Attitudes to Immigration in Times of Crisis: The Influence of Austerity, Cuts, and Media Attention

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Abstract

This thesis focuses on the role that government policy and media attention play in public perceptions of real or perceived threats from immigration. I present three empirical chapters which provide significant original contributions to the literature on the external influences over individual attitudes to immigration and hostility toward foreigners or minorities. This literature and the contribution of this thesis is explored in chapter two.

Chapter three exploits the controversial 'Hartz IV' unemployment benefit reform in Germany in 2005 as a natural experiment for the impact of personal financial shocks on attitudes to immigration. Difference-in-differences analysis using individual-level panel survey data and fixed effects provides novel causal evidence that personal financial shocks in the form of a cut in benefit payments can lead to short-term increases in individual concerns about immigration. These results provide support for economic self-interest theories of attitudes to immigration, specifically the welfare strain hypothesis, where poorer natives believe immigrants will reduce their access to benefits.

In chapter four, I examine the relationship between the UK austerity programme introduced in 2013 and hate crimes motivated by race or religion. I estimate the causal impact of greater losses from benefit reforms introduced in April 2013 in a local area on the level of racially or religiously motivated (RRM) crimes recorded by the police. Using a difference-in-differences method with continuously varying treatment intensity consisting of the estimated total loss (£) per working age adult from the reforms in each area and including fixed effects I show evidence that austerity had a positive causal influence on rising RRM hate crime. The effects are primarily apparent for 'public fear, alarm or distress' offences, while no such effect is found for non-hate related offences. These findings suggest that financial shocks at the community level can increase hostility toward minority groups and support sociotropic theories of the impact of increased scarcity of resources on intergroup conflict, prejudice, and hate crime.

Chapter five explores how a genuine migration crisis may alter the relationship between media salience and attitudes to immigration. Using individual-level panel survey data and original data on the salience of immigration in the German media on each day of 2015 collected using Python web scraping techniques and Lexis Nexis records, I estimate a respondent's exposure to immigration news using their interview date. Linear Probability

Model estimates show a clear difference in the significance of levels of media attention on immigration concerns before and during the main peak of the migrant crisis. Across the full period of interview dates (March to October) and when focusing on a period before the peak of the crisis (April to May), media salience appears to have a positive effect on higher concerns about immigration in line with the literature. However when considering interviews that took place within the main rise and peak of the migrant crisis (June to September), I find that the largest rises in media salience in 2015 had no significant impact on increases in immigration concerns in the same period. These findings suggest that while the influence of media did increase concerns in 2015, it did not play a causal role in rises in concerns during the peak of the migrant crisis, and may have been crowded out by exposure to the crisis itself, or cumulative exposure to news about the migrant crisis.

This thesis provides novel causal evidence of how reactions to economic and demographic crises affect individual attitudes to immigration. The findings presented in the three empirical chapters extend the literature on the influence of economic and demographic conditions on attitudes to immigration by considering their indirect impact through government policy and media reactions.

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Chapter 1: Introduction

Immigration has become an increasingly salient issue across Europe over the past two decades. Alongside this, European countries have faced crises which have had real impacts on citizens' lives, and subsequently their opinions and attitudes about immigration, immigrants, and minority populations. These crises include the 2008 financial crisis which triggered austere fiscal policies in the UK, and the 2015 migrant crisis which saw the arrival of hundreds of thousands of refugees into Europe due to war in the Middle East. The impact of these crises themselves on attitudes to immigration have been studied in the recent literature (Czymara and Schmidt-Catran, 2017; Kwak and Wallace, 2018; Weber, 2019; Anderson et al., 2020), however reactions and responses to these crises from the government, policy makers and the media may also play a role in the formation of these attitudes but have received less research attention.

This thesis focuses on the impact of responses to these crises in Europe, including government reforms and increased media attention, on intergroup relations and anxieties. Through three original empirical chapters I aim to address how sudden personal or societal shocks affect individual attitudes to immigration. How do widespread benefit cuts affect attitudes towards immigration and hostility to foreigners? What level of influence do the media have over immigration concerns during a genuine migration shock? These research questions are centred around the idea that individuals base their attitudes to immigration on their own personal economic circumstances, becoming more anti-immigrant or anti-immigration when they perceive immigrants to be a threat to their economic opportunities or costs (economic self-interest), or on the circumstances of their culture, nation, community, or other such in-group (sociotropic concerns). There is a wide literature on whether personal economic interests or sociotropic concerns motivate attitudes toward immigration[1] which is explored in more detail in chapter two. The empirical chapters presented in this thesis help explore these two broad theories in the context of exceptional circumstances, where economic and demographic crises elicit responses from policy makers and the media which (intentionally or unintentionally) provoke anxiety and hostility toward immigrants or minorities.

[1] See Hainmueller and Hopkins (2014) for a summary of this literature.

The study of attitudes to immigration has important economic and societal implications. For example, negative attitudes to immigration amongst those most likely to suffer the consequences of higher migration (i.e. low skilled native workers) may influence governments to implement restrictive immigration policy, despite the economic benefits of more liberal policies (Boeri and Brücker, 2005). Furthermore, these sentiments have effects on political choices including the rise of radical right-wing parties such as UKIP in the UK and FDP in Germany (Goodwin and Milazzo, 2015; Clarke et al., 2016; Arzheimer and Berning, 2019), Euroscepticism (Stockemer et al., 2020), and referendums (Couttenier et al., 2019) including the decision to leave the EU by UK voters in 2016 (Hobolt, 2016; Clarke et al., 2017; Goodwin and Milazzo, 2017). Negative attitudes toward immigration may also develop into hatred of minority out-groups and lead to serious acts of violence and hate crime towards minorities, harming citizens and breeding a culture of intergroup competition and threat into communities. In the UK for example, hate crimes motivated by race or religion more than doubled between 2011/12 and 2018/19 (Home Office, 2019), a time period where the conversation around immigration focused greatly on the strain that immigrants were placing on public services and the welfare state, and the immigration-centric Brexit debate and vote (Gietel-Basten, 2016).

To remedy the conflict of interest between public attitudes and optimal economic outcomes and to reduce inter-group conflict in society, governments and policy makers may wish to understand the reasons why anti-immigrant sentiments have become more prevalent, and how times of crisis can indirectly influence negative attitudes to immigration. Boeri and Brücker's (2005) recommendation for improving attitudes to immigration is to 'compensate the losers' of higher immigration inflows, however in recent years these natives have instead suffered losses through austerity policy and public spending cuts while being targeted by right-wing media and politicians to further anti-immigration agendas. The research presented in this thesis holds significant importance for understanding the influence of institutional decisions and rhetoric in times of crisis on attitudes to immigration. The research questions are explored in two main ways in the empirical chapters. Firstly, in chapters three and four I focus on whether immigration can become a scapegoat for unrelated economic circumstances, using instances of cuts and reforms to the welfare system in Germany and the UK as natural experiments. Secondly, chapter five focuses on the impact of the media during a genuine migration crisis, the 2015 migrant crisis in Germany, where I estimate the relationship between media salience of immigration and levels of concern about immigration throughout 2015.

Chapter three explores a reform to the unemployment benefit system in Germany as a controversial government response to rising unemployment, and how the fall in benefit payments for German jobseekers from 1st January 2005 influenced concerns about immigration to Germany. The sudden changes in unemployment benefit eligibility and payments at the start of 2005 provides a natural experiment for the impact of a personal financial shock on attitudes to immigration for those affected (i.e. households experiencing long-term unemployment). Using individual-level panel survey data (GSOEP) I employ a differences-in-differences method including both individual and year fixed effects to provide causal evidence that cuts to benefits can increase concerns about immigration, which supports descriptive findings that personal financial shocks in the form of job loss and income loss are related to more negative attitudes to immigration (Braakmann et al., 2017).

These results provide support for economic self-interest theories of attitudes to immigration and show for the first time that a personal financial shock in the form of a cut to benefits can cause increases in concern about immigration. It is possible that this impact is due to a perception of increased strain on the welfare system amongst those reliant on it (Dustmann and Preston, 2007; Facchini and Mayda, 2009; Hainmueller and Hiscox, 2010), which is either partly blamed on immigration, or increases worries about immigration increasing existing strain on the benefit system. The findings also show that government reforms which are seemingly unrelated to immigration can have indirect impacts on attitudes toward immigration if they worsen personal economic circumstances.

Chapter four investigates the austerity policies implemented in the UK in 2013 as part of the government response to the large budget deficit following the 2008 financial crisis. One challenge of investigating attitudes to immigration in this context is the lack of individual panel survey data to measure these attitudes in the UK during this period. To address this issue I use Home Office data on the number of racially or religiously motivated (RRM) hate crimes recorded by the police in each area of England and Wales as a proxy for hostility toward immigrants, foreigners and minorities. I combine this data with estimates of the financial losses a local authority area suffered due to austerity (Beatty and Fothergill, 2013) and create a panel of 314 Community Safety Partnership areas in England and Wales over 9 years from April 2007 to March 2015. Using a difference-in-differences approach with a continuously varying treatment intensity

measuring the total loss (£) per working age adult each area experienced based on four reforms implemented in April 2013, I show causal evidence that austerity led to increases in RRM crimes in England and Wales. These results provide new evidence about the wider implications of austerity on communities in England and Wales and suggest that restrictive fiscal policies which create scarcity can increase tensions and hostility between majority and minority groups. In contrast to chapter three, where economic self-interest is found to influence attitudes to immigration, this chapter provides support for sociotropic explanations, where scarcity and strain at a group-level creates anxiety and hostility toward minority groups.

The second strand of research in this thesis focuses on whether the media can drum up anxieties about immigration during a genuine migration crisis. There exists an abundant body of evidence suggesting that increased media salience influences attitudes to immigration[2], however, to my knowledge there has been no focused research on the impact of media salience during the 2015 migrant crisis. While previous research has shown that media salience increased concerns about immigration to Germany over a 15-year period from 2001 to 2015 (Czymara and Dochow, 2018), this chapter contributes to the literature by focusing specifically on 2015, when the European migrant crisis brought hundreds of thousands of migrants and refugees into Germany. The aim of this chapter is to understand if media salience had the same impact during this sudden influx of foreigners, or if the effects were amplified or crowded out.

Original data created using the Lexis Nexis database and online newspaper archives, alongside Python code provide more detailed measures of media salience to help analyse the relatively short time period considered in this chapter. The data provide measures for both the number of articles containing any one of a set of immigration keywords in a search string - as in Czymara and Dochow (2018) - and the number of times these keywords were mentioned on any given day during the migrant crisis. I also used a second more general search string to identify articles which mention immigration and Germany, but do not necessarily mention any immigration-related issue due to the salience of immigration as a single issue during this period. Combining this media data with individual-level panel data (GSOEP), the results of this chapter show that when considering GSOEP interviews from March to October 2015 greater media salience has a

[2] See for example: Boomgaarden and Vliegenthart, (2007); van Klingeren et al. (2015); Czymara and Dochow (2018); Thesen (2018); Couttenier et al. (2019)

significant positive relationship with higher concerns about immigration, however when restricting analysis to interviews within the main peak of the migrant crisis (June to September 2015), media salience does not have a causal effect on immigration concerns. These results have implications for the influence of the media over public opinion in times of crisis, and suggest that media salience may not have played a significant role in the increase in concerns about immigration associated with the peak of the migrant crisis, and the subsequent rise of radical right-wing party AfD (Alternative for Germany).

