this seems to be a case where strong territorial embeddedness means that agency exists (because it is the firms that choose not to use any external financing) but is used in a way that means that available sources of capital are not used. When a firm, such as the firms in the Hungarian periphery, strongly relies on retained earnings and hardly uses any other sources of capital, does this correspond to a strong territorial embeddedness and a weak network embeddedness (with other capital providers)? In any case, it is probably possible to say that a higher reliance on retained earnings reduces the dependence of the firm on outside sources, and thereby its embeddedness in networks of external capital provision. Does this at the same time strengthen their territorial embeddedness in their region? Probably yes, but this is an area for future research.

6.2.2 *Effects of Network Embeddedness in Global Production Networks*

The previous section demonstrated how territorial embeddedness of firms in their respective regions interacts with their agency for obtaining capital from different sources and leads to

capital gaps in certain peripheral regions in Hungary. This section has a closer look at a different form of embeddedness, network embeddedness, to explain some of the exceptions observed in the financing patterns where the constraints to agency resulting from territorial embeddedness seem to be overridden by other factors. It argues that one such factor is the network embeddedness of firms in global production networks, in particular in the form of ownership by other GPN firms.

Network Embeddedness through Ownership by other GPN Firms and Interaction with Agency

While the territorial embeddedness discussed in the previous section is characterized by spatial proximity between car component manufacturers and other relevant actors such as individual shareholders and local banks, network embeddedness does not rely on spatial proximity but on other forms of links which may exist between actors in very different places. As discussed in Chapter 2, global production networks are a very relevant manifestation thereof, with firms being embedded in networks of supplier and client firms that can be located across the globe. The focus of the analysis here lies less on customer relationships between supplier and client firms (because this does not imply a direct transfer of capital, even though there is an aspect of working capital provision that could be explored by future research) but rather on the relationships of ownership that exist between some GPN firms. As seen in Chapter 4.2.2, while this is rarely the case in Eastern Germany, a significant number of firms in Hungary are owned by foreign GPN firms and thereby very strongly embedded in a network that stretches far beyond the limits of the region. Network embeddedness provides access to other financing sources such as in particular owner's funds, as shown in Chapter 5. By contrast, the large number of firms from the sample that are owned by domestic individuals has a much weaker network embeddedness reaching beyond the limits of the region as it is constituted 'only' by the customer relationships they have with suppliers and clients within the GPN (and sometimes even these are weak in cases where exports constitute only a small portion of the business of the firms as is the case for some of them). Ownership by foreign firms may also change the culture in the owned firm and could, in theory, lead to an increased willingness to use capital sources such as the capital market, although this is in practice unlikely to play a material role.

Embeddedness in international networks of capital could materialise, for example, through the existence of listed shares or bonds of the firm that are traded on the capital markets, which is however the case for none of the firms in this study. Even for firms that do not have any listed shares or bonds, it can also be materialized through a trading relationship with a firm that does. The constraints imposed on the firm that does have listed shares or bonds can reflect on the trading relationship with the other firms, imposing certain standards for example or certain profitability requirements. In a similar way, the embeddedness of a firm with private equity materializes primarily through its being owned, usually not fully but partly, by a private equity firm. However, it can also materialise indirectly through its trading relationship with a firm that has a private equity firm among its owners. The constraints imposed on the firm that is owned by private equity can influence the behaviour of that firm towards its environment, including other firms that are not owned by private equity. In short, the embeddedness of car component manufacturers in the institutional context of capital markets and private equity can be both direct, through a direct relationship with such capital providers, or indirect, through a relationship with another firm that has such as direct relationship. Establishing a relationship of capital (be it of equity or debt) comes with several constraints imposed by the providers of capital, or by the legal and regulatory framework governing that type of capital. Examples could be obligations of transparency, adoption of certain accounting standards etc.

When car component manufacturers have a strong network embeddedness reaching beyond the limits of their regions as in the case of the numerous firms (especially in Hungary) owned by foreign car component manufacturers operating in the same global production networks, it clearly appears they tend to be financed in a very different way, using other types and sources of capital than their locally and individually owned counterparts. While locally owned firms rely to a significant extent on retained earnings and (for some of them in particular in Eastern Germany) on bank loans, foreign owned firms tend to have a much lower ratio of retained earnings, little to no bank loans, and tend to be financed primarily to industrial equity provided by their foreign owners. Does this mean the agency of the one group of firms is stronger than the agency of the other group? Not necessarily, it could rather be argued to be different without implying more or less capacity to act for one group of firms over the other.

Foreign owned firms benefit from their network embeddedness for example by banks giving 'credit' to this ownership (whether or not there is an explicit guarantee by the foreign owner) and therefore more easily extend loans, or, probably more importantly, by the firms obtaining capital directly from their owners more easily than through other sources. This on the surface seems to strengthen the firm's position. However, this does not mean the firms have a larger choice and more freedom in choosing between different sources than the locally owned firms. In reality, foreign owned firms no longer make the finance decisions themselves, these decisions are made by the foreign owning company and the agency of the local firms is just as constrained as the ones of the locally owned ones, even though the resulting capital sources used differ between the two.

Territorial Disembedding through Network Embedding?

The above evidenced how the specific network embeddedness of certain firms (in the form of their being owned by a foreign GPN firm) has a 'territorially disembedding' effect on the firms and affects the agency of these firms when it comes to choosing between different financing sources. However, it was also shown that it is not possible to conclude which of the two situations leads to a stronger agency of the firms: it was rather concluded that the agency is constrained in both cases, albeit in different ways leading to different financing patterns. It opens up new options to source capital (in particular in the form of owner's funds, while at the same time reducing the level of decisions taken at the level of the firm). In essence, this does seem to confirm the territorially disembedding effect of a firm's ownership. However, the data also shows that there are limits to such disembedding, such as when foreign-owned firms have significant retained earnings that are reinvested locally.

6.3 Implications on Firm Governance and Value Capture

As shown in Chapter 2, any external source of capital used by a firm implies a relationship between that firm and the provider of that capital, and this relationship implies an unequal distribution of power between the two. The relationship takes different forms, is formalized to different degrees and has variable durations, depending on the source of capital at hand. It means that the capital provider has some form of say over operating and strategic decisions taken by the firm. In other words, and based on the definition of firm governance as the 'authority and power relationships that determine how financial, material, and human

resources are allocated and flow within a [firm or network of firms] (Gereffi 1994: 97) as seen in Chapter 2, the capital provider is one of the stakeholders involved in the firm's governance and a particularly important one: some relationships are critical/key to the firms and capital is a central one (6.3.1). Through their say in the firm's governance, capital providers also influence the circulation and capture of value: the extent to which value created by the firm is retained and reinvested within the firm (retained earnings), distributed to shareholders (dividends) or transferred to other capital providers (banks in the form of interest, capital market investors in the form of a bond coupon) is influenced, among other factors, by the capital provider's weight on governance decisions (6.3.2). The degree of control over decisions relevant to the firm, the directness of that control and the capacity to effectively and durably influence governance and value circulation and capture differs depending on the source of capital at stake, as well as on the location, regional contexts and network embeddedness of the providers and users of the capital. Differences in the sourcing of capital by firms in Hungary and Eastern Germany result in different configurations of power relations and governance outcomes in these two regions.

6.3.1 Power Relations and Firm Governance: a Question of Autonomy and Control

This section explores how the different modes of capital sourcing identified for car component manufacturers in Hungary and Eastern Germany may lead to different outcomes in terms of the governance of the firms.

Power Relationships Resulting from Different Capital Sources and Variegated Impact on Firm Governance

Every provider of capital to a firm, be it in the form of equity, debt or subsidies has some form of control over what happens in the firm. The degree and form of that control, the channels through which it operates and the moments in the firm's life in which it is the most active, however, strongly depend on the type of capital at hand and the type of counterparty that provides it. Retained earnings are an exception in that they do not imply a relationship with a third party: they are sourced within the firm, even though it is primarily the shareholders that decide whether the firm can retain the earnings and use them as a source of capital. Relying on retained earnings (as many of the firms in this study's sample do) as a primary source of capital could therefore be seen as a means of reducing the firm's dependence on external

stakeholders and thereby preserving the firm's autonomy. The following discusses the form and type of unequal power relationships implied by the main forms of capital found to be used by the car component manufacturers in this study's sample in Hungary and Eastern Germany, distinguishing between equity, bank loans, subsidies and retained earnings.

Capital raised in the form of equity implies the most direct form of power: shareholders are the owners of the firm, they have the ultimate say when it comes to taking strategic decisions such as including, but not limited to, appointing new management, agreeing to a restructuring plan or deciding to wind up the firm. When equity is contributed by an individual or family founding a firm or entering its capital as a business partner, by a larger car supplier taking an equity stake in a smaller one, by institutional investors investing through the stock market or by private equity or venture capital firms taking a strategic equity stake, they become the owners of the firm and, as such, acquire the right to vote in all strategic and other important decisions to the extent these are not delegated to the management within the firm. The degree and frequency of their involvement (and hence the degree of 'activeness' as a stakeholder) depends on the type of firm: individual family shareholders (which is the case of most of the firms in this study's sample both in Hungary and in Eastern Germany) are typically involved much more strongly in the day to day management of the firm than the granular shareholders of a publicly listed company where decisions tend to be limited to validating (or not) the proposals made by the firm's management in the annual shareholder meeting. Firms owned by foreign firms (like a significant number of Hungarian firms in the sample) are in an intermediate situation: their shareholder's involvement tends to be less daily than that of an individual family shareholder's, but much more present than the one of shareholders in a publicly listed company (financing decisions, for example, will typically be taken at the level of the firm's foreign owners rather than of the firm itself as was confirmed to the author in a conversation with one of the firms in Hungary). As a result, most of the firms in this study's sample are in a configuration where shareholders have a relatively strong presence in the firm's daily management and the firm's managers (to the extent they are different at all from the firm's owners) have little autonomy for strategic decisions compared to the situation in large publicly listed firms. An important distinction however needs to be made here: when the firm is individually or family owned, often the owners will at the same time also be the managers of the firm and there are no external 'third-party' shareholders as such. This means

that in terms of governance, decisions are taken by the firm's management directly and there is no equity in place that would confer voting rights to shareholders external to the firm. This situation applies to a very large number of firms in this study's sample both in Hungary and in Eastern Germany.