Overall, this thesis provides a contribution to the wider literature through its focus on causal relationships within the study of attitudes to immigration. One challenge for research on attitudes to immigration is availability of detailed survey data which follows individuals across multiple years. Much of the literature surrounding attitudes to immigration either: focuses on comprehensive or experimental survey data which is only available for individual years[3]; focuses on an aggregate cross-country or state approach[4]; or does not follow the same individuals to create a true panel[5]. Some recent studies have leveraged panel data, but focus on slightly different outcomes (for example, right-wing domestic terrorism or the Brexit vote) (Piazza, 2017; Fetzer, 2019), and descriptive evidence has shown that personal financial shocks such as loss of resources or economic opportunities are related to more negative immigration attitudes (Braakmann et al., 2017).

In this thesis I use panel data and fixed effects to focus on the impacts of specific circumstances as natural experiments and provide causal evidence on the impact of economic circumstances on attitudes to immigration. This is particularly true of chapters three and four on the impacts of welfare reforms and austerity on attitudes to immigration, but causal analysis is also employed in chapter five as a robustness check. Using panel data allows me to control for pre-existing differences between individuals (or local areas in the case of chapter four) as well as controlling for unobserved time trends or shocks which may affect the outcome.

[3] (Citrin et al., 1997; Chandler and Tsai, 2001; Scheve and Slaughter, 2001; Campbell et al., 2006; Hainmueller and Hiscox, 2010; Facchini et al., 2013; Malhotra et al., 2013; Helbling and Kriesi, 2014; Hainmueller et al., 2015; Mocan and Raschke, 2016; Braakmann et al., 2017; Hellwig and Sinno, 2017; Hyll and Schneider, 2018; Kwak and Wallace, 2018).
[4] (Mayda, 2006; O'Rourke and Sinnott, 2006; Hanson et al., 2007; Facchini and Mayda, 2009, 2012; Malchow-Møller et al., 2009; Ortega and Polavieja, 2012; Huber and Oberdabernig, 2016; Naumann et al., 2018; Anderson et al., 2020).
[5] (Dustmann and Preston, 2007; Falk et al., 2011; Dancygier and Donnelly, 2013; Gang et al., 2013; Bridges and Mateut, 2014; Weber, 2019).

Many studies have focused on the impacts of recessions or economic downturns on attitudes to immigration (Krueger and Pischke, 1997; Green et al., 1998; Falk et al., 2011; Gang et al., 2013; Kwak and Wallace, 2018; Anderson et al., 2020), but there has been little attention on the impact of the *reactions* to recessions, economic crises, or migration crises on public attitudes to immigration to date. These reactions may be regarded as necessary or appropriate as a solution to a problem (e.g. rising unemployment in Germany, or the national debt crisis in the UK) or to highlight a current issue (e.g. the escalating migrant crisis), but can have consequences on public concerns about immigration, hostility toward foreigners and voting outcomes that have genuine impacts on economic and social outcomes.

The results presented in this thesis show that economic crises which on the surface are unrelated to immigration can indirectly increase immigration concerns through the welfare policies used to tackle them and the effect these reforms have on individuals and communities. The findings also suggest that crises directly involving migration may reduce the effectiveness of external influences such as media attention on attitudes to immigration. This original research extends the existing body of evidence on the determinants of attitudes to immigration, providing novel insight into attitude formation in times of crisis.

Chapter 2: Attitudes to Immigration - A Review of the Literature

2.1. Introduction

This thesis is situated in a broad field of research into how attitudes to immigration are formed and influenced. The purpose of this chapter is to explore the existing literature on this topic and identify the key theories and findings on influences of attitudes toward immigration. I aim to identify the gaps in this literature and explain how my thesis fills these gaps and provide an original contribution to the field of knowledge. Given that the focus of this thesis is the impact of government and media responses to economic and demographic crises on attitudes and concerns about immigration, this review mainly covers the influence of economic, political, and societal factors on individual attitudes to immigration. I do not go into detail on the psychology of prejudice or xenophobia and instead focus on how attitudes are influenced by external factors and events.

Descriptive analysis of European Social Survey data shows that European natives do not base their attitudes on an immigrant's religion or race, but prefer immigrants from similar ethnic backgrounds, wealthier countries, with higher education and skill levels and better linguistic ability. These results indicate that opposition to immigrants is not driven by prejudice alone, and is also based on economic and cultural issues that are perceived to be linked to immigration (Card et al., 2005). This review of the literature explores the theories and evidence of these economic and cultural explanations for attitudes toward immigration that will be explored further in this thesis.

This thesis provides a significant contribution to the literature surrounding the impact of economic and demographic conditions on attitudes to immigration. Through this thesis, I show that economic downturns and unemployment can act as a catalyst for restrictive welfare policy, worsening concerns about immigration and inter-group hostilities, and also that demographic conditions can influence the effectiveness of media salience on immigration concerns. There has thus far been little attention to the reactions of policy makers and the media to crises, however it is important for political and media institutions to understand the indirect impacts of their decisions and rhetoric on increasingly divided societies in the Western world.

This review is split into three sub-sections. First, I consider the literature of economic self-interest explanations of negative attitudes toward immigration, where immigrants are perceived to be an economic threat to individual natives in terms of labour market outcomes, or changes to taxes and public spending. Secondly, I consider alternative sociotropic explanations for negative attitudes toward immigration, where individuals based their attitudes on more cultural or ideological considerations, and oppose immigration if it threatens their in-group, community, or country. Finally, I consider how the discourse and salience of immigration provided by politicians and the media can impact individual attitudes.

2.2. Economic self-interest

A large part of the literature has focused on whether economic self-interest motivates attitudes toward immigration and hypothesises that anti-immigrant attitudes are based on perceptions of the threats that immigrants pose to an individual's economic opportunities and resources. Economic self-interest theories can be split into two main categories: Labour market competition hypotheses, where natives fear that their labour market outcomes (e.g. employment or wages) will be negatively affected by similarly skilled incoming immigrants; and fiscal burden or welfare strain hypotheses, where natives fear that arriving immigrants will cause an increase in taxes, or strain on public finances which reduces or restricts access to benefits and other public spending.

2.2.1. Labour market competition

Labour market competition theories derive from factor-proportions analysis, and rely on the idea that incoming immigrants increase the supply of labour within their skill or occupational group relative to other factors (e.g. supply of labour of different skill groups) and therefore reduce the wages for all workers (native or immigrant) of a given skill level while increasing the wages and labour opportunities for workers of different skill levels who act as complements (Hainmueller and Hiscox, 2010). The labour market hypothesis predicts that low-skilled native workers will oppose low-skilled immigrants more than high-skilled native workers do, and vice versa.

Estimating the impact of labour market competition empirically has presented some research challenges. Early studies into labour market competition assumed that natives perceived immigration as generally referring to low-skilled immigration. These studies inferred that results showing that low-skilled natives, or those in more manual occupations, were more anti-immigrant than their high-skilled counterparts was

evidence in favour of the labour market competition hypothesis (Scheve and Slaughter, 2001; Mayda, 2006; O'Rourke and Sinnott, 2006; Ortega and Polavieja, 2012). However, this assumption may not hold in reality, and these results could simply show a general aversion to immigration by natives with low levels of education or lower economic status, rather than providing evidence to support labour market competition.

One solution to this problem has been through cross-country approaches which provide further support for labour market competition by showing that high-skilled natives present more pro-immigration attitudes in countries where there is a lower likelihood of high-skilled immigrant workers arriving (i.e. higher GDP, less inequality etc.) (Mayda, 2006; O'Rourke and Sinnott, 2006). O'Rourke and Sinnott (2006) find no evidence that native skill level predicts attitudes toward immigration for individuals outside of the labour force, indicating that these results are not a simple reflection of the impact of higher education on attitudes, and are related to labour market outcomes.

This area of the research has also more recently moved away from measuring labour market competition using education or skill level alone. Malhotra, Margalit and Mo (2013) use a sector specific approach to estimate the impact of labour market concerns. They present evidence using survey responses from technology workers in high technology areas in the U.S. and find that labour market competition concerns may influence attitudes to immigration in certain sectors where immigrants pose more of a threat. Kaihovaara and Im (2020) use 'occupational task routineness' to show that anti-immigration attitudes increase when an individual's occupation is more routine, and the risk of becoming unemployed due to technological change is greater. Similarly, Gamez-Djokic and Waytz (2020) provide evidence of a relationship between individual concerns about automation and anti-immigration attitudes, and show experimentally that increased awareness of automation may lead to anti-immigrant attitudes, partly due to an increased sense of job scarcity. These studies extend the body of research on labour market competition by more clearly defining which occupations or sectors would be most affected by migrant inflows and providing evidence in current contexts.

2.2.2. Welfare concerns

There is also a body of evidence showing that welfare concerns help shape attitudes to immigration through two main channels: fears that immigration will cause tax increases (fiscal burden); and fears that immigrants will increase strain on the welfare system and reduce access to benefits for natives (welfare strain) (Facchini and Mayda, 2009, 2012;

Hainmueller and Hiscox, 2010; Huber and Oberdabernig, 2016). If fiscal burden is driving attitudes to immigration, we would expect higher income natives to have greater distastes for low income immigrants, while under welfare strain we expect low income natives to hold more negative immigration attitudes. Facchini and Mayda (2009) provide evidence that both of these welfare channels play a role in determining attitudes to immigration depending on the fiscal response to immigration inflows.

Some studies provide evidence that welfare concerns play a greater role than labour market concerns in determining attitudes to immigration (Dustmann and Preston, 2007; Helbling and Kriesi, 2014; Naumann et al., 2018). While natives are more likely to associate labour market threats with immigrants who are more ethnically homogenous with the native population, welfare concerns are more likely to occur when considering immigrants of a different race (Bridges and Mateut, 2014; Hellwig and Sinno, 2017). These stereotypes and perceptions may mean that the type of economic self-interest concerns depend on the groups of immigrants perceived to be most prevalent in each area.

While many studies find evidence to support the fiscal burden hypothesis (Hanson et al., 2007; Facchini and Mayda, 2009, 2012; Helbling and Kriesi, 2014; Naumann et al., 2018), Hainmueller and Hiscox (2010) find evidence contradicting the fiscal burden hypothesis, finding that *both* rich and poor natives are more opposed to low-skilled immigrants. Furthermore, Hainmueller and Hiscox show that in US states with higher taxes and public spending, rich natives are even *less* opposed to low-skilled immigration than in states with lower fiscal involvement. Tingley (2013) provides support for these results using data with greater sample sizes, noting that welfare considerations have become less salient in immigration debates since the 1990s and the connection between immigration and the welfare state may have diminished over time.

However, Jaime-Castillo et al. (2016) use European data to show that while countries with higher social expenditures tend to have more positive attitudes to immigration, an increase in social expenditure within a given country is associated with an increase in anti-immigration attitudes. They show that as social expenditure increases, the differences in immigration attitudes between natives with low and high socio-economic status widens. These results support the welfare strain hypothesis, and the authors theorise that this relationship is due to perceptions of natives competing for benefits with immigrants, and a fear of losing benefits. This research on welfare concerns highlights

the role of perceptions of the impact of immigration in determining attitudes, and that attitudes can be sensitive to economic changes within a country or community.

2.2.3. Perceived threat and scapegoats

Perceptions that immigration will negatively impact an individual's economic circumstances has been shown to increase hostility toward immigrants (Malchow-Møller et al., 2008, 2009), and these perceptions may be dependent on messages from politicians and the media. An average citizen is unlikely to have perfect information about what causes increases in taxes, restrictive welfare policies, unemployment or industry decline, and it may be that these welfare concerns come into play when immigrants are used as a scapegoat for the negative impacts of globalisation and economic downturns. For example, much of the research into fiscal burden and welfare strain simply compares attitudes to immigration between high-income and low-income natives in different regions where fiscal involvement is higher or lower. It is possible that even when immigration is not a burden or strain on the welfare state, or taking jobs away from native workers, politicians and the media will use immigration as a scapegoat for unpopular economic policy.

The research presented in this thesis helps extend the literature on the relevance of economic self-interest in determining attitudes to immigration, primarily through the welfare strain channel[6], as I examine the impact of widespread benefit cuts. The benefit cuts explored in this thesis are not directly related to increases in immigration and are rather the result of an unemployment crisis and a national debt crisis. Therefore, the findings presented in this thesis have important implications for the role of perceived threats from immigration and the scapegoating of immigrants. These cuts to benefits may be interpreted as personal financial shocks to the individual, and while there is descriptive evidence that personal financial shocks (such as a job loss or drop in income) are related to more negative immigration attitudes (Braakmann et al., 2017), through this thesis I aim to provide causal evidence that sudden changes to an individual's economic circumstances can increase anti-immigration attitudes.

2.3. Sociotropic explanations

In a comprehensive review of the literature into attitudes to immigration in the U.S. and Western Europe, Hainmueller and Hopkins (2014) conclude the body of evidence on

[6] Although labour market concerns may be triggered by cuts in unemployment benefits as the 'cost' of losing one's job increases

attitudes to immigration generally does not support economic self-interest theories, and that attitudes are more likely shaped by sociotropic factors, namely wider economic or cultural threats. Similarly, Mayda (2006) shows that while economic self-interest may partly explain negative attitudes toward immigration, alternative sociotropic explanations such as personal tastes, views and prejudice have also been found to explain attitudes to immigration. The term 'sociotropy' is usually used in a psychological context as the opposite of 'autonomy' and generally describes high levels of concern over interpersonal relationships (Sato et al., 2004). In the context of attitudes to immigration, sociotropic concerns describe concerns which are based on cultural or ideological considerations, such as ethnocentrism, racism or nationalism (Hainmueller and Hiscox, 2010), and may signify concerns about one's nation, community or other such in-group, rather than concerns over one's personal economic circumstances. Recent evidence has shown that sociotropic concerns, including native judgements on an immigrant's occupation, prospects and knowledge of native culture have a strong influence over attitudes to immigration (Solodoch, 2020).

2.3.1. Alternative to economic self-interest theories

Sociotropic concerns are commonly used as an alternative to economic self-interest theories in the literature. A common theme in the labour market competition literature is that the hypothesis holds mostly for low-skilled natives and not highly skilled natives. Hainmueller and Hiscox (2010) distinguish between low-skilled and highly skilled immigrants (rather than assuming that natives always perceive immigrants to be low-skilled), and provide evidence contradicting economic self-interest theories, which has also been supported more recently (Hainmueller et al., 2015). Furthermore, Facchini, Mayda and Mendola (2013) show that higher education levels predict more pro-immigration attitudes even in a context where incoming immigrants are more likely to be higher skilled than natives (South Africa). These results contradict previous evidence on labour market competition, and suggest that evidence of high-skilled natives being less opposed to immigration than their low-skilled counterparts is not indicative of lower levels of labour market threat to the highly skilled, but suggests a link between education (or skill level) and lower opposition to immigration.

Education level is a common sociotropic explanation for individual differences in attitudes toward immigration, alongside income and economic status, where higher levels are found to predict more positive attitudes toward immigration (Hainmueller and

Hiscox, 2007, 2010; Hainmueller et al., 2015; Cavaille and Marshall, 2019). Previous research suggests that these characteristics likely work together through underlying social factors which are harder to measure (Ceobanu and Escandell, 2010). It may be argued that the link between higher economic status and more positive immigration attitudes is due to lower labour market threats from immigrants (Card et al., 2005; Ceobanu and Escandell, 2010), however the strong link between higher levels of education (particularly degree level, see Chandler and Tsai (2001)) and attitudes to immigration may be explained by sociotropic factors. Highly educated individuals tend to be more liberal, more knowledgeable, be critical thinkers, have more stable home lives, have improved tastes for diversity and multiculturalism, live in cosmopolitan urban areas, and believe that immigration is beneficial for the economy (Chandler and Tsai, 2001; Hainmueller and Hiscox, 2007; Ceobanu and Escandell, 2010). There is also evidence that self-selection into education drives the relationship, and differences in the immigration attitudes between educational groups may be due to more deep seated cultural divides (Lancee and Sarrasin, 2015).

Sociotropic explanations also provide an alternative to fiscal burden and welfare strain theories of attitudes to immigration. Evidence that rich natives are opposed to low-skilled or low-income immigrants may provide support for fiscal burden theories, but may also be linked to rich natives' attitudes on the deservingness of immigrants, who believe that they are responsible for their own success in life (Helbling and Kriesi, 2014). Many studies come to the conclusion that natives prefer high-skilled immigrants over their low-skilled counterparts regardless of their own skill level (Hainmueller and Hiscox, 2007, 2010; Hainmueller et al., 2015), and native perceptions of different groups of immigrants may play a role in attitude formation. For example, while the migrant crisis was associated with a fall in public acceptance for immigrants in general, refugees who were 'fleeing prosecution' were viewed more favourably than economic migrants (Czymara and Schmidt-Catran, 2017).

2.3.2. Group level threats

While the role of economic self-interest may be limited in explaining negative attitudes toward immigration, another common avenue for exploring attitudes to immigration is the idea of group threat. Group threat can induce prejudice through perceived threats from minority groups (e.g. immigrants) to the dominant majority group (e.g. natives) (Blumer, 1958; Quillian, 1995). Esses et al. (2001) consider how perceived competition

for resources, group identity and belief in a zero-sum game between the in-group and out-group contributes towards anti-immigration attitudes. They find that all three of these factors play a role in determining attitudes, and particularly highlight the importance of the perception of one's 'in-group' by showing that framing immigrants as being within a native's 'in-group' led to improvements in attitudes.

Perceived threats to one's in-group can be based on a variety of cultural and economic issues, and one commonly researched perceived threat which is particularly relevant to this thesis is competition for economic resources (Esses et al., 2001). Realistic group conflict theory predicts that scarcity of resources will create a perceived sense of competition between groups, which increases prejudice and hostility towards minority groups from majority groups (Craig, 2002). The relative size of immigrant populations alongside economic conditions in a country or region have been found to affect the impact of perceived threats and increase anti-immigration sentiments (Quillian, 1995; Markaki and Longhi, 2013). Quillian (1995) suggests that differences in prejudice at the national level cannot simply be explained by greater tastes for prejudice among individuals, but depend on the demographic and economic conditions present in a country.

Economic threats

Economic threats can lead individuals to hold more negative attitudes towards immigration when felt at a sectoral or national level as well as at an individual level. Dancygier and Donnelly (2013) find that regardless of their own skill level, native workers were more likely to support immigration if they were working in a growing sector as opposed to one in decline. In addition, they find that immigrant inflows into a sector only reduced support for immigration amongst workers during economic downturns, but not when the economy was growing. These results suggest that individual concerns about direct competition with immigrants for work may not fuel anti-immigrant attitudes, but general concerns about the security of one's sector may be fuelled by economic and demographic conditions at the sectoral or national level.

Economic strain and downturns, which create unemployment, welfare cuts and lower public spending are a common source of perceived scarcity of resources. Some studies on the impact of economic strain and downturns find no evidence that strain increases hostility or violence towards immigrants or foreigners (Krueger and Pischke, 1997; Green et al., 1998), while others show that higher unemployment rates or economic downturns lead to greater hostility toward immigrants and foreigners (Medoff, 1999; Falk et al.,

2011; Gang et al., 2013; Finseraas et al., 2016; Anderson et al., 2020). Economic concerns have also been found to play a role through general economic pessimism and beliefs about the negative impacts of immigration (Citrin et al., 1997). Case studies of three young males who became involved with the English Defence League (EDL) provide anecdotal evidence that deprivation can cause feelings of resentment towards minority groups (e.g Muslim populations in England) who some natives feel have been "unfairly prioritised in the allocation of scarce (local authority) resources", leading to the use of violence as a resource against perceived victimisation (Treadwell and Garland, 2011).

In a recent context, studies have shown that the Great Recession of 2008 caused increases in perceived threats from immigration (Kwak and Wallace, 2018), and increases in the use of racial slurs in online chatrooms (Anderson et al., 2020). The after-effects of the Great Recession have also been found to have affected anti-immigrant attitudes. Fetzer (2019) provides causal evidence that the austerity programme in Great Britain, designed to reduce the national debt after the financial crisis, led to increased support for right-wing populist party UKIP (the UK Independence Party) and contributed to the decision to leave the European Union (Fetzer, 2019).

Comparative economic status and outcomes can also contribute to negative attitudes toward immigration at the group level. Hostility toward foreigners may be linked to native fears of a fall in the relative economic standing of their in-group compared to immigrant out-groups (Hyll and Schneider, 2018). Gale, Heath and Ressler (2002) provide a model which shows hate crime as a function of 'envy', where the envier's utility increases as the well-being of those they envy falls relative to themselves. At the group-level, this may apply to dominant majority groups who instead of committing individual hate crimes, create an environment of hostility for minorities, and exercise their prejudice in voting behaviour or hate speech for example.

The welfare reforms studied in chapters three and four represent indicators of economic strain; the after-effects of an unemployment crisis (Hartz IV in Germany), and a national debt crisis (austerity programme in the UK). This research aims to extend the existing body of evidence on the impact of economic strain and reduced resources on intergroup tensions which may be reflected through milder channels such as reporting higher concerns about immigration, or the extreme channel of higher instances of hate crimes or terrorism.

Cultural threats

Threats around the social and cultural identity of the dominant or majority group have also been found to play a large role in forming prejudice and negative attitudes toward immigration alongside economic threats (Esses et al., 2001; Sides and Citrin, 2007). For example, concerns about crime are found to better predict concerns about immigration than economic concerns (Fitzgerald et al., 2012). A recent study found that ethnocentrism, defined as having the tendency to perceive in-group/out-group conflicts and the disposition to use one's own culture as a benchmark to judge others against, was the greatest predictor for anti-immigration attitudes, surpassing economic anxiety (Miller, 2020). In addition, age is commonly found to affect attitudes to immigration, with older natives being more resistant to immigration, which may be due to cultural factors such as beliefs in traditional social norms and resistance to changing to the status quo which may be threatened by increasing globalisation and multiculturalism (O'Rourke and Sinnott, 2006; Calahorrano, 2013).

Using covert interviews in white supremacist online chatrooms, Glaser, Dixit and Green (2002) find that perceived threats about interracial marriage caused the greatest responses from users, greater than the threat of actual migration inflows and labour market competition. Despite the small sample size, this study highlights the group dynamics involved in attitude formation and suggests that while economic circumstances and shocks may affect attitudes to immigration and prejudice in general, a large part of attitude formation depends on intergroup social tensions. Supporting this finding, Piazza (2017) finds that using US cross-sectional panel time series data from 1970-2011, right-wing terrorist crimes are not predicted by economic factors, but are predicted by social factors such as improving women's rights and participation in the labour force, and the power of the Democratic party (left of centre in the US) in government. These studies show that there is a large social element of attitudes to immigration that has little to do with the genuine economic impacts of immigration inflows, and more to do with cultural or social threats to majority groups.

2.4. Discourse and salience of immigration

Politicians and political institutions may also influence prejudice and hostility toward immigrants. Glaeser (2005) argues that politicians may even be incentivised to spread public hatred against minority groups to help justify and popularise their policies if they are detrimental to minorities while their opponent's policies are beneficial to them. In the case of hatred against immigrants, this model may apply to right-wing politicians who aim to vilify immigrants to make their restrictive immigration policies more favourable (for example, the Leave campaign in the UK's EU referendum). Furthermore, policies themselves may influence attitudes to immigrants. Crepaz and Dameron (2009) find that more generous welfare states are associated with greater toleration of immigrants, and suggest that higher public spending provides an implied rhetoric of equal treatment and deservingness for both natives and immigrants, while the opposite is true for more restrictive welfare states.