Capital raised in the form of bank debt implies a different and less direct form of control: banks are not owners of the firm and as such do not have the same power and voting rights as the shareholders. However, loan agreements typically include a series of 'covenants' and other undertakings which de facto oblige the firm to orient its operations in a way which ensures these undertakings are complied with. This can include both the obligation of doing certain things (such as reporting a pre-agreed set of information on a regular basis), refraining from doing certain things (such as not granting security over its assets to other third parties) and ensuring certain things (such as performance ratios) are complied with. The power of the bank is based on these undertakings in the loan agreement and reinforced by the security over its assets that the firm will sometimes grant to the bank as a guarantee of its obligations. If there is a breach in any of these undertakings there is a risk that the bank enforces its security and takes control over these assets to get its loan repaid. To avoid this happening once the loan contract's obligations are breached, the firm is obliged to negotiate with the bank, the bank's power over the firm increases, the firm's obligations may increase further (and become more restrictive than before) and sometimes the firms will need to give further concessions to the bank if it wants the term of its debt renewed or refinance it through other debt. For those of the firms in this study's sample that use loans granted by large international banks (like some of the Hungarian firms), they must comply with standards (of reporting, covenants, format of documentation etc.) usual on the international loan markets, while for those firms that use loans from small local banks (which will more often be the case in Eastern Germany), more local standards of obligations may apply. In summary, the power of bank lenders over the firm tends to materialise in a different form and at different times than the one of the firm's shareholders.

Subsidies, granted by public entities such as the state or supra-national institutions such as the EU also entail certain obligations of the firm vis-à-vis the subsidy granting entity and thereby an unequal power relationship between the two. These will typically be of a different nature because subsidies explicitly aim to foster the development of the receiving firm but

may also comprise certain obligations of reporting and entail the obligation of using the funds for certain purposes rather than for others. Although, as seen in this study's firm sample, the amount of capital obtained through subsidies tends to be relatively small in comparison to the firms' other capital sources, the impact these obligations have on the firm can still be material. However, they will normally not entail anything like the strategic decision making power granted to the firm's shareholders, nor the threat of certain of its assets being seized as in the case of bank loans.

Finally, when a firm 'sources' capital by delaying payment to its suppliers, this creates a liability of the firm vis-à-vis the suppliers and therefore in theory some form of power of the supplier over the firm (in particular if the firm ultimately failed to pay the suppliers). In practice, however, this comes with very little power for the supplier 'providing' this source of capital. The power relationship is rather reversed in this case with the firm having been able to impose such favourable payment terms to the suppliers in the first place.

Retained earnings, by contrast, do not come attached with the transfer of any power to a third party. This is a form of capital that has not been contributed by an external party but rather been generated by the firm itself, it does not have to be repaid or remunerated and therefore is not directly attached with an unequal power relationship between the firm and an external capital provider. This suggests one of the primary potential reasons why some firms use retained earnings as a primary source of funding: it may stem from a desire not to enter into more formalised relations with external financial intermediaries. The one power relationship that does matter in this context, of course, is the one between the firm and its existing owners given that it is they who decide to which extent the firm is able to accumulate and maintain retained earnings as a source of capital (by retaining profits rather than distributing them in the form of dividends).

To summarise, each of the various sources of capital used by car component manufacturers in Hungary and Eastern Germany – equity, debt, subsidies, trade liabilities and retained earnings – comes with its specific form of unequal power relationship between the firm and the external actors that either enable the firm to accumulate and preserve the capital (in the case of retained earnings) or directly provide it (in all other cases). In some cases power relations may exist with third parties that have not directly contributed the capital themselves, but that have acquired the ownership stake from someone else (at a price which may be very

different from the amount of capital that was contributed originally). This is however particularly relevant for equity (and, to a lesser extent, debt) traded on a capital market, and therefore not of relevance for the firms in this study's sample.

By establishing different types of (usually unequal) power relationships as discussed above, the sourcing of different types of capital implies different forms of impact on the firm's governance. How does the power relationship specific to each type of capital provider impact the governance within the firm? Which of the car component manufacturers in Hungary and Eastern Germany see their governance modified because of their financing choices? Here it is necessary not only to distinguish between equity, debt and retained earnings as in the previous section but also to have a closer look at the different forms and sources each of these types of capital can take as well as on the locations of the capital providers.²² Amable *et al.* (2005) discuss how financial systems differ between countries both in the predominance of certain sources of funds over others (retained earnings vs. bank credit, bonds, shares etc.) and in the types of corporate governance prevalent: 'close links or loose links between firms' owners and managers, whether labour is represented on boards, the presence of an active market for corporate control etc.' (Amable *et al.* 2005: 321), the main differentiating factor being the various degrees of focus on short term profit objectives for the firm's capital owners.

Although the rights of an equity provider as owner of the firm are in principle the same regardless of the type of equity at stake (even though in practice there is some difference depending on the legal form of the firm and on the jurisdiction), the governance impact on a firm through the arrival of a new equity provider significantly differs depending on what type of equity provider this is. While private equity or venture capital investors will typically have a very active hands-on approach focusing on financial profitability and growth, industrial capital investors (such as individuals/families or GPN firms) will have an approach which is just as active but more focused on long-term/industrial growth. According to Scheuplein and Teetz (2014: 1), there is empirical evidence that, at least in certain cases, the takeover of a firm by private equity in Germany led to a decrease in the negotiating power of the works council (*Betriebsrat*) and trade unions within the governance structure of the firm. Scheuplein (2012) notes with respect to the German car component manufacturing industry that private equity

²² See also Amable *et al.* (2005) referring to institutional complementarity theory the impact financing relationships have on the strategic choices of firms.

firms as shareholders tend to exercise a stronger influence on the firm's strategic management than other types of shareholders, but that they at the same time hardly communicate with the firms works council – thereby weakening the traditionally strong say of works councils in the determination of firm strategy in German firms. Institutional investors investing through traded shares on the capital market, by contrast, tend to have a more distant approach (often mediated through asset managers and other intermediaries very much focused on financial metrics – here we are in the most financialised form of financing). However, the simple fact of having the equity traded on the capital market will have a significant impact on the firm's governance through legal and regulatory obligations of transparency, disclosure etc. which depend on the market on which these shares are traded. Only very few to none of the car component manufacturers in Eastern Germany and Hungary are in this case, with virtually no firms having their equity publicly listed on a stock market or counting private equity among their shareholders. Financialisation does not seem to play an important role here. What is more relevant is the presence of foreign GPN firms as owners of the Hungarian firms in particular: some of these are publicly listed themselves and as foreign owners tend to exert a rather close control over the local firms, the standards of international capital markets may filter through to some of the firms through this bias. As evidenced earlier, the most common form of equity is industrial equity contributed by either the individual founders/owners of the firms or by other car component manufacturers which have acquired an ownership stake in them. Financial capital in the form of stock market equity and private equity or venture capital is largely absent. Does this mean that, as far as equity is concerned, most of these firms are subject to a traditional, patient-capital type of approach? How does this materialise in practice/concretely? Among other implications, it means the firms are firmly anchored within 'closed governance' as opposed to 'open governance' as these terms have been theorized by Clark and Wójcik (2007). The overwhelming number of firms being individually owned in both Hungary and Eastern Germany, their shareholders are local individuals with usually a very close relationship based in the long term (often being founders of the firm which is passed on from generation to generation). As for the few firms that are corporately owned by other car component manufacturers, the shareholder relationship is less necessarily long term than that of individual shareholders, but still significantly more stable and involved than would be floating ownership through the stock market.

On the debt side as well, governance impact will depend on who the debt provider is. In a 'German-style' relationship banking relationship, the bank takes a long-term partnership approach with a close presence in governance of the firm. Sometimes, in the case of very large firms, this even materializes through the bank's presence on the firm's board but this is more rarely the case for small and medium-sized firms which represent the bulk of this study's firm sample in Germany. By contrast, a more transactional style banking relationship as found in Hungary will be more opportunistic or transaction based and imply less of a permanent dialogue reflected in the governance of the firm. In both cases, however, the loan agreements between the firm and the bank will foresee a certain number of covenants corresponding to obligations of the firm that have a certain impact on the firm's governance. Those of the firms in this study's firm sample (i.e. of most Hungarian firms) that do not use loans as a source of capital are free from any governance interference by banks, while those firms that do (i.e. most of the Eastern German firms) have a regular dialog with one or several banks as part of their ongoing governance discussions. While most of the firms have relatively long term (and closely involved) governance through their equity side, the situation is a bit more complex on the debt side. As shown earlier, many (but far from all) firms use bank loans at least as a complementary (although never exclusive) source of capital. Is it possible to evidence how the different types of banking relationships (relationship banking vs. transactional banking) translate into governance-relevant impacts? It would likely be found that, for those of the Hungarian firms that do use bank loans, relationships between the firms and their banks are less strategic and durable than their relationships with their shareholders (be they individual or even foreign corporate). In Germany, by contrast, it would likely be found that the banking relationships are almost as strategic and stable as the equity relationships, even among the *Mittelstand* firms that are owned by individuals or families.

By contrast, bonds on the capital market would come with many obligations of transparency etc. which would have an impact on governance, although the bonds holders themselves would tend to be very distant and not directly involved in the firm's governance – unless the firm defaults on its obligations in which case the presence of the bond holders may increase significantly. This form of governance impact, however, is not directly present in this study's firm sample given that none of the firms have been found to be using capital markets to raise debt or equity. What does the above mean concretely for this study's sample of car

component manufacturers and their governance? How do the unequal power relationships implied by the various forms of capital that these firms primarily use impact the way their governance is organized?

Autonomy through retained earnings?

Can the reliance on retained earnings that was found to be prevalent in a very large number of firms, in particular in the Hungarian periphery, be seen as a means of preserving the firm's autonomy and keeping it free from the governance interference of third party stakeholders? Very likely so, and potentially with an impact on the firm's strategy seeking to maximise profit (that can then be retained as retained earnings) rather than market share for example. As for subsidies, they probably also imply some form of governance interference through the conditionality that usually comes attached with them. Trade liabilities, on the other hand, likely do not come associated with governance impact given that this capital source, by contrast to the others, usually comes with a power relationship that is reversed (to the benefit of the capital receiver).