Public figures may also be able to influence public opinion with their language and rhetoric. Hate speech has been argued to influence hate crime, where the level of hate speech against any group acts as an indicator to individuals of the acceptance of their prejudiced views within society, and emboldens people to act on these views (Dharmapala and McAdams, 2005). This may also apply to the general rhetoric and debate around immigration if it is particularly hostile. Burnett (2013) argues that political institutions and the media showing a general acceptance of immigration and multiculturalism as a problem, combined with denial that racism and racially motivated crime is an issue has legitimised prejudice, creating a "common sense" form of racism which has become more socially acceptable and widespread in the UK. Burnett contends that migration was used as a scapegoat for the negative impacts of globalism and the financial crisis, "giving a face to the pain working class communities were under". It may be, then, that increasing the salience of immigration is in the interests of certain politicians and political parties, and media institutions who share their interests.

The media can have an agenda-setting effect on the general public, by indicating to individuals how salient issues (such as immigration) currently are (McCombs and Shaw, 1972), and thereby increasing concern or negativity towards immigration and immigrants. Both the tone and frequency of news about immigration has been found to increase anti-immigrant attitudes and voting intentions (Boomgaarden and Vliegenthart, 2007; van Klingeren et al., 2015; Czymara and Dochow, 2018) including support for

populist radical right parties and referendums (Thesen, 2018; Couttenier et al., 2019). These effects are found to be particularly strong in areas with lower proportions of ethnic minorities, and for individuals with lower education levels or conservative ideology (Czymara and Dochow, 2018). The salience of immigration in the public consciousness can influence how natives respond to greater numbers of immigrants arriving to their country. Hopkins (2010) finds evidence to support the politicised places hypothesis, where demographic changes within communities (i.e. increases in immigrant inflows) coincide with a salient national rhetoric about immigration, creating a hostile environment for immigrants.

Media attention can also help create or reinforce associations between immigration and other salient issues. Fitzgerald et al. (2012) find evidence that media priming can lead individuals to create a negative association between crime and immigration, meaning that greater concerns about crime encourage more opposition to immigration. In addition, high-impact news stories following a terrorist attack can also increase ideas of immigrant threats associated with it such as cultural and security threats and anti-immigrant attitudes, but these effects do reduce over time as long-term media exposure mellows out and becomes less reactionary (Boomgaarden and de Vreese, 2007).

A common thread in this literature is the power that media salience has over individuals with little real-life experience or information about immigration and immigrants. Heinrich (2020) argues that immigrants are perceived to be 'the foreigner' rather than 'the enemy' or 'the friend' to native majority groups, and uncertainty around the idea of a foreigner out-group leads to perceived threats. While greater numbers of immigrants within a neighbourhood has been shown to increase negative attitudes to immigration, personal contact with immigrants has been found to have a positive impact on attitudes (Weber, 2019). In addition, Sides and Citrin (2007) show that misperceptions about immigrant numbers (rather than actual demographic changes) fuel anti-immigrant attitudes. These studies suggest that a lack of experience or misinformation about immigrants and immigration can make the influence of government or media rhetoric over attitudes even stronger. Negative depictions of immigrants in the media have been found to have a dehumanising effect, which in the face of this uncertainty can lead to the justification of hostility towards these groups, particularly for natives with little personal experience of immigration issues for whom the uncertainty is greatest (Esses et al., 2013; McLaren et al., 2018).

Chapter five in this thesis focuses on the influence of media institutions during a genuine migration shock (the 2015 migrant crisis in Germany), and while there is a vast literature on the impact of media salience on public opinion on immigration, I contribute to this literature by specifically examining how much control the media has over attitudes when genuine demographic changes may already be altering attitudes during a migration crisis where immigration is already a highly salient topic, and when natives may have greater personal experience of migration. This research has important implications for the impact of genuine experience of immigration and exposure to migrants on the effectiveness of the media in influencing attitudes toward immigration.

Chapter 3: Welfare Cuts and Attitudes to Immigration: The Impact of Hartz IV in Germany

3.1. Introduction

This chapter explores the 2005 reform of the unemployment benefit system in Germany, and the impact that the loss in benefit payments had on individual attitudes to immigration for long-term unemployed natives, compared to natives who were not directly affected by the reform. Between 2003 and 2005, the German government implemented a series of reforms to the labour market, known as the Hartz reforms. The first three Hartz reforms focused on increasing labour market flexibility (Hartz I & II) and reorganising the German Federal Employment Agency (Hartz III) (Arent and Nagl, 2013). The final reform, Hartz IV, was implemented on 1st January 2005, and consisted of a drastic reform of the unemployment benefits system in Germany, aimed at increasing incentives to find work and thereby reducing unemployment (Riphahn and Wunder, 2013). Mainly, this reform consisted of a movement from 'unemployment assistance' (UA), which had been proportionate to the previous income of a jobseeker, to 'unemployment benefit II' (UB II), a means-tested benefit covering the legal minimum income (Riphahn and Wunder, 2013). For a large proportion of unemployed Germans (particularly long-term unemployed) the Hartz IV reform led to a direct loss in income as well as indirect losses through lower wages as jobseekers had less bargaining power and greater urgency to find work more quickly due to new penalties for refusing a job offer (Bauer and King, 2018).

This immediate reduction of benefits for many jobseekers provides an interesting natural experiment to test whether a cut in benefits causes recipients to hold higher concerns about immigration into their country. Previous research has shown that economic strain and personal financial shocks (such as losing your job or a fall in income) for individuals can lead to more negative attitudes towards immigration (Gang et al., 2013; Lancee and Pardos-Prado, 2013; Braakmann et al., 2017), however there has been no research to my knowledge on the impact of a welfare cut on attitudes to immigration. In the case of Hartz IV, the immediate impact of long-term unemployed benefits recipients losing some of their income may have intensified concerns about immigration above that of those who

were not directly affected. The main hypothesis of this chapter is that concerns about immigration increase as a result of a cut in benefits as a form of personal financial shock.

To estimate the impact of Hartz IV, I use a difference-in-differences approach, defining a treatment group consisting of all working age adults living in a household with at least one long-term unemployed adult (unemployed for at least one year) from 2003 to 2005. This treatment group are compared to a control group of working age adults in households where at least one adult was full-time employed, and no household members were unemployed between 2000 and 2007. Long-term unemployed Germans were the most directly affected group from the implementation of the reform in 2005, and were subject to a "significant reduction" in the amount of unemployment benefits they received due to the reform (Krebs and Scheffel, 2013). While employed Germans may have some concern about becoming unemployed in the future and being affected by the reform through rises in low-paid work and increases in income inequality for example (Chih-Mei, 2018), the aim of this chapter is to investigate the direct impact of a fall in benefit income on attitudes to immigration.

The main result of this chapter is that direct exposure to the Hartz IV reform (i.e. being a working age member of a household affected by long-term unemployment from 2003 to 2005) led to a 10% increase in the likelihood of reporting a high level of concern about immigration to Germany in 2005, compared to working age members of households with a stable employment history. This result provides support for economic self-interest explanations of attitudes to immigration, particularly the welfare strain hypothesis, where poorer natives fear that increased immigration inflows will increase the strain on the welfare system, and reduce or restrict their access to them (Facchini and Mayda, 2009, 2012; Hainmueller and Hiscox, 2010; Huber and Oberdabernig, 2016).

This result is robust to the inclusion of individual and year fixed effects, as well as when comparing the treatment group to an alternative control group of retired respondents. Retired respondents may be peripherally affected by the reform through concerns about their working age relatives, or through knock-on impacts on pensions and public services for example. However, retired respondents would have no reason to fear or experience direct financial impacts of the reform and this group therefore act as a useful secondary control for testing economic self-interest theories alongside the main control of those in stable employment households.

A similar approach to this chapter has recently been exploited by Pardos-Prado and Xena (2019) in the context of labour market competition, where the Hartz reforms are interpreted as a positive shock in terms of labour market fluidity rather than a negative shock to individual benefit payments. Their results confirm their expectation that unemployed Germans would become *less* concerned about immigration after the Hartz reforms as they more easily transferred to new occupations and achieved a greater sense of job security. The present chapter provides a different perspective on the Hartz reforms, instead focusing on the group who were most affected by the cut in benefits (long-term unemployed), rather than all unemployed respondents between 2003 and 2005, and shows that despite potential decreases in concerns due to increased labour market flexibility, the personal financial shock associated with Hartz IV caused a temporary *increase* in concerns about immigration. These results provide evidence of the detrimental impacts of personal financial shocks, such as benefit cuts, to individual attitudes toward immigration.

This chapter contributes to the literature on the impacts of economic strain and circumstances on attitudes to immigration, and the role that economic self-interest plays in attitude formation. In addition, this research sheds light on the wider impacts of the Hartz IV reform, which has focused mostly on labour market outcomes to date (Arent and Nagl, 2013; Ludsteck and Seth, 2013). The results presented in this chapter provide novel evidence that welfare reforms which create personal financial shocks for those reliant on benefits can contribute to public concerns about immigration.

3.2. Contextual and institutional background

3.2.1. The Hartz reforms

The Hartz reforms were a group of policies designed to help reduce unemployment and decrease "non-wage labour costs" (Kemmerling and Bruttel, 2006). In 2002, the 'Hartz commission' presented recommendations to the German government, the majority of which were implemented in four stages between December 2002 and January 2005 (Gaskarth, 2014). Table 1 presents a timeline of the key dates in the implementation of the Hartz reforms. The last of these reforms was Hartz IV, the reform of the unemployment benefit and social assistance system. Hartz IV was voted into the Bundestag[7] in October 2003 (*German Parliament Backs Labor Reform Plans*, 2003), into Bundesrat[8] in July 2004 (*Bundesrat: Länder stimmen „Hartz IV" zu*, 2004), and implemented on 1 January 2005 (Kemmerling and Bruttel, 2006).

Table 1: Key dates in the lead up to Hartz IV.

Date	Event
February 2002	'Hartz commission' appointed
September 2002	'Hartz commission' recommendations approved
December 2002	Hartz I & II adopted
October 2003	Hartz IV voted into Bundestag
January 2004	Hartz III adopted
July 2004	Hartz IV voted into Bundesrat
January 2005	Hartz IV adopted

The differences between the unemployment welfare system in Germany before and after the reform are presented in Figure 1. Prior to the reform, the German unemployment welfare system consisted of three main tiers. Firstly, if a worker had contributed enough in unemployment insurance (UI) they were entitled to unemployment benefits, which depended on contributions and replaced up to 67% of previous net labour income (Riphahn and Wunder, 2013). After the maximum duration of UB I eligibility (up to 32 months before the reform), or if an individual was not entitled to UB I, unemployment

[7] German federal parliament
[8] Federal Council

assistance (UA) was available, which replaced up to 57% of previous earnings for an unlimited time. This system meant that workers who had previously received higher salaries were not incentivised to find employment at a lower wage given the level of benefits they were receiving (Arent and Nagel, 2013; Riphahn and Wunder,2013; Kemmerling and Bruttel, 2006). Finally, social assistance was available as an additional benefit for jobseekers whose income "fell below a legally defined subsistence level" (Riphahn and Wunder, 2013).

After the implementation of Hartz IV, UB I was available for a maximum of only 12 months under the condition that jobseekers were obligated to accept any reasonable job offer[9], increasing the pressure to find work particularly for those who had been in higher paid jobs before unemployment (Kemmerling and Bruttel, 2006; Möller, 2013). However the main component of the Hartz IV reform was the combination of unemployment assistance and social assistance into a new unemployment benefit II (UB II), a means-tested benefit not tied to previous income which also came with the requirement of actively searching for work (Arent and Nagl, 2013; Riphahn and Wunder, 2013). Those who were unable to work at least 15 hours per week (due to sickness or disability for example) were now eligible for social assistance, a means-tested benefit designed to meet basic needs. Overall, the Hartz IV reform led to a reduction in benefits for the majority of those who had received unemployment assistance under the old system (Lampert and Althammer, cited in Riphahn & Wunder, 2013).