How about the firms that rely exclusively on retained earnings as a capital source? Are they free from any governance-related interference by third party capital providers? Their governance will be largely driven by the owners of the firm, even if (as is the case for many individually owned firms) these have contributed only very little capital in the form of equity themselves. But it is these owners that decide whether the profits generated within the firm are distributed as dividends or retained within the firm as a future source of capital. Ultimately, this is a question of autonomy and control: by choosing to use certain sources of capital rather than others, the firm's decision makers (i.e. the management and its owners) determine whether and to which extent the firm remains autonomous in its operations and independent in its strategic decisions or to which extent the governance of the firm is modified through the transfer of power and control capacities to other, external actors. The flipside is that a reliance on retained earnings limits the amount of capital available to the firm and therefore its capacity to invest in order to maintain its equipment up to date and further grow its business. Furthermore, is a reliance on retained earnings and the absence of third party capital sufficient to ensure the firm's autonomy and protection from outside financial pressures? No, considering that the firms have trading relationships with other firms which, in particular if they are integrated in global production networks, can arguably be almost of a

nature comparable to the one with a third party capital provider in terms of impact on the firm's governance.

6.3.2 Impact on Circuits of Value and Value Capture

The capital source-specific forms of unequal power relationships between car component manufacturers in Hungary and Eastern Germany and capital providers do not only have differentiated outcomes for the governance of the firms as discussed in the previous section: they also have a direct impact on the way value circulates between firms and regions and on the capacity of firms and regions to capture part of the value that is created in these firms and transits through the relevant global production networks and regions.

Circuits of Value and Value Capture

As discussed in Chapter 2, the concept of circuits of value is used in the global production networks literature to highlight how value created in the production process circulates between different actors and territories. What do the financing patterns observed in Chapter 5 mean in terms of value circuits? And how do the power relations analysed in Section 6.3.1 impact this circulation of value? It was observed that the firms in this study's sample have virtually no capital market or private equity funding, only little equity funding (except for foreign-owned firms), are funded through bank loans to various degrees (Eastern German banks by tendency more than Hungarian banks) and many firms rely to a very large extent on retained earnings as a capital source. This translates into a variegated range of power relations impacting the firms' governance and way the value the firms create circulates within and beyond the regions in which they are based.

Do the firms in this study's sample show little integration into wider (global?) value circuits through the limited degree of capital they source through capital markets, private equity and, even, bank financing? This needs to be nuanced given that there is integration through exports, i.e. in the trading relationships the firms have with other foreign firms within the global production networks. There also is integration through foreign ownership for those of the (mainly Hungarian) firms that are foreign owned. As a result, constraints, rules and metrics relevant on the capital markets and in the private equity world can have an impact on the circulation of the value created by the firms even though they are not directly related to these (financialised?) sources of financing. No empirical data is available to show the impact of

capital market debt, but relevant benchmarks might be used to compare this with the types of capital that are found in this study's firm sample through future research.

One concrete manifestation of the circulation of value are the profits generated by firms and their utilization either for payment of dividends to their shareholders or their conservation within the firm as retained earnings. When profits are distributed in the form of dividends, the value created by the firm circulates from the firm to its shareholders. When shareholders are located abroad, this means the value circulates away from that region to another region. When profits are retained within the firm and reinvested, for example through the acquisition of machines to modernize the technological stock of the firm, the value created by the firm does not circulate away but is retained within the firm. The profit distribution patterns typically vary quite significantly depending on the profile of the owners. Which types of ownership tend to come with particularly high levels of dividend distribution, which ones with particularly low levels of dividend distribution? Future research might show that firms owned by individuals tend to distribute less of their profits in the form of dividends, while firms owned by other firms, in particular financial firms and capital market investors, tend to distribute a higher share. In other words, value circulates to a higher degree away from the firm if the firm is corporately rather than individually owned (as evidenced by the lower degree of retained earnings?).

It should also be noted that the portion of turnover used to pay financial costs such as interest on debt is also part of value circulation. When a firm pays interest on a loan it has obtained from a bank, it uses part of the profit it has generated to do so, and that part of the profit thereby circulates away from the firm to the bank. When the bank is foreign based, this means this portion of the value circulated between regions from the region of the firm to the region of the bank. The firm and the bank thereby form part of an inter-regional circuit of value. Future research could analyse how much the firms in this study's sample typically pay for debt service and how this differs between different types or regions. It would likely be found that value circulates to banks more from German firms than from Hungarian firms given that German firms use bank loans to a higher extent – unless the interest rate paid by Hungarian firms is higher than the one paid by German firms (which is likely) in which case the contrary might be true. In any case, the analysis of interest payments between the firms and the banks is part of a broader analysis regarding the circulation of value between the firms and capital

providers, within or beyond the regions in which the firms are located, depending on the type of capital provider involved.

What does the high reliance of many of the firms in this study on retained earnings mean in terms of circulation of value? At first sight, one could think that the retention of earnings means that this portion of value does not circulate, that there is no circulation of value with respect to this portion of the value created by the firm. The value created by the firm is retained within the firm and reinvested in the modernization of machines or acquisition of new machines (unless it serves to increase the salaries but in that case it does not really constitute retained earnings because the money does not reach the stage of materialising in profit). In conclusion, it can be said that the various sources through which the firms are financed, through the variegated impact the resulting unequal power relationships have on the governance of the firm, result in differentiated outcomes in terms of circulation of the value created by the firm.

A concept closely related to 'circuits of value' is 'value capture' as defined in Chapter 2. A point of departure of the empirical analysis here is the analysis of circulation of value in the preceding section, given that the capture of value is a result of its circulation: value is captured at the end of the circuit in which it circulates. This can either be within the firm or region in which it was created, or within another firm and/or region to which it has circulated. The empirical data of this study does not allow to show how profits are distributed, which proportion of value created is used to remunerate capital, and how this differs between the various types of financing forms but this could be done through future research using the information contained in the firms' annual statements. An interesting distinction to be made here is between the location of capital providers, whether they be equity or debt providers, between local/domestic or foreign.

Does the absence of capital market funding and private equity in the sample of firms analysed mean that the value created by the firms does not circulate to these types of capital providers, and hence that no value is captured by global/financialised institutions? Not necessarily, as it has been demonstrated that there can be an indirect link through business and/or ownership relationships with firms that do have a direct link with capital markets and private equity. Thus, it is possible to be assessed by future research that trading conditions between car component manufacturers and their business partners are influenced by these firm' link with

capital markets and private equity in a way that, for example drives supplier prices down in a way that the firms create less value and, as a consequence, are able to capture less value than they would have had their off-takers price policy not been driven by capital markets and private equity.

By contrast, high levels of profit distribution to foreign shareholders are a clear sign for a low level of profit capture within the firm and the surrounding region. Future research would need to establish to which extent this is the case. A high level of profit distribution to local shareholders (even individuals) is a more complicated question, as it is not known where these profits are stored and what they are used for. If they are transferred to some bank account abroad this probably does not correspond to any value capture within the firm or its region.

With regards to bank loans, it would be interesting here to analyse (through future research) the location and origin of the banks that lend to the firms, although it would also be necessary to look at the sources through which these banks themselves are refinanced to complete the picture. Do firms that are financed to a high degree through loans (such as some of the German firms) reduce their capacity to capture value? Is a higher degree of value captured if the firms have less bank loans and therefore pay less interest? This would need to be explored through future research.

A high level of profit retention in the form of retained earnings is a clear sign for a high degree of value capture within the firm and the surrounding region. Profits retained within the firm directly correspond to value captured within the firm as they are translated into productive value such as machines. Is it possible to say that this means the value is captured within the region and benefits other local stakeholders such as employees (through wages), the local state (through taxes) and customers (to the extent these are local)? Future research could use the empirical data contained in the annual statements of the firms to show how much of the value created by these firms is retained, and hence captured, differentiating as relevant may be between the different categories of firms and between the regions. It would likely be seen that those firms that rely primarily on retained earnings as a source of equity capture a higher proportion of the value they create. At the same time, however, it would also be seen that these firms tend to be smaller than the others. Therefore, even though the amount of value they capture is higher in proportion, the amount of value they create may be smaller.

Consequently, the amount of value they capture in absolute terms may not be higher than the one captured by firms that are financed through other sources.

Retained earnings for maximisation of value capture?

The preceding section looked at how variegated patterns of demand and supply of capital, as evidenced among this study's empirical sample of car component manufacturers in Hungary and Eastern Germany, might translate into variegated patterns of circuits of value and value capture depending on the types and origins of capital providers and users involved. It was shown that the degree to which capital circulates and is captured within the firms and regions where it was originally created depends on various elements related to how the providers of capital impact the governance of the firms concerned.

An important question is whether retained earnings are indeed the strategy that allows a maximisation of value capture for the firms and their region, with a differentiation between the situations in Hungary and Eastern Germany. How does the different profile of capital sourcing in these two regions lead to different circuits of value? How, for example, does the predominance of local equity and bank financing in Germany determine how value is created, circulates and is captured by the firms in Eastern Germany? How, by contrast, does the predominance of both foreign equity and foreign bank debt in Hungary lead to a higher circulation of value and potentially less capture of value by car component manufacturers in Hungary than in Eastern Germany?

This analysis is driven by the predominance of retained earnings in many Hungarian firms: by relying on retained earnings to a very high degree, many of the Hungarian firms have only a limited participation in international circuits of value in the form of dividend distribution of interest payments. There may, however, nevertheless be a participation in international circuits of value if the main clients of these firms are foreign GPN firms. In this case, the value may circulate through the goods traded between the firms and these other foreign firms within a global production network. It could be analysed whether the empirical data tells anything relevant about this aspect, although it might be difficult to do so in a meaningful way.

This section discussed what lessons can be drawn from the analysis of financing patterns of car component manufacturers in Hungary and Eastern Germany in terms of circulation and capture of value in these regions and other regions. Focus was given to the different power

relations resulting from the different forms of relationships between suppliers and users of capital shape the governance of the firms and, as a result, the firms' agency in terms of circuits of value and capture of the value the firms create. The next section broadens the perspective to analyse wider local and regional development implications of these questions.

6.4 Local and Regional Development Implications

What can this study tell about the wider local and regional development implications of different forms of capital sourcing? Based on the assessment of how the car component manufacturing industry in Eastern Germany and Hungary is structured and on the variegated forms in which these firms finance their operations depending on certain geographical factors, this section assesses what this means in terms of regional development and on the possibilities these firms have to influence these financing patterns to enhance their options.