While unemployment did fall after the reform (Krause and Uhlig, 2012; Launov and Wälde, 2013) as shown in Figure 2, the increased pressure for jobseekers to take up work regardless of their prior occupational status led to many people accepting lower wages upon returning to work (Kemmerling and Bruttel, 2006). Indeed, the Hartz IV reform has been associated with a general fall in wages (Arent and Nagl, 2013; Giannelli et al., 2013), a lower share of workers employed full-time with permanent contracts, higher inequality, increases in the working poor, and higher job instability for workers under the age of 30 (Möller, 2013). These longer-term impacts are not the focus of this chapter, and therefore

[9] A reasonable job offer in this context means "any kind of work you are capable of performing" which have legal and constitutional wages and working conditions, including 'mini-jobs'. It would be acceptable to refuse a job which would impact a person's ability to return to their previous profession e.g. manual labour for a musician who needs to maintain dexterity, or due to care responsibilities (HartzIV.info, 2017).

the analysis will be concentrated on the direct impact of Hartz IV in 2005 when the reform was introduced.

The Hartz IV reform was a high-profile and well-known reform of the unemployment benefits system in Germany and attracted high levels of attention and opposition. It is unsurprising that the Hartz IV reform was so unpopular amongst the German public, and lead to several weeks of protests after the Hartz IV Act was passed in 2004 (Kemmerling and Bruttel, 2006). The public outcry against the reform was so significant that it also had implications for the governing party at the time, the Social Democratic Party (SDP), who suffered losses in the elections that followed with supporters feeling let down by the policy (Furlong, 2004), and contributed to the subsequent defection of SPD members to the Left party (Lawton, 2010).

Figure 1: Unemployment benefits system before and after the Hartz IV reform

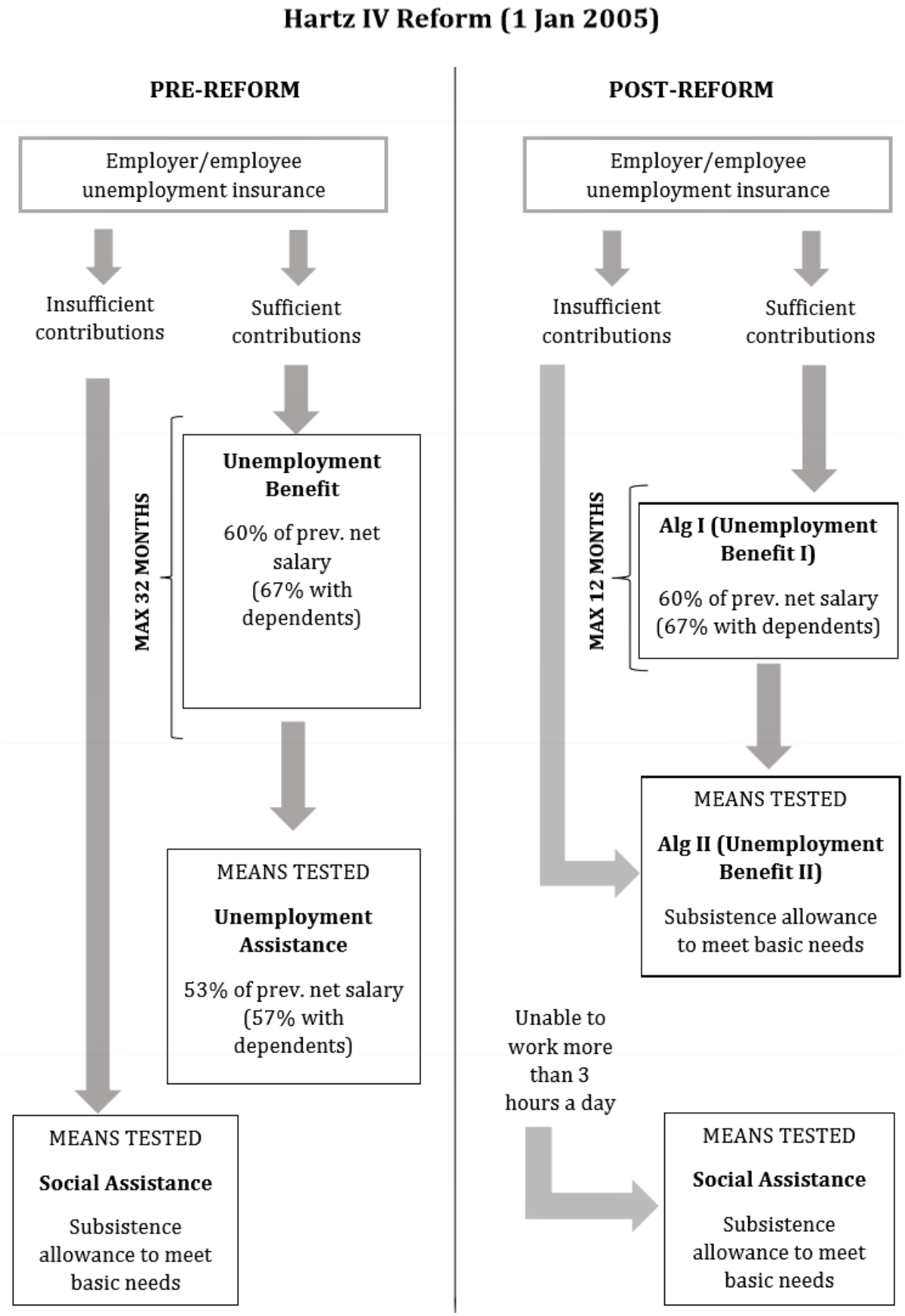
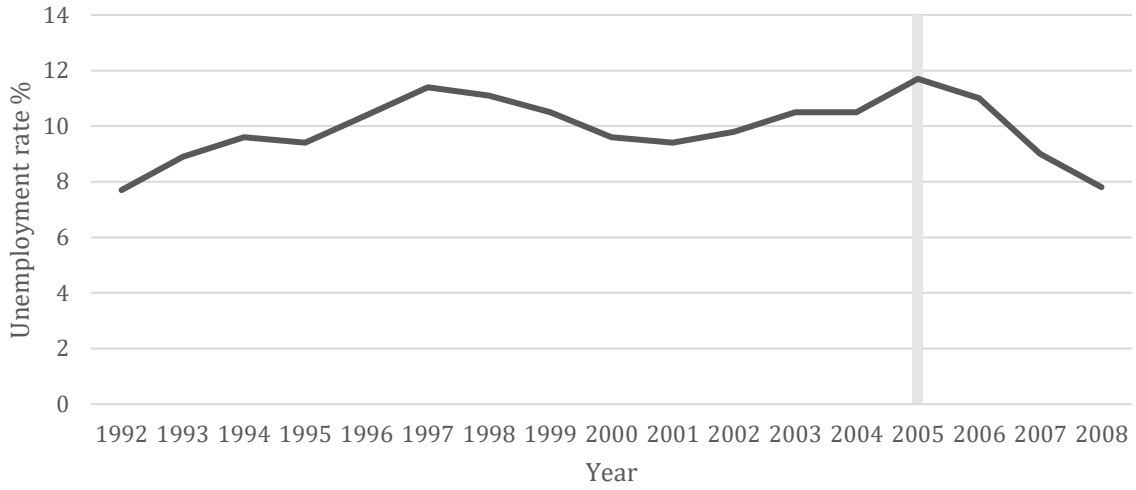


Figure 2: Registered unemployment rate (%) in Germany, 1992-2008



Source: Federal Employment Agency, 2018

3.2.2. Immigration policy in Germany, 2000-2008

In order to use the Hartz IV reform as a natural experiment for the impact of a benefits cut on attitudes to immigration, it is important to consider changes in immigration policy around 1st January 2005 which may interfere with the results. In the decades before the Hartz reforms, there had been an ongoing debate about whether Germany should be considered an 'immigration country' or not, and prior to the 1990s immigration was considered only in terms of temporary solutions in German policy (Green, 2013). However, the sharp increase in immigration in the early 1990s after German reunification alongside skills shortages in the labour market meant that in 1998 Germany began updating the laws and policies surrounding immigration (Green, 2013).

In 2000 the 'Green Card' programme was introduced, originally called "the Emergency Programme for Satisfying the Demand for IT Specialists", which aimed to cover the skill shortage of IT specialists in the short term by offering "temporary immigration rights to a limited number of high-skilled migrants in the IT sector" with an annual income of at least 40,000 euros. The introduction of the Green Card kicked off discussions around immigration, however Germany still held a risk-averse stance in terms of immigration (partly due to the controversy of the earlier Hartz reforms), and insisted on "the full seven-year transition period for the opening up of its labour market to the new EU member states in 2004" (Puchkova, 2011; Green, 2013).

The Green Card programme was originally designed as a short-term measure, but provisions for the employment of foreign specialists was made permanent with the Immigration Act of 2005 (Puchkova, 2011). In 2001 the Independent Migration Commission (Unabhängige Kommission "Zuwanderung") published a report officially stating that Germany had become an "immigration country" and needed highly skilled immigrant workers to fill labour market shortages (Gesley, 2017). These highly skilled immigrant workers included "scientists, professors or just highly qualified employees with an annual salary of about 85,000 euros" (Puchkova, 2011). While the government would not consider a general points-based migration system, the Immigration Act created a possibility to admit high-skilled migration from outside the EEA. However, Green (2013) describes this as "tentative" and suggests that Germany was still not as attractive to highly skilled workers as it needed to be. Until 2009, the conditions for immigration were still very strict, and between 2006 and 2010 the numbers of permits issued to these highly skilled workers were low (Green, 2013).The Immigration Act, also known as the Residence Act (Aufenthaltsgesetz), was passed and due to enter law in 2003, but was delayed due to incompliance with some formalities. It was finally adopted on 1st January 2005, and as well as targeting highly skilled foreign specialists and self-employed immigrants, the Act was based around controlling and restricting the influx of foreigners to Germany, fighting terrorism, and focusing on the integration of immigrants and refugees (Gräßler, 2005; Green, 2013).

To understand how the Immigrant Act was being discussed and perceived at the time, I use Lexis Nexis news archives to find the number of articles which mention the Act from 2000 and 2005, and compare these to numbers of articles about immigration in general, the Green Card programme, and the Hartz IV reform. Table 2 shows the number of news articles identified in Lexis Nexis using seven national or regional German newspapers with the highest readerships and a variety of political biases and audiences. News articles mentioning immigration and labour market related keywords are at similar levels in 2001, 2002, 2004 and 2005, with a dip in numbers in 2003, and articles mentioning the Green Card programme unsurprisingly are highest in 2000 before gradually falling off. For articles mentioning the Immigration Act or Residence Act, there appears to be a peak in 2002, between the definition of Germany as an "immigration country" in 2001, and the Act being passed in 2003, but articles mentioning the Act then decrease towards 2005. On the other hand, articles mentioning the Hartz IV reform shot up in 2004 and increased

again in 2005, making up over ten times the amount of articles mentioning the Immigration Act. This is further illustrated in Figure 3, which shows the relative stability of immigration and Immigration Act related news stories over this period, compared to the dramatic increase of articles on Hartz IV.

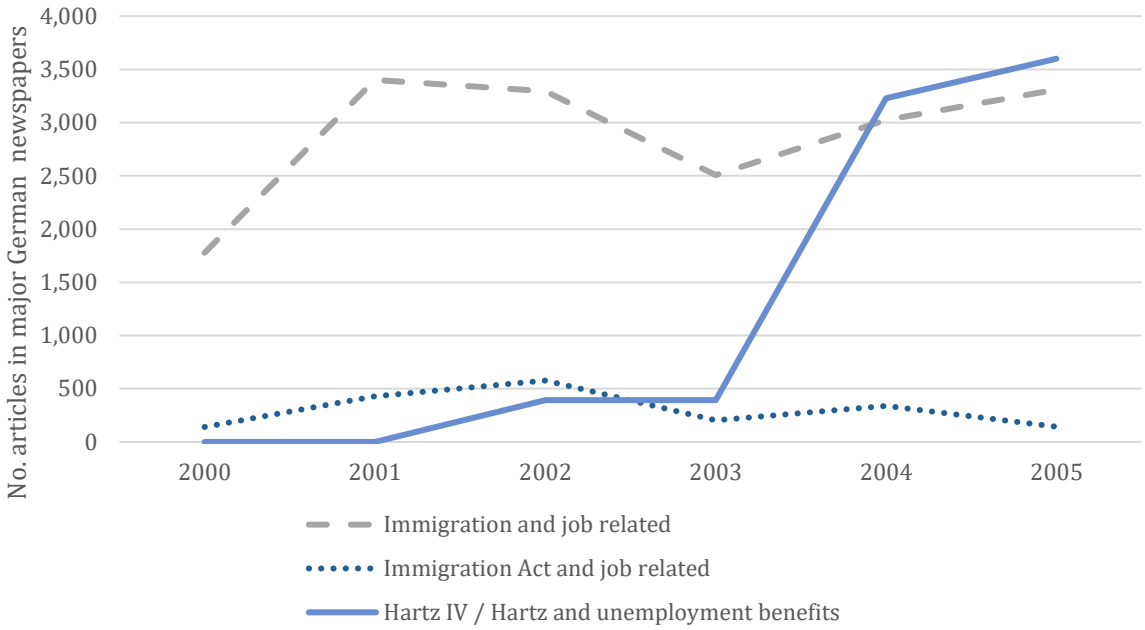
While it is possible that this official branding of Germany as an "immigration country" at the same time as the Hartz IV reform could have brought immigration to the forefront of public attention, it was largely a formalisation by the German government. Many of the changes (such as the 'Green Card') had already been enacted, and the implementation of the Immigration Act itself had been delayed by two years when it came into force on 1st January 2005. It also appears that there was little media attention given to the Act and its implications on the labour market (which would only affect the most qualified experts in certain areas in reality) around 2005. While the Immigration Act should be considered when interpreting the results (particularly for high-skilled natives), it does not seem likely that there would be a strong reaction amongst the long-term unemployed to this formalisation of German immigration and integration policy that would interfere with estimating the impact of Hartz IV on attitudes to immigration.

Table 2: Number of articles found in major German newspapers using keyword search in Lexis Nexis, 2000-2005.

	2000	2001	2002	2003	2004	2005
Immigration and job related	1,777	3,401	3,294	2,506	3,024	3,310
Green Card	513	401	95	64	58	37
Immigration Act	223	879	1,390	402	726	299
Immigration Act and job related	141	430	577	204	340	143
Hartz IV / Hartz and unemployment benefits	0	0	394	392	3,230	3,600

Search conducted in Lexis Nexis using search strings made up of German keywords for each issue from a variety of major German newspapers: BILD.de, Die Zeit, Die Welt, Die Tageszeitung (taz), Frankfurter Allgemeine Zeitung (FAZ), Süddeutsche Zeitung and Berliner Zeitung. Figures show number of articles identified for each topic from 1st January to 31st December in each year from these news sources.

Figure 3: Number of articles found in German newspapers containing keywords about labour related immigration or the Hartz IV reform, 2000-2005



3.3. Data

3.3.1. Estimation strategy

I use individual-level panel survey data from the German Socio-Economic panel, waves 17 to 24 (2000 to 2007), excluding immigrant samples and any samples which were created after the year 2000[10]. The households selected to take part in the survey are followed year on year, and the survey is carried out face-to-face with all members of selected households aged 16 and over. As members of a household in the sample reach age 16 they begin to be interviewed and are followed each year thereafter even if they leave the original household. Any persons who join a household in the sample are also interviewed. This data includes questions which focus on respondents' opinions and preferences on a variety of issues (including immigration), as well as details of respondents' socioeconomic characteristics including variables for age category, educational attainment, sex, and region (all set constant at their 2002 values in this analysis). The main sample of respondents considered in this chapter are those aged 20-55 (i.e., working age and not close to retirement) at the time of their interview in 2005. I exclude all individuals who were unable to work (for example, due to a disability or health condition), as this group were not affected by the Hartz reforms in the same way as those who were able to work 15 hours or more a week (Riphahn and Wunder, 2013).

To estimate the effect the Hartz IV reform had on concerns about immigration, I use a difference-in-differences approach with individual and year fixed effects of the following form:

$$(1) \qquad Y_{it} = \alpha + \beta * treat_i + \delta_t + \tau_t * (treat_i * t) + \varepsilon_i$$

Where Y_{it} is a binary dependent variable derived from a question in the GSOEP asking respondents how concerned they are about immigration to Germany, with options to respond: 'Very concerned'; 'Somewhat concerned'; or 'not at all concerned'. To measure high concern about immigration, Y_{it} equals one if the i^{th} individual reports 'very concerned' about immigration to Germany in year *t.* This question in the GSOEP measures respondents' level of concern or worry about immigration to Germany, which may not necessarily measure anti-immigrant sentiment or hostility toward foreigners. However, this question refers only to 'immigration' and not 'immigrants', and therefore it is unlikely

[10] Samples A, C, E, and F.

that it could be interpreted as concern *for* immigrants and instead is more likely to be interpreted as concern *about* immigration and its impact on Germany and German citizens. Spearman correlations between the immigration concern question and other questions in the GSOEP which are linked to anti-immigration sentiment support the use of this variable as an anti-immigration measure (see Appendix 7.1.2). In addition this variable has been used and validated as a measure of anti-immigration attitudes in other studies which use GSOEP data (Lancee and Pardos-Prado, 2013; Pardos-Prado and Xena, 2019).

$treat_i$ is a dummy variable which equals one if the i^{th} individual is in the treatment group. The treatment group in the main sample consists of working age respondents (aged 20-55) living in a household with at least one adult who was long-term unemployed between 2003 and 2005, and marks respondents who were directly affected by the Hartz IV reform. The control group to compare the treatment group against consists of working age respondents living in households where no adults were registered unemployed and at least one adult was in full-time employment throughout the 2000-2007 period. This control group aims to capture those who experienced *no* direct financial impact from the reform. However, because a control group of working age respondents may still be concerned about the possibility of future unemployment or reduced wages, I also test the model on an alternative sample (Alternative I) which compares the treatment group to a second control group consisting of retired respondents (aged 65 and over) who should have no personal labour market concerns. A further sample is created (Alternative II) using a treatment group of benefit claimants most likely to be affected (couples without children) and a control group of households who were generally least affected (couples with children and one-person households) in order to understand if there are any impacts for individuals who may fear being affected in the future different to that of the financial shock experienced by the long-term unemployed (Schulte, cited in Arent & Nagl, 2013). The different samples used in this chapter are outlined in Table 3.

τ_t can be interpreted as the causal effect of the Hartz IV reform on the attitudes towards immigration of those affected by it at each year between 2000 and 2007. The Hartz reforms were announced by Chancellor Schröder in March 2003 before going through German parliament in October 2003 and July 2004. Previous research has shown that the announcement of the Hartz reforms in 2003 caused increases in political dissatisfaction

(Fervers, 2019) and may have also had some impact on the outcome of this analysis. Therefore, using a base year of 2002, I consider anticipatory effects in 2003 and 2004, as well as the post-reform effects in 2005, 2006 and 2007.

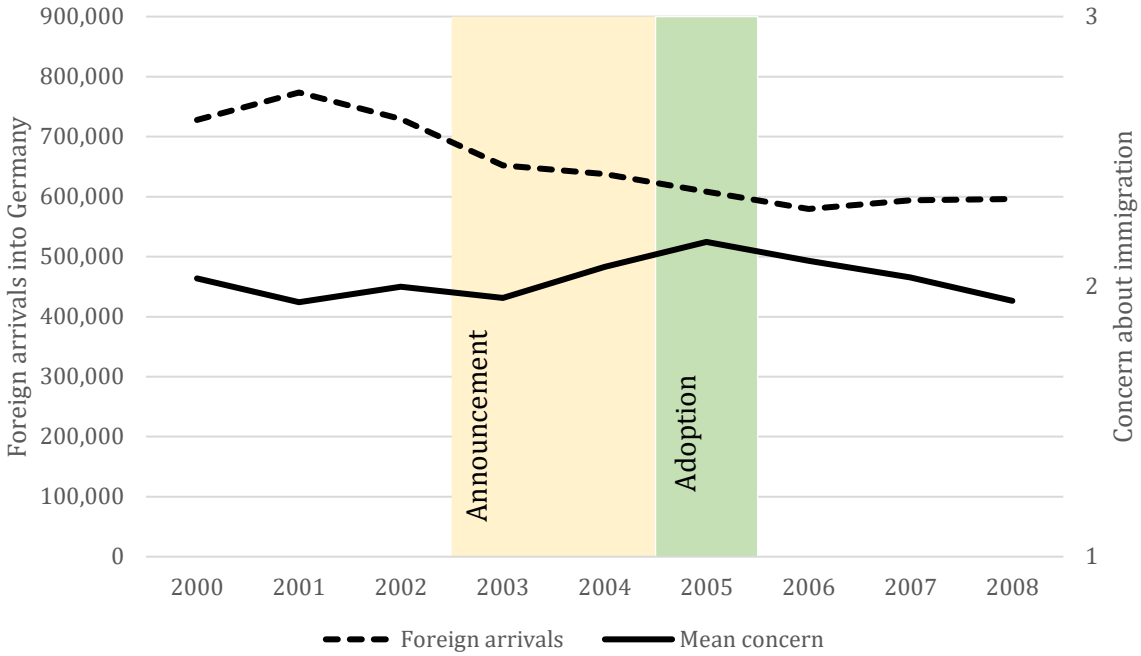
Individual fixed effects are included to attempt to control for underlying factors which could affect the outcome such as unmeasurable attitudes or preferences of respondents, and year fixed effects control for any aggregate trends or shocks that may affect concern levels about immigration to Germany. To check the robustness of the results, I also estimate the model with concerns about 'maintaining peace' and 'environmental protection' as the dependent variables. As these concerns should not be related to the key variables or relationship between unemployment benefits and immigration attitudes, I am able to test whether changes in attitudes to immigration merely reflect a general change in attitudes and worries regardless of the topic.

Figure 4 shows immigration numbers and average concerns about immigration in the GSOEP sample from 2000-2008. The graph shows that while foreign arrivals fell throughout this period, average concerns about immigration (where 1 = no concern, 2 = some concern and 3 = high concern) increased between 2003 and 2005, reaching a peak average attitude of 2.17 (between somewhat and very concerned) before falling again by 2006. However, Figure 5 shows that this rise in immigration concern was not only apparent for the treated group of those directly affected by the Hartz IV reform but also the control group of those without any unemployment within their household throughout the period. While these preliminary results may indicate that direct exposure to Hartz IV did not necessarily influence the entire increase in concerns, it is possible it played a smaller role as the proportion of people reporting high concern did increase by more within the treatment group compared to the control group (16 percentage points compared to 12).