This question is answered by looking at what the different forms of financing observed may mean for the capacity of the firms to enhance value and achieve industrial upgrading by modernizing their equipment to conform with the standards imposed by OEMs and higher-tier suppliers (6.4.1). It further assesses what the firms' contrasting financing choices imply for their resilience or vulnerability in times of economic crisis and whether there are different models of regional development and different development trajectories that result from these contrasting financing choices (6.4.2).

6.4.1 Value Enhancement and Industrial Upgrading

Industrial Upgrading and Value Enhancement

How does the utilisation of certain capital sources over others (or the reliance exclusively on retained earnings as an internal capital source) impact the firm's capacity for industrial upgrading? The integration of car component manufacturers in the global production networks of higher-tier car component manufacturers and OEMs, or the continuation of their presence within them, is often conditioned by the compliance by these car component manufacturers with certain standards of production. These standards of production often imply a certain quality of equipment and a regular modernization to keep up with the required standards. Financing the acquisition of the equipment necessary to achieve this modernization and/or keeping up with the required standards may in some instances be possible by the firms' own resources (i.e. through retained earnings). Often, however, these

investments are of a size that cannot be financed merely through the firm's own resources and would require the access to larger sources of capital, be it in the form of equity or debt.

As shown in Chapter 5, it may be that some firms (in particular the smaller ones in Hungary) are reluctant to use capital sources other than retained earnings because, as shown in Section 6.3.1, such external capital sources would imply a loss of power and a surrendering of control to external parties. This raises the question whether this (voluntary) keeping away from external capital sources leads to these firms' incapacity to modernize in a way that would be necessary for their inclusion and/or maintenance in global production networks of larger car component manufacturers and OEMs and therefore perpetuates the dichotomy of car component manufacturers in Central and Eastern Europe with industrial upgrading and higher tier positions often reserved to foreign-owned firms and to locally owned firms being confined to lower-tier positions for limited value-added components.

What does this mean for value enhancement in the regions in which the firms operate? Does the strong reliance on retained earnings (and the resulting limited industrial upgrading of the firms) mean there is less value enhancement in the region, in the short, medium or long term? If many of the firms analysed (in particular the smaller Hungarian ones owned domestically and by individuals) remain excluded or struggle to integrate effectively into global production networks because of their reluctance or incapacity to source capital from external sources, the question is whether this also implies a reduced potential for value enhancement in these regions in the short, medium or long term. This might at least partially be mitigated, however, in the case of Hungary, by the many foreign owned firms that do access external financing and are therefore able to modernize and maintain their integration in the global production networks? To the extent these foreign-owned firms are otherwise embedded in Hungary (through local supplier relations, employment of the workforce, payment of local taxes etc.), their network embeddedness will likely lead at least to some value enhancement in the regions.

Retained earnings limiting industrial upgrading and value enhancement?

What does the above mean for the evolution of the firms in terms of industrial upgrading and the resulting integration and maintenance in global production networks, and how does the situation in Hungary contrast with the one in Eastern Germany? Is it in particular the small,

privately owned, peripheral firms in Hungary that are penalized by their unwillingness or incapacity to access external capital sources? The question is whether the corollary of the firm's reliance on retained earnings to preserve autonomy and maximise the capture of value is a limitation in their capacity to achieve industrial upgrading and value enhancement for their regions.

6.4.2 Resilience and Local and Regional Development

Broadening up the perspective from the concepts of industrial upgrading and value enhancement in the regions, this raises the question of what the variegated patterns of capital sourcing by car component manufacturers in Hungary and Eastern Germany mean for resilience of these firms and regions in times of economic crisis, and for local and regional development more generally.

Resilience and Local and Regional Development

Resilience, as this concept has been discussed in Chapter 2 from a geographical perspective (cf. also Pike *et al.* (2012)) also needs to be considered here. What do the firms' choices (in particular reliance on retained earnings rather than on external capital) mean for their resilience or vulnerability during times of economic crisis when their turnover goes down, client orders are reduced, prices for supplies go up, bank loans become more difficult to obtain etc.? What does this study's empirical data say about this?

As mentioned earlier, each type of capital comes with specific conditions which may vary between different regions and varieties of capitalism therein, and these conditions imply not only decisions at the operating and strategic level but also remuneration and repayment of the capital. Regarding the remuneration and repayment, there are big differences between the capital sources: while equity does not need to be repaid but dividend expectations can be relatively high (in particular for equity that is traded on the stock market and where shareholders are not directly involved in the management of the firm), debt needs to be repaid at a certain moment and a fixed interest (usually much lower than a typical dividend) is due on a regular basis. This has very different effects on the firm in times of economic crises, when the firm's cashflows are much more strained and firms struggle to generate the cash required to service the capital. When firms are unable to pay the interest of their debt the consequence can be very significant and imply that the loan becomes entirely repayable, assets seized etc.,

and the firm risks becoming insolvent. Equity is more flexible in that respect (as no principal repayment is due and dividends not fixed) but if the shareholders are 'impatient equity' and unsatisfied with the performance of the firm, they can provoke measures that are just as drastic such as shutting down plants, selling off parts of the business etc.

By contrast, a firm that relies primarily on retained earnings has none of the above constraints and is much more flexible, arguably more resilient in time of crisis. Does this mean that relying on retained earnings is always the best and safest way to be resilient in terms of crisis? Possibly, although it could also be argued that even the absence of obligations to repay or remunerate external capital may be insufficient to cover ongoing liabilities to suppliers, employees etc. in case of reduced turnover and therefore insufficient to avert insolvency. A firm that has access to external capital (in particular one that is owned by a foreign GPN firm and has access to capital support from that owner) may be better protected in case of a particularly severe crisis – provided the foreign owner is willing to support the subsidiary and help him through the crisis.

As discussed earlier, none of the firms in the sample of this study has any private equity firm investors as direct shareholders but what effect this might have on their resilience in times of crisis might be shown by what happens to firms that do: according to Scheuplein (2012), one of the frequently observed effects of a private equity take over on a firm is an increased rate of indebtedness (explained by the 'down-streaming' of the debt used by the private equity firm to purchase the firm to the firm itself, which results in a higher amount of bank debt held by the firm (in exchange of previously retained earnings that are up-streamed in the form of shareholder loans). Such new indebtedness cannot be used for new productive investments and may have a destabilizing effect on the firm.

During the global financial crisis that started in 2008, German car component manufacturers were particularly strongly hit (with turnover decreasing by more than 40% in many cases), many became insolvent and the firms controlled by private equity were concerned largely over proportion – over the entire decade between 2000 and 2010, a third (43) of the 130 German car component manufacturers controlled by private equity became insolvent (Scheuplein 2012). Was this due to the firms' over-indebtedness and other fragilising strategies of the private equity investors? Scheuplein (2012) offers a different potential explanation: while many car component manufacturers with no private equity investor

received strong support by the OEMs during the crisis (in the form of advance payments, or through assistance in the negotiations with banks, for example), firms with private equity investors did not get this support and (absent further financial support by the private equity investors) got into financial trouble and in many cases insolvent. After the insolvency, the OEMs in some cases helped broker a sale of the firms from private equity investors to (often foreign) industrial investors. This illustrates how the conflicting strategies between financial investors and OEMs (as identified in Section 2.2.3) can lead OEMs to exercise their power within their global production networks in a way that fragilises firms that are controlled by private equity and may ultimately lead to private equity reducing their investments in the sector, as it seems to have happened in German car component manufacturing (Scheuplein 2012). Scheuplein (2012) insist, however, that this strongly depends on the specific local context of the concerned industry and regions analysed, and that the strong trend observed in the case of car component manufacturers in Western Germany cannot necessarily be transposed to other industries or geographical contexts. Resilience in crisis (and its impact on regional unemployment) is therefore impacted by car component manufacturer's integration in global production networks not only via their relative position within the networks (as established e.g. by Pavlínek and Ženka (2010) in respect of Czech car suppliers) but also on their capitalistic relationship with other foreign car component manufacturers.

More broadly, balancing the various factors discussed (value enhancement/industrial upgrading, value capture and resilience), what do the capital sourcing patterns observed among car component manufacturers in Hungary and Eastern Germany mean for regional development in these regions? Do the different financing strategies discussed above (i.e. reliance on retained earnings or utilization of other external capital sources), with their respective implications on firm governance, circuits of value, value capture, value enhancement, industrial upgrading and resilience correspond to different models of regional development and lead to different development trajectories for the firms and the regions in which they operate? Does it make sense to say that reliance on retained earnings and reluctance to use external capital sources corresponds to a model of regional development based on slow, resilient, autonomous, sheltered growth? Given the empirical findings of this study, is this the model that would be prevalent in Hungary, at least in the regions dominated by locally owned rather than foreign owned firms? There is probably an argument to that,

although it needs to be mitigated in order not to be too simplistic (in particular considering the many foreign owned firms in Hungary that do rely on external capital provided by their foreign owners). On what kind of development trajectory are the firms that rely strongly on retained earnings?

By contrast, can it be said that a larger exposure to external sources of capital, be it in the form of equity provided by foreign owners (as in the case of many Hungarian firms) or of debt (such as is the case of many firms in Eastern Germany), corresponds to a regional development that is more turned towards quicker and dynamic growth, more strongly integrated into global production networks but also more exposed and vulnerable in times of economic crisis? This would then be the model prevalent in Eastern Germany and except for the foreign-owned firms in Hungary. Again, there is certainly an argument for that although it needs to be moderated. The fact that much of the external capital in Eastern Germany is provided by German banks in particular, and the traditionally strong relationship between the firms and their *Hausbanken* as seen above (Handke 2011) probably mitigates the vulnerability of the Eastern German firms in times of economic crisis.

Ultimately, this boils down to the well-known question of ‘what kind of local and regional development and for whom’ (Pike *et al.* 2007): both strategies (reliance on retained earnings vs. access to external capital sources) have their pros and cons in terms of local and regional development, but they correspond to very different development models and to contrasting development trajectories, implying different short, medium and long term outcomes for the firms and their internal and external stakeholders such as employees, owners, clients, or business partners.

A more nuanced evaluation of the impact of relying on retained earnings

This chapter has attempted to identify potential underlying reasons explaining why car component manufacturers in Hungary and Eastern Germany source their capital in the way they do depending in particular on where they are located and who they belong to, and what implications this might have on their firm governance and on local and regional development. In the absence of interviews with the firms which would provide further insight about the firm’s motivations in their capital choices, the potential reasons and impacts identified necessarily remain assumptions which would need to be tested through further research.