Table 3: Details of different samples used in analysis

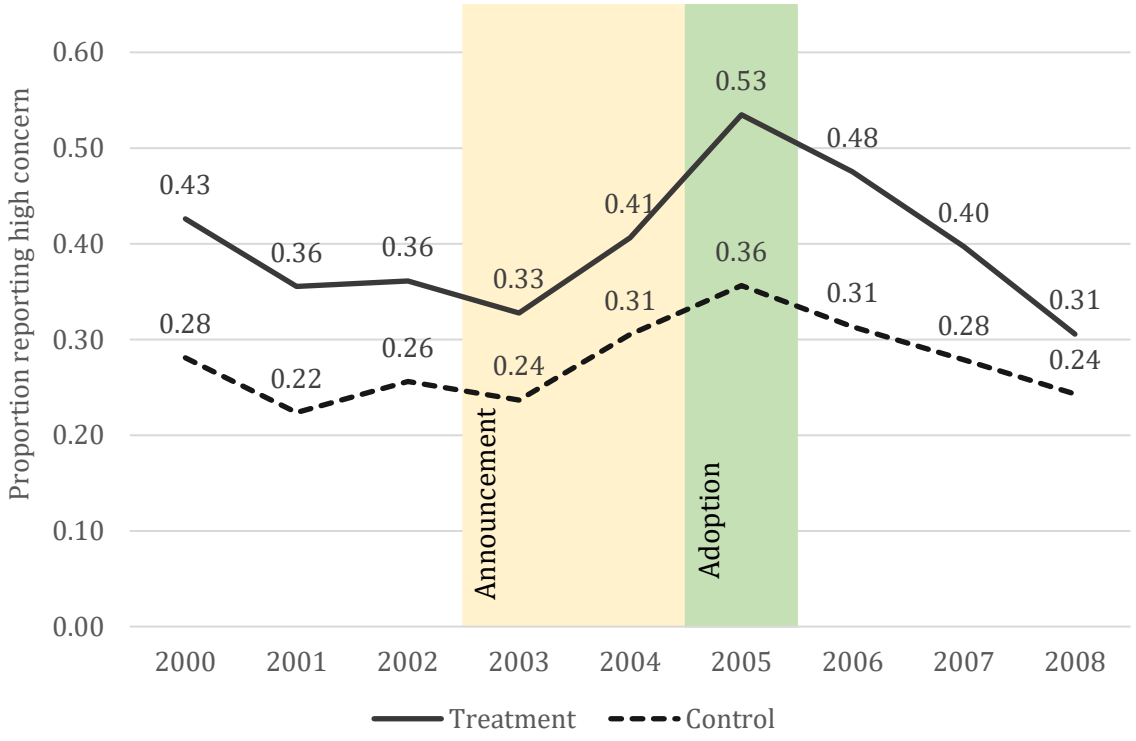
Sample	Treatment group	Control group
Main	Aged 20-55 In household with at least one long-term unemployed adult (2003-2005)	Aged 20-55 In household with no unemployment and at least one full-time employed adult throughout period
Alternative I	Aged 20-55 In household with at least one long-term unemployed adult (2003-2005)	Aged over 65 Retired throughout period
Alternative II	Aged 20-55 Household type: Childless couple	Aged 20-55 Household type: Couple with children or one-person household

Figure 4: Foreign arrivals and average immigration concern, 2000-2008.



Source: Federal Office for Migration and Refugees, 2018; GSOEP. Respondents aged 20-55, where 1 = not at all concerned and 3 = very concerned.

Figure 5: Proportion reporting high immigration concern, 2000-2008



Source: GSOEP. Main sample.

Table 4 provides sample means for each of the treatment and control groups. Columns 1 and 2 show the main treatment and control group, column 3 shows sample means for the control group of alternative sample I (i.e. retired respondents), while columns 4 and 5 show the treatment and control group for alternative sample II, considering different household types. The main difference apparent from these sample means is that the main treatment group of individuals who were affected by long-term unemployment between 2003 and 2005 were much more likely to live in former east German states than households with a stable employment history throughout the period. Respondents in the main treatment group were also more likely to hold lower levels of educational qualifications than the control group. Furthermore, both the main and alternative II samples show that respondents in the treatment group (columns 1 and 4) are generally more likely to be very concerned about immigration, are slightly older, and skew more female than their respective control groups.

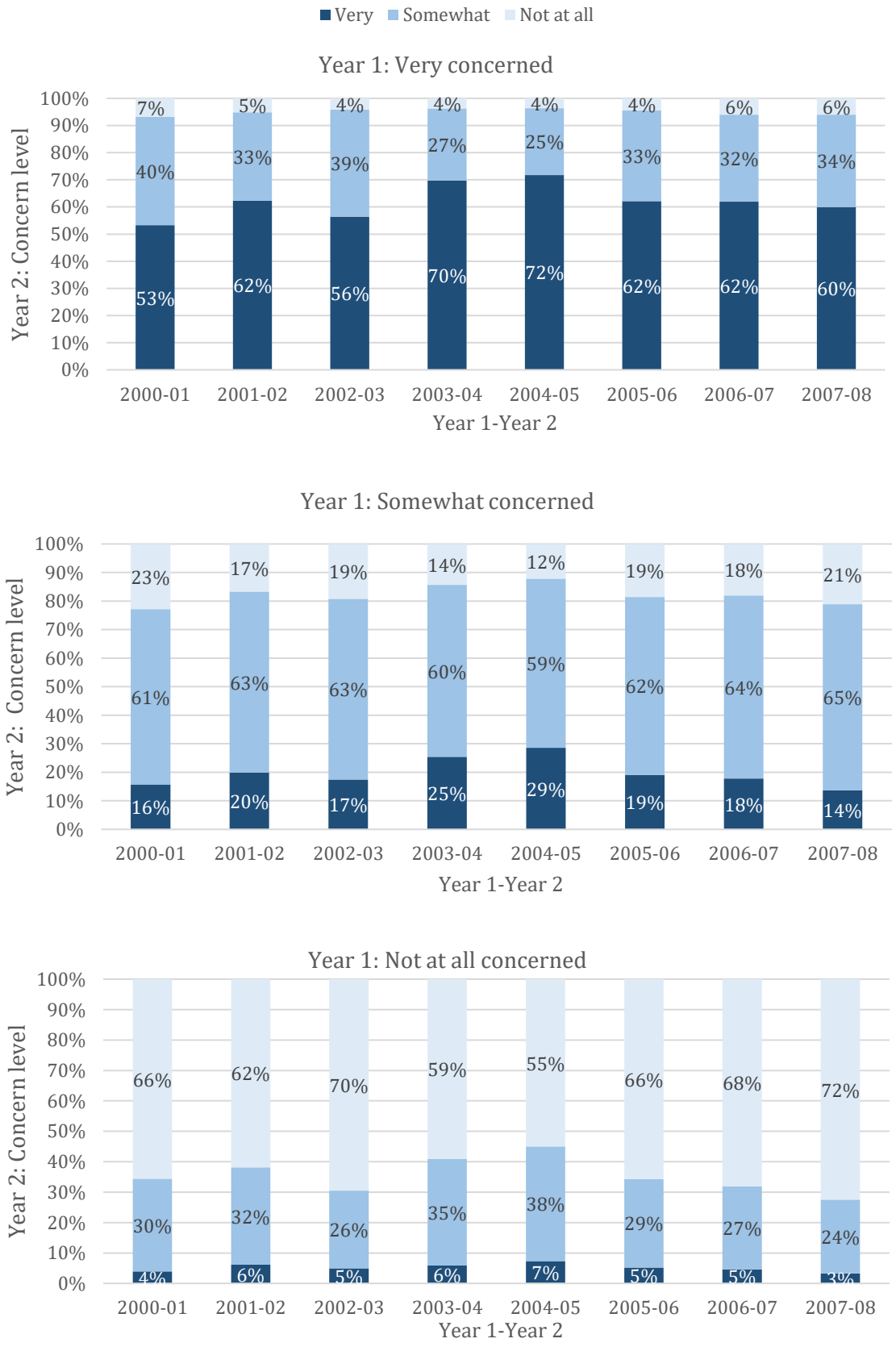
Descriptive analysis of the main sample of respondents shows that on average higher proportions of respondents reported high concern about immigration in 2004 and 2005 regardless of their reported concern level in the previous year. Figure 6 shows that those who were already 'very' concerned in the previous year were less likely to report a fall in concern and those who were 'somewhat' or 'not at all' concerned in the previous year were more likely to become more concerned in 2004 and 2005. Given that there appears to be greater movement from respondents with no concern in 2003 and 2004 to report some concern in 2004 and 2005 respectively, it may be worthwhile to consider alternative dependent variables which capture these increases in concern. I will therefore consider dependent variables representing whether a respondent reports *either* that they are somewhat or very concerned, and I will also consider a dependent variable indicating if a respondent has *increased* their concern level compared to the previous year.

Table 4: GSOEP sample means, 2000-2008.

VARIABLES	Treatment (1)	Control (2)	Retired (3)	Childless couple (4)	Couple with children / single person (5)
Very concerned (immigration)	0.389	0.275	0.311	0.308	0.264
	(0.488)	(0.447)	(0.463)	(0.462)	(0.441)
Age	43.603	41.899	74.991	45.385	38.976
	(8.939)	(8.580)	(5.140)	(9.844)	(6.993)
Age bands					
20-29	0.109	0.112	-	0.110	0.108
	(0.311)	(0.315)	-	(0.313)	(0.310)
30-39	0.272	0.370	-	0.216	0.581
	(0.445)	(0.483)	-	(0.412)	(0.493)
40-49	0.587	0.500	-	0.610	0.306
	(0.493)	(0.500)	-	(0.488)	(0.461)
55-65	0.033	0.018	-	0.063	0.005
	(0.178)	(0.133)	-	(0.242)	(0.068)
Education levels					
None/elementary	0.190	0.058	0.310	0.075	0.069
	(0.393)	(0.235)	(0.463)	(0.263)	(0.254)
Mid vocational	0.652	0.523	0.464	0.534	0.523
	(0.476)	(0.499)	(0.499)	(0.499)	(0.500)
High vocational	0.054	0.168	0.081	0.148	0.197
	(0.227)	(0.374)	(0.272)	(0.355)	(0.398)
Higher education	0.103	0.251	0.145	0.243	0.211
	(0.304)	(0.433)	(0.352)	(0.429)	(0.408)
Males	0.397	0.476	0.357	0.403	0.515
	(0.489)	(0.499)	(0.479)	(0.491)	(0.500)
West Germany	0.255	0.793	0.668	0.742	0.788
	(0.436)	(0.405)	(0.471)	(0.438)	(0.409)
Observations	1,656	26,649	5,022	6,030	13,671
Respondents	184	2,961	558	670	1,519

Figures show sample means. Standard errors given in parentheses.

Figure 6: Transitions between immigration concern levels.



Source: GSOEP. Main sample.