Among the potential reasons identified, focus was given to the institutional infrastructure of capital provision prevalent in Hungary and Eastern Germany as part of the existing variegations of capitalism in these regions. This includes in particular the comparatively underdeveloped capital markets and the comparative lack of private equity investment in both regions. The role of banks was found to be different in Germany (with a traditionally stronger role of relationship banks with firms) than in Hungary (where the concept of 'relationship banking' seems to be less prevalent). By contrast, foreign GPN firms as equity investors play a much more important role in Hungary than in Eastern Germany, simply due to the much higher number of foreign-owned firms in Hungary.

Among the potential implications, variegated impacts on the firm's governance due to the presence or absence of different types of capital providers were identified, as well as implications of the firms' ability to industrially upgrade, for their development trajectories as well as, more globally, for the circuits of value, value enhancement and regional development models of the regions in which these firms operate, which may lead to contrasting development outcomes and trajectories in each region.

Chapter 7 Conclusions

This study set out to explore the geographical implications of how firms are financed through different capital sources such as equity, debt or retained earnings. It endeavoured to understand why certain types of firms use certain types of capital more than others and what this may mean for these firms' governance as well as for local and regional development. The study's conceptual framework combined theoretical work on three related areas: first, varieties of capitalism and variegated capitalism, reflecting the idea that the institutional infrastructure of capital provision to firms is not uniform across space but materialises differently in places depending on political, historical, social, economic and institutional context and particularities of regions. Second, global production networks to conceptualise network embeddedness of firms in trans-regional networks of production also comprising non-firm actors. Third, geographies of firm finance, with important contributions already made by economic geographers to better understand geographical implications of firm finance such as, among other aspects, the difficulty of small and medium-sized enterprises to obtain capital in peripheral regions, or the impact, on a firm's development, of sourcing capital from a new source such as the capital market (cf. the example of the Vauxhall brewery in Sunderland (Pike 2006)). Chapter 2 highlighted certain conceptual, theoretical and empirical research gaps identified in these areas: first, the calls by literature on variegated capitalism for more critical attention to less well studied geographies such as post-socialist areas of Central and Eastern Europe. Second, the need for better understanding how finance interplays with global production networks as highlighted by GPN research. And third, the need for a more nuanced and fine-grained analysis of the geographical nature and implications of firm finance evidenced by research on the geographies of firm finance.

To address these gaps, the study explored three research questions through empirical analysis of a sample of car component manufacturers in Hungary and Eastern Germany:

- What are the main sources of capital used by these firms and which structural patterns can be observed?
- How can these patterns be explained by geographical factors concerning both firms and capital providers, as well as their respective institutional context?

- What is the potential impact on the firms' governance and on local and regional development more broadly?

The choice of the empirical scope was justified by these firms being both a good and well-researched example of global production networks (with inter-regional connection and network embeddedness with other firms and regions) and strongly anchored in two regions that share a state-socialist past and current EU-membership and at the same time contrast in the path they have taken since the fall of the Iron Curtain - Eastern Germany having been absorbed in the pre-existing specific variety of capitalism prevalent in Western Germany and Hungary having had to develop its own path. The mixed methods approach used to conduct the empirical research combined analysis of quantitative data for about 320 firms across the two regions with qualitative data from academic and other publicly available secondary sources.

This final chapter discusses the key empirical findings, main conceptual and theoretical contributions, limitations and avenues for future research. Empirically (7.1), the study highlights the marked absence of capital markets and private equity as a direct capital source for the firms analysed in both regions, a dominance of retained earnings for most firms, similarities in bank lending between Hungary and Eastern Germany and the significant impact foreign corporate ownership has on the behaviour of firms when it comes to sourcing capital. It further provides indications for the potential existence of a regional capital gap in Hungary, but not in Eastern Germany. Conceptually (7.2), it highlights the conditional and limited nature of financialisation, the territorial disembedding effect of ownership in global production networks and the double-edged nature of retained earnings as a tool for enhancing firm agency. The main limitations and avenues for future research (7.3) concern the access to qualitative firm level data to interpret the quantitative data collected, the consideration of tier-positioning and trade relationships between GPN firms from a financial perspective and a broadening of the scope of analysis, in particular in temporal terms with regards to the evolution of capital sources over time.

7.1 Key Empirical Findings

In empirical terms, the key findings of this study contrast in some aspects with what was expected based on previous research conducted on related topics, while in others it has confirmed such expectations.

Absence of capital markets as a direct funding source

Much literature on geographies of finance, in particular when dedicated to financialisation, focuses on the impact of capital sourced through the capital markets on a publicly listed firm's governance and development (mainly because data is most easily available for those firms (Zingales 2000)) as well as on private equity ((Clark and Wójcik 2007)). One finding of this study, however, is that these types of capital sources are not only in the minority (as already expected based on Zingales (2000)) but even absent as direct capital sources for the sample of firms analysed. This is very likely due to the combination of the characteristics of the firm sample analysed, consisting largely of small and medium-sized firms, and of the geographies studied: Hungary and Eastern Germany where capital markets and private equity are less developed compared to the US or the UK. While small and medium-sized firms do source capital through these sources in regions with comparatively more developed capital markets and private equity (such as the US or the UK, even Western Germany), and while there is a capital market in Hungary and Eastern Germany used by larger firms in particular, the small and medium-sized firms in both regions tend not to have any direct access to these (more 'financialised') sources of capital.

What this suggests is that, within a specific variegation of capitalism, the particular relationship between firms and the financial markets of a society (as identified as a relevant factor by Hollingsworth and Boyer (1997b: 2) for example) can also materialise in the form of an *absence* of engagement with these types of actors. This might be an indication that firms (by way of exercising their agency) choose to avoid a confrontation with the "set of expectations [of capital market investors] as regards [...] the proper form of governance [which may be] at odds with history and geography [of the firm]" (Clark and Wójcik 2007: 17) by refraining from seeking to obtain capital from this type of investors. In some ways this is not fully surprising considering that some of the existing literature recognises that "even in market finance systems, internal finance and bank debt remain the predominant sources of

financing [...] and the stock market does not play a major role” (Aglietta and Breton 2001: 450).

As a consequence, the study did not explore the potential implications of direct capital market and private equity funding on car component manufacturers to compare findings with existing literature concerned with these questions. However, while no direct presence of capital sourced through the capital markets or private equity could be evidenced, an indirect presence was identified for a majority of those firms that are owned by foreign GPN firms, as these foreign GPN firms often have their equity traded on the stock market and/or are owned by private equity. As discussed in Section 4.2.2, this is the case for an important proportion of the firms particularly in Hungary, while foreign ownership (and hence indirect ownership through the capital market and/or private equity) is found much more rarely in Eastern Germany. This study found no marked difference in the financing patterns, within the group of foreign-owned firms, between those that are ultimately owned through capital markets and private equity and those that are owned by foreign firms that are themselves privately held: the main differentiating factor seems to be the ownership by a foreign firm (whether that is ultimately owned privately or through the capital markets) as discussed below. There may nevertheless be an impact of indirect ownership through the capital markets, which might materialise in impacts on the firms without necessarily being reflected in the financing patterns – this would need to be explored through further research.

The dominance of retained earnings

Another finding which somehow contrasts with most of the existing literature reviewed is the dominance of retained earnings for most firms. Much of the existing literature on geographies of finance focuses on unequal power relationships between firms and various types of third party capital providers, but little attention so far has been given to the one source of capital which does not imply any relationship (and hence governance implication) with a third party: retained earnings as capital produced by the firm itself. A high proportion of the firms in the sample were found to be using retained earnings to a relatively high extent, almost regardless of their size, location or ownership situation. While retained earnings seem to play an important role for most firms in both Hungary and Eastern Germany, there does seem to be geographical differentiation between Hungarian firms on the one side and Eastern German firms on the other side, with almost all Hungarian firms having a minimum “safety cushion” of

at least 20% retained earnings, while there are some German firms that have virtually no retained earnings. The proportion of retained earnings was found to be particularly important for small- and medium-sized firms in Hungary, some of which rely on it as an almost exclusive source of capital. In accordance with what would be expected from the pecking order theory (Myers 1984), this might suggest a preference of firms for this internal source of capital to external sources such as bank debt or equity from third parties, with the additional insight suggested by the findings of this study that the pecking order theory might be of particular relevance for firms in the geographical periphery.

The main implication of this is that when firms are found to be relying heavily on retained earnings, this reduces the extent to which these firms depend on external capital providers and the extent to which these external capital providers play a role in the governance of the firms. This is likely (as already suggested by some of the existing research, e.g. Bečicová and Blažek (2015)) an important reason why these firms chose to rely primarily on retained earnings rather than on external capital sources. When Hall and Soskice (2001b) consider that one of the key dimensions characterising a particular variety of capitalism is the way firms resolve the coordination problem in the sphere of corporate governance, this study suggests that one form of resolving it might consist in avoiding the role of any third parties in the firm's governance by refraining from sourcing any capital from such third parties and relying on retained earnings instead. It also means that while capital is very relevantly conceptualised as a 'social relationship' between capital owners and firms (Bryan *et al.* 2009; Corpataux and Crevoisier 2016), it is also necessary to consider that some firms may choose to avoid the implications of such relationships by having recourse to retained earnings which do not entail such a social relationship with an external third party.

Similarities in bank lending between Hungary and Eastern Germany

In terms of bank loans, the study has shown that they are used in a more prevalent manner by German firms than by Hungarian firms, which often do not use this as a source of financing at all. And even when Hungarian firms use bank loans as a capital source, these tend to represent a smaller proportion of the aggregate capital sources of the firm (often not more than 20%) while the proportion of those German firms that do use bank loans is generally higher (around 40%). Most of the banks providing loans to firms in Eastern Germany are local in the sense that they are based in the same country (even though most are based in Western

Germany) while most Hungarian banks are foreign owned. This might reflect different financing practices of banks in the two regions, with banks in Eastern Germany accepting a higher 'leverage' (i.e. proportion of the bank loan compared to the firm's assets) than in Hungary – or potentially a willingness of the Hungarian firms that do use bank loans to keep this comparatively limited. These potential reasons would need to be further explored and verified through further empirical research. One methodological obstacle was the fact that small firms in Germany tend not to report the proportion bank loans represent on their balance sheet (simply because they are not legally obliged to do so), meaning that while the existence of bank loans could be tested for Hungarian firms of all sizes, this could only be done for medium-sized and large firms in Eastern Germany. The findings of the study nevertheless suggest that the reasons for such variegation in bank loan utilisation are, for part at least, due to the different institutional infrastructure of capital provision in the two regions, with a role of banks traditionally more relationship based in Germany (Handke 2011), even Eastern Germany, than in Hungary.

Based on the limited data available, the findings of this study do not seem to suggest there is a credit gap for (at least medium-sized and large) individually owned firms in Eastern Germany with regards to their more central or peripheral location - at least with regards to the outcome of their negotiations with banks (which is what is evidenced by the existence or not of bank loans on the firms' balance sheet). This does not, however, allow us to assess whether or not the process of obtaining bank loans is more difficult for firms located further away from the financial centres in Eastern Germany, as discussed by Klagge and Martin (2005) for example – such an assessment would require a direct discussion with the firms concerned through future research.

Foreign corporate ownership as a key differentiating factor

One factor which was found to be highly relevant for the patterns of capital sourcing of the firm is their ownership, and in particular the ownership ties which often exist between firms that are part of the same global production networks. As highlighted by Czaban and Henderson (1998), firm ownership is an important factor in post-socialist economies influencing the way firms behave in various aspects and the high number of foreign-owned firms in Central and Eastern Europe is at least partly due to the fact that many foreign GPN firms chose to acquire equity stakes in local firms rather than develop less committed (and

therefore less controlled) forms of corporate relations. Those of the firms that are now owned by foreign corporates (which in almost all cases are larger international GPN firms) were found to have markedly different patterns of capital sourcing than those who are not (and which in an overwhelming majority of cases are owned by local individuals, often the same as those who also manage the firm on a daily basis): the foreign-owned firms are the only ones that are financed to any significant extent through equity (in the sense of fresh capital injected by the owners) and who almost never use bank loans as a source of financing. This is probably an indication that these firms can source capital more cheaply in their home region than is possible for the local firm in Hungary or Eastern Germany. It is also not necessarily in contradiction with Myers (1984)'s pecking order theory considering that the pecking order theory stipulates that firms will avoid raising capital from new external equity providers if they can because this would be the most expensive form of capital and in order to avoid a transfer of power and governance influence to these new external actors, but that in the case of equity provided by a foreign corporate owner, this form of capital is not necessarily more expensive (or simply more easily available) and that power and governance influence already resides with that foreign firm: as a consequence, there is no further transfer of power and governance and influence induced by the provision of equity by that foreign owner.

Regional capital gaps?

Finally, the study also revealed indicators for variegation at regional (rather than national) levels and the potential existence of a regional capital gap, at least in Hungary, challenging the VOC school's "tendency to reify national economic boundaries" (Peck and Theodore 2007: 738). Looking at the reliance of Hungarian firms on retained earnings for example, a gap appears between those closer to the capital city Budapest with its financial institutions (tending to rely on retained earnings to a lesser extent) and those located more in the periphery (tending to rely more strongly on retained earnings and only rarely taking out loans from banks). This supports the argument of Crouch *et al.* (2009) for the existence of regional variegations of capitalism, according to which a firm's behaviour can be less dependent on national institutions and infrastructure as classical VOC theory would suggest, but rather depend on other, more local factors such as the absence of local financial institutions in peripheral regions or a limited propensity of the institutions in the centre to provide capital to these firms. The research thus advances the knowledge of variegations of capital not only

at the national but also at the regional level, but these findings should be used with caution as not all factors which might influence the degree of retained earnings (such as losses made in previous years, distributions of dividends to shareholders etc) could be analysed within the scope of this study. Furthermore, none such regional variegation could be evidenced in Eastern Germany where there is no perceptible difference in the financing patterns observed for firms in more central locations (around Berlin and in Thuringia) than in the periphery (Mecklenburg-Vorpommern) for example.

For Hungary where there seem to be indications for the existence of a regional capital gap, the only apparent factor seemingly neutralising the effect of a firm's location in the periphery is its ownership by another (foreign) car component manufacturer, which leads to the firm's being primarily financed through shareholder funds and less relying on either bank loans or retained earnings, regardless of its location. This is coherent with Crouch *et al.* (2009)'s assertion that larger firms (or firms that are owned by larger foreign firms) have the ability to establish governance (or capital sourcing) structures that contrast with the ones otherwise typically seen in the region. In GPN terms, this might be an indication that the network embeddedness of firms in global production networks (at least when this network embeddedness takes the form of ownership ties) is able to override the effects of the firm's territorial embeddedness when it comes to the sourcing of capital by the firm, as discussed in the summary of this study's conceptual contributions hereafter.

7.2 Main Conceptual and Theoretical Contributions

Based on the empirical findings summarised above, what are the main conceptual and theoretical contributions of this study, how do they tie in with wider questions and debates in economic geography and cognate social sciences?

The conditional and limited nature of financialisation

By evidencing the absence of direct provision of capital to these firms through capital markets and private equity, the study highlights the conditional and limited nature of financialisation. From the perspective of variegated capitalism, the study has indeed evidenced differences in the institutional infrastructure of capital provision in the formerly state-socialist regions of Hungary and Eastern Germany compared to more 'financialised' (or, in VoC terms, LME-type) regions such as the US and the UK with more strongly developed capital markets. The prime

difference identified - and one in respect of which there seems to be little difference between Hungary and Eastern Germany - is the marked absence of capital markets and private equity among the institutions that form part of the customary infrastructure of capital provision for local firms. Capital markets and private equity are overall comparatively less developed in these regions, with fewer companies having their equity or debt listed on the local capital markets, fewer investors investing capital through the local capital markets and fewer private equity firms investing in fewer firms that are located in these regions.

Most likely, this lack of engagement between the firms analysed in this study and the capital markets is due to a limited willingness of the relevant parties to engage due to their geographies: on the one hand, it is likely that many capital market investors and private equity firms (which in most cases are based at a certain geographical distance outside the region of the firm) have only limited or no appetite to invest in regions where comparably less market information is available (and more difficult to obtain due to the geographical distance) or where the risk is perceived to be higher. On the other hand, it is likely that some local firms, even though they would in principle be able to source capital through the capital markets or from private equity, refrain from doing so in order to preserve their autonomy (be it at the cost of remaining small in the medium term in the absence of significant third party capital injections), or simply because they are not familiar with it. Even though it was not possible to test this assumption empirically, it appears plausible in the light of Bečicová and Blažek (2015)'s finding that some firms in the Czech periphery choose not to apply for bank loans in order not to compromise their autonomy. If firms refrain from seeking capital from local banks, it appears very likely they would also refrain from seeking it from foreign capital markets or private equity investors. Indeed, in the capital market, firms are the object of a 'public evaluation that brings together and co-ordinates the opinions of the largest pool of potential investors available' while bank loans represent bilateral relations between the firm and the banks that provide credit (Aglietta and Breton 2001: 438); firms that hesitate to ask a bank for a loan will be even more reluctant to obtain capital through the capital market.

What this suggests is that some firms exercise agency in their choice of capital sources with a view to preserving their autonomy, and refraining from seeking capital from institutionally, geographically and maybe even culturally 'distant' sources such as capital markets or private equity, where the lack of precedent experience between the actors involved increases the

perception of uncertainty. The firms choose to restrain the scope of potential capital sources (effectively reducing their options to grow and to source the capital required to invest and modernise), for reasons due to the organisation of their governance, but maybe also simply in continuation of their previous 'way of operating' without external capital sources. This might potentially be seen as a form of local resistance to 'financialisation', a form of mediation of it through local firms, and a transformation of the process compared to how it unfolds in other regions such as the UK or the US – unless it (potentially more likely) rather reflects an 'insulation' and 'overlooking' of these regions, which might be due to a perceived geographical or cultural 'distance' between these regions and global institutions. The study thus contributes to a critical re-evaluation of literature on geographies of firm finance and on financialisation by evidencing that the latter is far from being a universal, uniform and irresistible phenomenon. One further form of potential resistance to financialisation is the opposition of OEMs against car component manufacturers owned by private equity as observed by Scheuplein (2012), materialising in the OEM's comparatively limited willingness to support these firms in times of crisis. This suggests that resistance originates not only from local actors in the territories where firms operate, but also through global production networks from the OEMs that constitute the lead firms of these networks. Another element relevant to debates on variegated capitalism is what appears to be the different role played by banks, with a seemingly higher importance of banks in Eastern Germany than in Hungary, in accordance with the literature discussing the 'relationship bank' status of banks in Germany (Handke 2011) which seems to be absent in Hungary. Both regions share a state-socialist past and an EU-present but took different paths after the fall of the Iron Curtain when Eastern Germany was absorbed into the pre-existing capitalism of Western Germany while Hungary had to go its own way and develop its own variegated form of capitalism. The different role played by banks in these regions is thus another indicator of differences in variegations of capital within the group of formerly state-socialist regions.

The study thus supports the argument of persistently divergent rather than convergent patterns of financing, thereby challenging arguments of homogenization as a result of processes such as globalization or financialisation, and supporting the view of financialisation as a 'profoundly geographical phenomenon' (Hall and Leyshon 2013). There clearly remains a difference in the way Hungarian firms are financed compared to firms in Eastern Germany,

both are different than what is seen in the US and the UK, and there are even indications for regional differences within Hungary. The study contributes to understanding how and why variegations of capitalism might diverge or converge, or not, over time. Overall, this challenges theoretical accounts of tendencies to homogenization in global capitalism, such as DiMaggio and Powell (1983)'s institutional isomorphism argument according to which institutions start in different places but eventually converge towards norms and common structures, and supports the argument for the persistence or variegations of capitalism across time and space. Clearly a more nuanced and fine-grained analysis is necessary to better understand how variegations of capitalism develop, unfold and persist in different ways in different contexts, both between countries and regionally within countries, and what different implications this has for the firms concerned.

The territorial disembedding effect of ownership in global production networks

While the VoC school focuses on how the embeddedness of firms in their institutional environment determines the organisation and regulation of production in a given context (Hall and Soskice 2001b), this study has highlighted that this territorial embeddedness determines not only the production but also the sourcing of capital by the firms. In addition, and in line with a "relational conception of the firm as a social institution" (Peck and Theodore 2007: 738), it has highlighted that the network embeddedness through ownership in 'discontinuously territorial', (Henderson *et al.* 2002: 446) global production networks has a 'territorially disembedding' effect in that it fundamentally alters the way these firms source their capital. By showing how firms that are owned by foreign GPN firms source their capital compared to those that are not, with the implications this has on the firm's governance and on local and regional development, the study contributes to a critical discussion of the role finance plays in global production networks and how finance should be conceptualized, more solidly and more systematically, as an integral and relevant dimension of these networks. As the empirical analysis has shown, the form of integration of a firm into a global production network has a significant impact on the way it is financed. Firms that are part of global production networks but owned by local individuals (as is the case of a large number of firms in both Hungary and in Eastern Europe where they represent the 'Mittelstand') tend to have very little capital contributed by their owners and therefore rely either on banks as external capital providers or on retained earnings as internally produced capital. By contrast, firms that

are owed by foreign GPN firms tend to have a significant portion of their capital provided by their foreign owner. In other words, the VOC school's assumption that firms behave in accordance with the specific institutional framework of their national economy (Crouch *et al.* 2009) and its "tendency to reify national economic boundaries" (Peck and Theodore 2007: 738) is at least partly contested by the observation of this disembedding effect of ownership integration in global production networks, supporting the call of Peck and Theodore (2007: 758) for the consideration of 'models within models' at the local scale and network-style 'models between models' in trans-local space. Similarly, while Lane (2008) highlights how each political economy's financial system and regulatory context shape firms' access to finance, this study shows that this effect can at least be partly overridden by the firms' GPN integration through ownership which significantly shapes firms' options in terms of access to finance. This can further be seen as one way through which lead firms can influence capitalist variegation in host countries (Lane 2008) by changing the way certain local firms (i.e. those that they own) source their capital differently compared to their locally owned peers.

In conceptual terms, the particular form of network embeddedness of firms owned by other GPN firms overrides their territorial embeddedness, and their behaviour in terms of capital sourcing is different from the firms which otherwise share the same location in a given territory with its particular form of variegated capitalism. The implications thereof are that the firms owned by foreign GPN firms are involved in strong relationships of power with their foreign owner but much less so with local providers of capital, whereas the locally owned firms do not have this strong relationship of power with a foreign owner and instead are in unequal relationships of power with local banks if they use bank loans (or none if they rely exclusively on retained earnings). In other works, this territorial disembedding through network embedding has an impact on the firms' governance. The study thus helps better understand how the firms' governance is constituted, who exercises it (i.e. among others the firm's capital providers), what its implications are (i.e. that certain geographical factors such as the firm's location or the type and location of the firm's owners impact and modify the firm's governance). A large body of literature in business administration is concerned with the way firm governance is organized and drives the operations and strategic development of the firm, but this rarely takes into explicit account the relevance of geographical factors. This study highlights that certain geographical factors, such as the firm's location as well as the type and

location of the firms' owners, play an important role in the way the firm is financed and, as a result, in the way the firms' capital providers form part of the firm's governance and therefore contribute to shaping the governance itself. This might be seen as an illustration of local and regional development as the "dynamic outcome of the complex interaction between territorialised relational networks and global production networks within the context of changing relational governance structures" (Coe *et al.* 2004), further illustrating the space-relevance of capital provision and of the relationships between providers and users of capital (Klagge and Martin 2005).

Retained earnings as a double-edged tool for enhancing firm agency

The third main theoretical contribution of this study derives from the observed strong reliance of many firms on retained earnings as a capital source, which ties in with the discussion of the role firm agency plays in the geographies of firm finance. The utilisation of retained earnings by a firm is both a result of factors which are 'external' to the decision making process regarding the sourcing of capital and hence the firm's agency (the making of profits in previous years which created earnings that could be retained and the absence of losses which would have destroyed the earnings retained in previous years) and factors that are within the scope of the firm's agency (the decision to retain earnings once they are made rather than distributing them as dividends) – unless the contrary is imposed by external shareholders. This is part of the question how power and value are distributed in the relational interaction between local and non-local actors (firms and capital providers) in global production networks (Coe *et al.* 2004). It further highlights that in addition to the corporate, institutional and collective forms of power traditionally considered by GPN research (Henderson *et al.* 2002), the power exercised by the capital providers over the firm needs to be considered as an additional dimension of relevance. Ultimately this plays into the firm's governance as the "authority and power relationships that determine how financial, material, and human resources are allocated and flow" within a network (Gereffi 1994).

When firms decide to finance their operations primarily through retained earnings, as many analysed in this study do, in accordance with expectations of the pecking order theory (Myers 1984), they preserve their autonomy and refrain from entering into unequal relationships of power with third party capital providers which, once they have contributed their capital, form part of the governance of the firm and have their say with regards to the conduct and certain

strategic decisions of the firm. This study suggests a potential spatial dimension to the pecking order theory in that firms in Hungary seem to have a higher propensity to rely on retained earnings than firms in Eastern Germany (also illustrating the relevance of national variegations in access to capital), and firms in the Hungarian periphery more than in the Hungarian centre (illustrating the relevance of regional variegations).

The exact form of power and scope of influence a third party capital provider wields depends, *inter alia*, on the form of capital, the type of capital provider and the stage in which the capital or the firm is (for example a bank's influence will typically increase significantly if a loan is in default, and the direct influence of all third party capital providers will decrease significantly if the firm is insolvent as in that case the governance is taken over by the insolvency administrator) but it in almost all cases corresponds to some form of loss of autonomy by the firm and the entering into an unequal relationship of power with a third party. The strong reliance on retained earnings can therefore be seen as an enhancement of regional value capture (Mackinnon *et al.* 2009). While Coe *et al.* (2004: 473) highlight the "availability of investment and equity funds [as] critical to growth and development" of a region and that the "uneven access to local and non-local forms of financial capital can both enhance the strategic importance of some regional economies to global production networks and diminish others", this study suggests that some firms choose not to have recourse to such capital provided by third parties and rely on retained earnings instead. This is consistent with the argument that external capital (in particular equity, but also debt) involve a loss of autonomy of entrepreneurial management and control and involve a shift of power and control to external stakeholders (Klagge and Martin 2005). Defining governance as the "authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain" (Gereffi 1994: 97), a firm's reliance on retained earnings is a means of preserving this authority and power within the management of the firm.

On the other hand, the reliance on retained earnings as a capital source and the absence of utilisation of third party capital also means that the firm is more limited in its capacity to raise capital and hence in its capacity to grow and acquire. This may well be a choice of some firms, likely illustrated by the fact that most firms particularly in Hungary are small rather than medium sized or large. However, it potentially also limits their capacity to modernise equipment and keep on track with technological evolution, which may be required to remain

competitive or achieve industrial upgrading (despite the recognised limitations of this concept (Bair 2005)) and not gradually weaken their position in global production networks. This is particularly relevant for small and medium-sized firms which traditionally have more difficulties in accessing capital (Pollard 2003; Appleyard 2013) than “multi-institutional, multi-national and multi-local groups whose parent companies are well connected to the financial milieu and who know how to use financial resources to develop their activities and external growth” (Corpataux and Crevoisier 2016: 618).

As a result, this study highlights the double-edged nature of retained earnings as a tool which allows firms to enhance their agency (by preserving their autonomy and reducing their reliance on external capital providers) while also potentially limiting their development and capacity to fund further investments. This ultimately influences the firm’s governance and hence autonomy, resilience and ability to produce, enhance and capture value in the long term. This ultimately relates to questions of local and regional development, as the degree to which firms rely on retained earnings likely corresponds to different forms of development: while a low degree of reliance on retained earnings might correspond to a form of development enabling faster and more radical growth at times when capital is more easily available, a higher degree of reliance on retained earnings might imply a slower and more incremental growth path, with potentially a higher degree of resilience in times of economic crisis.

7.3 Reflections on the Study, Limitations and Avenues for Further Research

The empirical findings and theoretical contributions summarized above illustrate the value of the methodological approach taken in this study, but the conduct of the study has also evidenced its limitations. This section discusses some of these limitations and potential avenues for further research that might be able to address them and further advance the knowledge and understanding of the geographical nature and implications of firm finance.

Access to qualitative firm-level data

The main obstacle encountered during the conduct of the study, and its main limitation, was the access to qualitative firm-level data through interviews with firm representatives. This was part of the initial research design but had to be abandoned for the reasons discussed in Section 3.2.2 when it appeared the conduct of the interviews to discuss the firms’ internal,

non-published financial figures and considerations would not be possible due to the sensitive and proprietary nature of such information. It was the original intention of the author to conduct such interviews with representatives from firms in both Hungary and Eastern Germany, but after a certain number of attempts it quickly appeared that firms were very reluctant to speak about these matters. Difficulties were indeed to be expected based on the previous experience for example by Ram and Holliday (1993) in interviewing small firms or Bečicová and Blažek (2015) in exploring financial topics with firms. As this study aimed to conduct a wider cross-national comparison, achieving only a handful of interviews would have been of limited value. This route was therefore eventually abandoned and the study relied on publicly available secondary qualitative data to provide a qualitative explanation of the quantitative data collected and analysed. The collection of quantitative firm level data from publicly available sources which constituted this study's main data source is a valuable source of data on a topic on which it is otherwise difficult to get concrete information to look inside the 'black box' of firm finance, even though it did not yield conclusive findings in every aspect analysed (cf. Yeung (1998: 23) for a previous attempt to evidence spatial patterns finance that did not yield very satisfactory results for a number of reasons (data quality, uncertainty on data content and imprecisions). In this area which is notoriously difficult and under researched (for good reason), the pulling together of quantitative data on this scale is a contribution showing that it is possible to collect firm-level quantitative data on a relatively large scale and that this does allow the identification of patterns which were not always expected based on the existing literature. However, the insight provided by this quantitative type of data is necessarily shallower than an in depth case study and does not allow an exploration of the underlying reasons and potential implications of the patterns observed.

To understand the motivations of the firms in their choices of capital sourcing and their perception of the implications on governance and local and regional development, it would be necessary to undertake more qualitative work with firms as Bečicová and Blažek (2015) did for example. Interviews with representatives of the firms to discuss how and why they use the capital sources they do would significantly deepen the provision of plausible explanations as to the motivations of the firm's various stakeholders and the advantages and disadvantages of the various forms of available forms of capital. Firm representatives would be able to explain some of the factors that may mean that theoretically available capital sources are not

actually available to the firm for one or the other reason, they would explain some of the reasons taken into account when evaluating the opportunity of using one source of capital rather than another, and they would explain the impact on the firm's governance and operations of the sources of capital chosen, maybe with an evolution over time if the sources of capital have changed over the recent years.

Consideration of tier positioning and trade relationships between GPN firms

While the method chosen to collect quantitative data from a comparatively large number of firms allowed to collect information on the firms' location, size and ownership, it did not permit a systematic collection of information concerning the firms' activity, tier positioning and commercial relationships which are further key forms of GPN integration beyond the ownership dimension that was analysed as part of this study – in other words a broader consideration of the “diverse forms of equity and non-firm equity relationships” (Coe *et al.* 2004: 471) that characterise global production networks.

The activity of a firm could be of relevance for the analysis of the firm's patterns of financing and financial behaviour more generally to the extent it determines the extent and regularity with which the firm will raise capital to invest in new machines or to develop new products. Categories of activity by which firms could be categorised might include interior, exterior, motor, electronics or engineering to reflect which sub-system of car manufacturing the firm is involved in (Scheuplein 2012). This would facilitate the identification of the firms' tier-positioning within the global production networks and the position their products occupy in the process of car manufacturing. Combined with its relationship with other firms in the global production network, the firm's activity determines the firm's positioning as OEM or as tier-1, tier-2 or tier-3 supplier. Depending on how 'value-adding' the activity is, this might determine the firm's profitability and power in its interactions with other firms. A further methodological difficulty encountered here is that there are several, partly overlapping ways of categorizing the activity of firms in the automotive supplier industry, and it is not always straight forward to assign a firm to one or the other of these categories. The collection of standardized and reliable data on this front turned out to be problematic and was therefore not pursued for the purpose of this study. To the extent the firm's activity and tier-positioning could be determined systematically, this could allow the identification of certain buyer-supplier relationships between suppliers (in particular between foreign-owned and domestic owned

firms) and between suppliers and OEMs. Such tier positioning of the firms within the global production networks is likely to have an impact on how the firms' operations are financed.

Another type of information the available data did not allow to systematically identify is the identity of the main commercial partners of the firms. The objective here would be to identify which global production networks these firms are part of and what position they occupy in the respective global production networks. This is unfortunately not a type of information that can be collected systematically in a comparable manner across a panel of firms: by contrast to their ownership (which firms are obliged to disclose by law in both Hungary and Germany), many firms do not disclose the identity of their main commercial partners. When they do, they do not do so systematically and probably insist on the 'big names' (such as VW, GM or Suzuki) rather than on their 'main partners' (in terms of proportion in their own turnover). While some mention their direct partners, others mention the ultimate OEMs they indirectly supply via one or several other steps in the chain. Almost none provide a detailed breakdown of their turnover in terms of allocation to specific clients. Many firms have not one or two main partners but supply a large range of different firms, and the lists of partners are in constant evolution. In conclusion, this was a type of information that could not be collected in any meaningful and systematic way (and then combined with information about ownership and location) for a large panel of firms. This would therefore need to be collected to the extent possible for a smaller number of firms through interviews with firm representatives.

A systematic collection of data concerning the tier-positioning and trade relationships of the firms would enable the analysis of further dimensions of the variegated capital sourcing of these firms and its implications, such as the factors at play for the sourcing of capital in the form of trade liabilities and the implied capitalistic relationship between 'supplying' this form of capital (by being paid late) and the firm 'obtaining' this form of capital (by paying its supplier late). It would facilitate a better understanding of how variegations of capitalism also contain capitalistic relationships between trade partners and what implications this may have, and it would allow for an analysis of how the relative position of firms in global production networks (beyond the question of ownership which has been analysed within the scope of this study) may have an impact on the way the firms source their capital with the resulting implications on their governance and local and regional development. This remains to be explored by future research.

Sampling and Representativeness

It is also necessary to bear in mind the approach retained for the sampling of firms of which the empirical data was used in this thesis, and the implications this has on the representative character (or otherwise) of the empirical findings presented herein. As set out in Chapter 3, the empirical study used the data of members of the official car component manufacturers' associations in Hungary (Majosz) and Eastern Germany (ACOD), two 'self-selecting' groups of firms with respectively 211 and 281 members at the time of analysis. Given time and resource limitations, data was not collected for all of these firms, but only for a randomly selected sample of 160 firms in each group, representing about 80% of the Hungarian firms and about 56% of the Eastern German firms. It is possible that this random selection of firms led to the identification and prevalence of relationship types between the firms, capital sources used by the firms, as well as geographical and network patterns of capital sourcing that are true for the firms analysed, but not necessarily representative for car component manufacturers in Hungary and Eastern Germany as a whole. A different selection of firms (such as, for example, analysis of data of all 492 firms, or a sampling based on equal representation of each type of firms in terms of size, ownership and location) might have led to different results on each of the questions asked. By way of example, a different sampling might have led to a regional capital gap in Hungary being more apparent than it was in this thesis, or on the contrary less apparent or even absent. The empirical findings of this thesis should therefore be taken with some caution and considered as reflecting the patterns found in this particular sample of firms, rather than being necessarily representative of the sector as a whole. The approach was justified as the aim of the study was to examine the causal relations, mechanisms and processes at work rather than to provide a representative sample, i.e. the approach taken was an intensive rather than an extensive research methodology.

The degree to which findings from a different sampling might differ could be tested by future research using a different sampling technique (such as potentially the data of those 20% of Hungarian firms and 44% of Eastern German firms that were not analysed within the scope of this thesis) to determine whether the empirical findings would be in any point materially different to those presented in this thesis.

Broadening of scope – especially over time

Finally, the scope of the analysis could be extended in geographical, sectoral, typological and temporal terms to other regions and countries, to sectors other than the car component manufacturing industry, to other types of financing and to cover a period of time rather than a point in time as was done in this study. One of the challenges inherent in qualitative case studies focusing on micro-scale analysis, i.e. in the analysis of qualitative data collected in company interviews as this is frequently undertaken in GPN research and more generally in relational and practice oriented geography (Jones and Murphy 2011; Jones 2013) is that they do provide deep insight into processes and mechanism at firm level within specific GPNs, but that it might be difficult to generalise these findings because of their limited sample size and the fact that they often implicitly focus only on the largest firms of a particular industry (Pavlínek and Ženka 2011). The approach used by this study to collect data for 160 Hungarian and 160 German firms provides a broader picture, but is still limited in scope (similar to what Pavlínek and Ženka (2011) did on the Czech automotive industry).

Extending the geographical scope of the analysis beyond Hungary and Eastern Germany to other economies of Central and Eastern Europe would allow us to test whether the common differences identified between these two regions on the one side and more financialised economies like the UK and the US on the other side are a common trait of post-socialist economies or whether a more fine-grained and nuanced analysis is (likely) necessary and would provide evidence for further variegations of capitalism within Central and Eastern Europe. Extending the sectoral scope of the analysis to sectors other than car component manufacturing might shed light on whether the mechanisms identified in this study work differently in other types of global production networks (for example in less capital intensive industries such as the garment industry). Extending the scope to other forms of financing (such as supply chain financing, factoring or securitisation) would allow us to explore whether it is possible to evidence evolutions in financing practices (and potentially ‘financialisation’) which it was not possible to evidence based on the types of financing analysed as part of this study. This study focused on a small number of ‘traditional’ capital sources as these constitute the empirically most frequently encountered form of capital: equity provided by individual owners or by other GPN firms, bank debt, retained earnings as well as, to a lower extent, subsidies and supplier credit. Future research could explore whether any alternative forms of finance

exist or are developing within the car component manufacturer industries in Hungary and Eastern Germany, such as alternative financing institutions (Appleyard 2013) or supply chain financing (Baumeister and Zademach 2017) for example, to compensate the increasing difficulty for these firms to access the capital they need to operate and further develop. Further research could also explore whether the lack of engagement between firms analysed in this study and the capital markets might also be due to a difference in legislative arrangements: the question to be explored would be whether the local legislation is less favourable than the one in the UK or the US for the sourcing of capital through the capital markets or for private equity. This has not been tested within the scope of this study and would need to be analysed through future research.

The most important extension in scope, however, would be the analysis of capital sources over a period of time rather than a point in time as was done in this study. The data for this would be available as annual statements are generally available for firms in both Hungary and Germany since at least 2008, allowing analysis of change for about a decade since the global financial crisis. Ideally the temporal scope of the analysis would be extended even further by going further back in history to see how these patterns and practices evolved in the 1990s when state-socialism was still a recent memory in both Hungary and Eastern Germany. The constitution of retained earnings as a predominant or exclusive source of capital requires the accumulation and retention of profits over the years. Similarly, the absence or erosion of retained earnings as a source of capital can probably be explained by the firms making losses or by distributing as dividends the profits they make. The first mechanism leads to the firm's existing retained earnings to be eroded, while the second one prohibits the firm to retain earnings and thereby increase the weight of this capital source relatively to the others. Retained earnings are not contributed by an external party but rather 'produced' by the firm itself through the retention of annual profits. They can therefore not be constituted in one operation (as opposed to the granting of a large bank loan or the raising of a large amount of equity through an IPO on the equity market) but need to be accumulated over the years. This study did not explore, by looking at the timeline of profits made by firms over the last years and the extent to which they were retained or distributed, how retained earnings are constituted over time. Nor did it explore to which extent the high or low importance of the retained earnings as it can be observed today is due to the firms' capacity to generate earnings

(by making a profit) and to retain them (by not distributing it in the form of dividends to shareholders) in the past. This remains to be done by future research and would allow to distinguish different groups among the firms: those that have been able to constitute retained earnings over the years (by making profits and being able to retain them), those that did not retain earnings although they made profits (because these were distributed as dividends) and those that did not retain earnings because they did not make profits. This would, among others, evidence the unequal impact of the last crisis on firms depending on their size, ownership and location and the extent to which extend the past performance depends on the firm's size, ownership or location. This would further allow to compare firms with a similar profile of retained earnings by looking at their genesis to determine how a similar weight of retained earnings in a firm may hide a different story. It would allow to assess the impact of other geographical factors on how the firm's capital sources look like at a given point in time, and to analyse how their policy of retaining rather than distributing these earnings is impacted by their size, ownership, location or activity. This would inter alia help highlight the impact of economic crises such as the financial crisis of 2007 and the following years, to show for example how the firms' financing choices impact their resilience in times of economic crisis.

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