3.4. Results

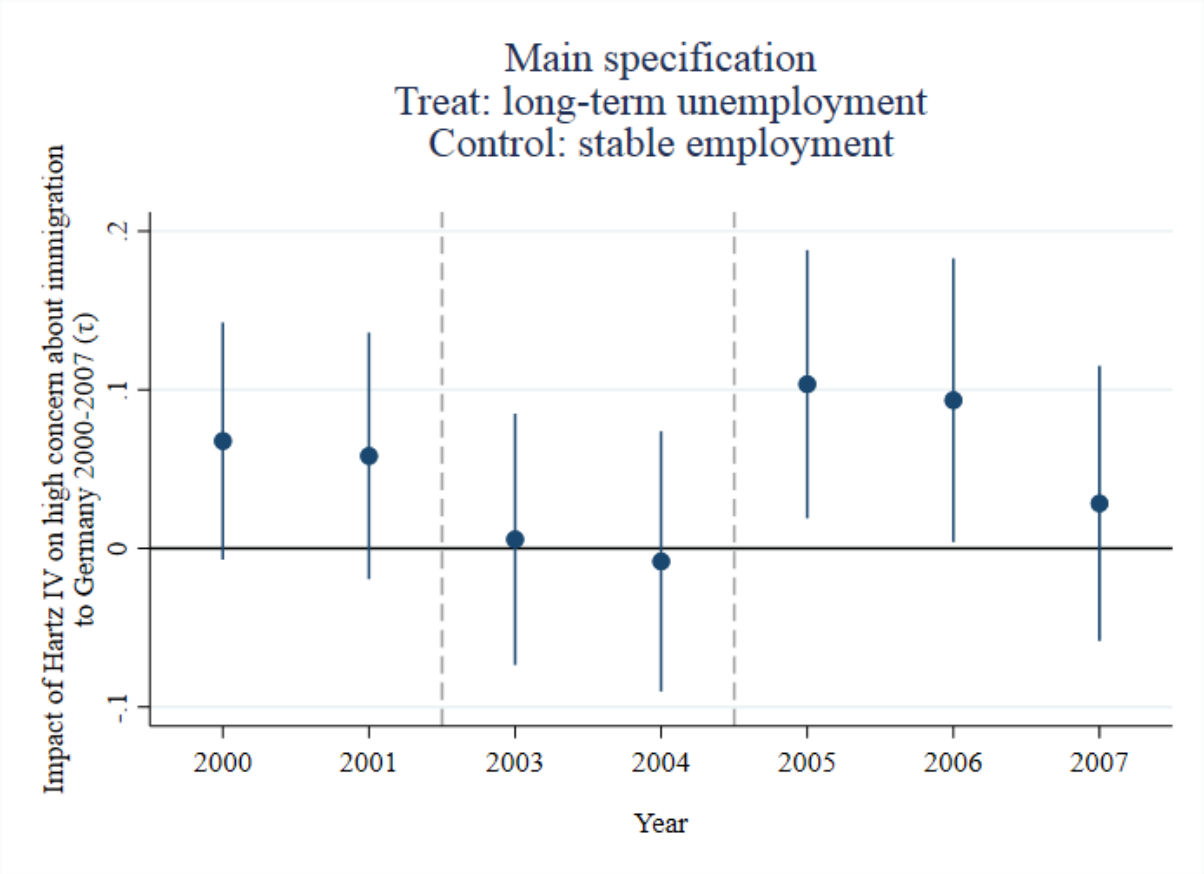
3.4.1. Main specification results

I firstly consider the treatment effects of being directly affected by the reform (in a household with at least one long-term unemployed adult from 2003 to 2005) compared to being unaffected by the reform (in a household which experienced stable employment throughout the period). I find evidence that the cut in unemployment benefits associated with the Hartz IV reform caused an increase in the likelihood of reporting high immigration concern. Figure 7 shows the treatment effect on the likelihood of being very concerned about immigration to Germany in each year between 2000 and 2007 (using 2002 as the base year). Controlling for both individual and year fixed effects, the graph shows a statistically significant treatment effect in 2005 of around 10%, which persists at a slightly smaller magnitude in 2006. While there is some evidence of less statistically significant pre-treatment effects in 2000 and 2001, the anticipatory treatment effects during the announcement and voting of the policy are very close to zero. Table 5 shows estimates for the main treatment with individual and year fixed effects and presents an estimated treatment effect of 0.104 in 2005, and shows that these results hold when standard errors are clustered at the household level as well as at the individual level.

These results provide some evidence to support the welfare strain hypothesis, where natives who expect to be reliant on the welfare state fear that immigrants will increase strain on the welfare system, and therefore reduce or restrict their access (Facchini and Mayda, 2009, 2012; Hainmueller and Hiscox, 2010; Huber and Oberdabernig, 2016). In this case, rather than an increase in immigration causing increased anxieties about welfare strain, the increase in strain caused by a large-scale cut in benefits may have increased concerns about immigration among those most affected. This could be due to immigration becoming a scapegoat for the cut (rather than the true and more abstract cause of high unemployment), with natives blaming perceived immigration inflows as the cause of the benefits cut. Alternatively, these results may suggest that after the personal financial shock of losing benefits, natives are increasingly concerned about immigration causing further strain on the already restricted welfare system. These results align with recent evidence that increases in automation can trigger anti-immigration sentiment through concerns about job scarcity and perceived labour market competition with

immigrants (Gamez-Djokic and Waytz, 2020). In this case, perceived welfare strain may be fuelling anti-immigration attitudes.

Figure 7: Treatment effect year interactions, main sample.



GSOEP. Main sample. Including individual and year fixed effects. Tails show 5% significance level.

Table 5: Impact of Hartz IV cut on immigration concern.

VARIABLES	(1)	(2)
Treat * year (base = 2002)		
year = 2000	0.068*	0.068*
	(0.038)	(0.039)
year = 2001	0.058	0.058
	(0.040)	(0.043)
year = 2003	0.006	0.006
	(0.040)	(0.045)
year = 2004	-0.008	-0.008
	(0.042)	(0.045)
year = 2005	0.104**	0.104**
	(0.043)	(0.046)
year = 2006	0.093**	0.093*
	(0.046)	(0.049)
year = 2007	0.028	0.028
	(0.044)	(0.048)
Standard errors	Clustered by respondent	Clustered by household
Observations	28,305	28,305
R-squared	0.018	0.018
No. of respondents	3,145	3,145

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

GSOEP data, 2000-2007. Main sample of respondents. Aged 20-55 at 2005 interview date and able to work.

Treatment: In household including long-term unemployed adult 2003-2005

Control: In household with no unemployed adults and at least one full-time employed adult 2000-2007.

Estimates show the interaction effects between treatment and each year from 2000-2007, using 2002 as the base year. All estimates include individual and year fixed effects.

3.4.2. Robustness tests

To investigate the main results shown in Table 5 further, I estimate the impact of being directly affected by Hartz IV on two alternative dependent variables which may capture changes in immigration concerns in different ways. Firstly, I estimate the treatment effect on the likelihood of being either somewhat or very concerned about immigration, and secondly on the likelihood of *increasing* reported concern levels compared to the previous year (including from "not at all" to "somewhat"). Both alternative dependent variables account for respondents who may have become moderately concerned about immigration due to the reform, having had no immigration concerns before.

Table 6 presents the treatment effects on these dependent variables, compared to the original results in column 1. I find that while there is no evidence that being in a household affected by long-term unemployment led to an increase in the likelihood of reporting any level of concern about immigration, there is even stronger evidence that the Hartz IV reform increased the likelihood of reporting a higher level of concern compared to the previous wave interview than for the main dependent variable of reporting the highest concern level. These results show that while the reform may not have caused a significant movement from those who were not at all concerned about immigration prior to the reform, it did increase the likelihood of both reporting high concern and reporting a higher level of concern compared to the previous year.

I also compare the main results to alternative specifications, with full results shown in Table 7. The first (Alternative I) compares the treatment group to an alternative retired control group who in theory should have no labour market interests or worries about future unemployment. The purpose of this specification is to understand if Hartz IV indirectly affected the working age control group in the main specification given that there is both a chance that they will be unemployed and subject to the reduced benefits in future, and that they may have labour market concerns which could reflect on immigration concerns due to the falls in wages and increased competition for work associated with the reform.

The key results from this specification are shown in Figure 8. The similarity of these results to the main specification suggest that the increase in concern influenced by Hartz IV is not significantly affected by labour market concerns, as the cut to unemployment benefits may have increased competition for work as the cost of unemployment

effectively rose. Overall, these results provide further robustness to the evidence that a personal financial shock in the form of a cut to unemployment benefits has a causal impact on being highly concerned about immigration.

Results for the second alternative specification (Alternative II), displayed in Figure 9, show the impact of being a member of a household which was more likely to lose benefits in the event of losing their job (childless couples) compared to those whose benefits remained largely unchanged (couples with children and one-person households) (Schulte, cited in Arent & Nagl, 2013). These results show no evidence that being a member of a childless couple household had an effect on immigration concerns, however there does appear to be a small, insignificant treatment effect in 2003, possibly suggesting that households who would have lost out from the reform may have had an initial reaction to the news that unemployment benefits would be cut for their household, regardless of whether they were affected by long-term unemployment at the time or not.

While I would have liked to test a further specification using the household type treatment and control groups among respondents in households with at least one long-term unemployed adult, the number of respondents in the GSOEP who meet these criteria is too small (N=32). This is also the case when considering those who reported they were unemployed in each interview between 2002 and 2005. However, I do consider a final specification with respondents who were unemployed at the time of their interview in 2003 which includes a slightly greater number of respondents in the panel (N=50). Figure 10 present the treatment effect for each year of being in a childless couple household, compared to being in a couple with children or one-person household, and shows evidence of a greater impact in 2003, closer to 0.2.

Table 6: Impact of Hartz IV cut on alternative dependent variables.

VARIABLES	Very concerned (1)	Somewhat or very concerned (2)	Increased concern (3)
Treat * year (base = 2002)			
year = 2000	0.068*	-0.035	-
	(0.038)	(0.031)	-
year = 2001	0.058	0.019	0.088*
	(0.040)	(0.027)	(0.046)
year = 2003	0.006	0.003	0.063
	(0.040)	(0.027)	(0.045)
year = 2004	-0.008	-0.013	0.066
	(0.042)	(0.027)	(0.043)
year = 2005	0.104**	-0.036	0.117***
	(0.043)	(0.029)	(0.045)
year = 2006	0.093**	-0.010	0.051
	(0.046)	(0.027)	(0.042)
year = 2007	0.028	-0.019	0.035
	(0.044)	(0.031)	(0.040)
Observations	28,305	28,305	25,160
R-squared	0.018	0.009	0.012
No. of respondents	3,145	3,145	3,145

Standard errors clustered by respondent in parentheses

*** p<0.01, ** p<0.05, * p<0.1

GSOEP data, 2000-2007. Main sample of respondents. Aged 20-55 at 2005 interview date and able to work.

Treatment: In household including long-term unemployed adult 2003-2005

Control: In household with no unemployed adults and at least one full-time employed adult 2000-2007.

Estimates show the interaction effects between treatment and each year from 2000-2007, using 2002 as the base year. All estimates include individual and year fixed effects.

Table 7: Impact of Hartz IV cut on immigration concern, alternative I and II samples.

	Alternative I sample		Alternative II sample	
VARIABLES	(1)	(2)	(3)	(4)
Treat * year (base = 2002)				
year = 2000	0.104**	0.104**	0.002	0.002
	(0.043)	(0.045)	(0.021)	(0.022)
year = 2001	0.081*	0.081*	-0.002	-0.002
	(0.044)	(0.048)	(0.021)	(0.022)
year = 2003	0.014	0.014	0.027	0.027
	(0.044)	(0.049)	(0.021)	(0.022)
year = 2004	0.007	0.007	0.004	0.004
	(0.046)	(0.049)	(0.022)	(0.022)
year = 2005	0.096**	0.096*	-0.005	-0.005
	(0.048)	(0.051)	(0.023)	(0.025)
year = 2006	0.137***	0.137**	0.008	0.008
	(0.050)	(0.054)	(0.023)	(0.024)
year = 2007	0.085*	0.085	-0.023	-0.023
	(0.048)	(0.052)	(0.023)	(0.025)
Standard errors	Clustered by respondent	Clustered by household	Clustered by respondent	Clustered by household
Observations	6,687	6,687	19,701	19,701
R-squared	0.023	0.023	0.016	0.016
No. of respondents	743	743	2,189	2,189

Standard errors clustered by respondent in parentheses

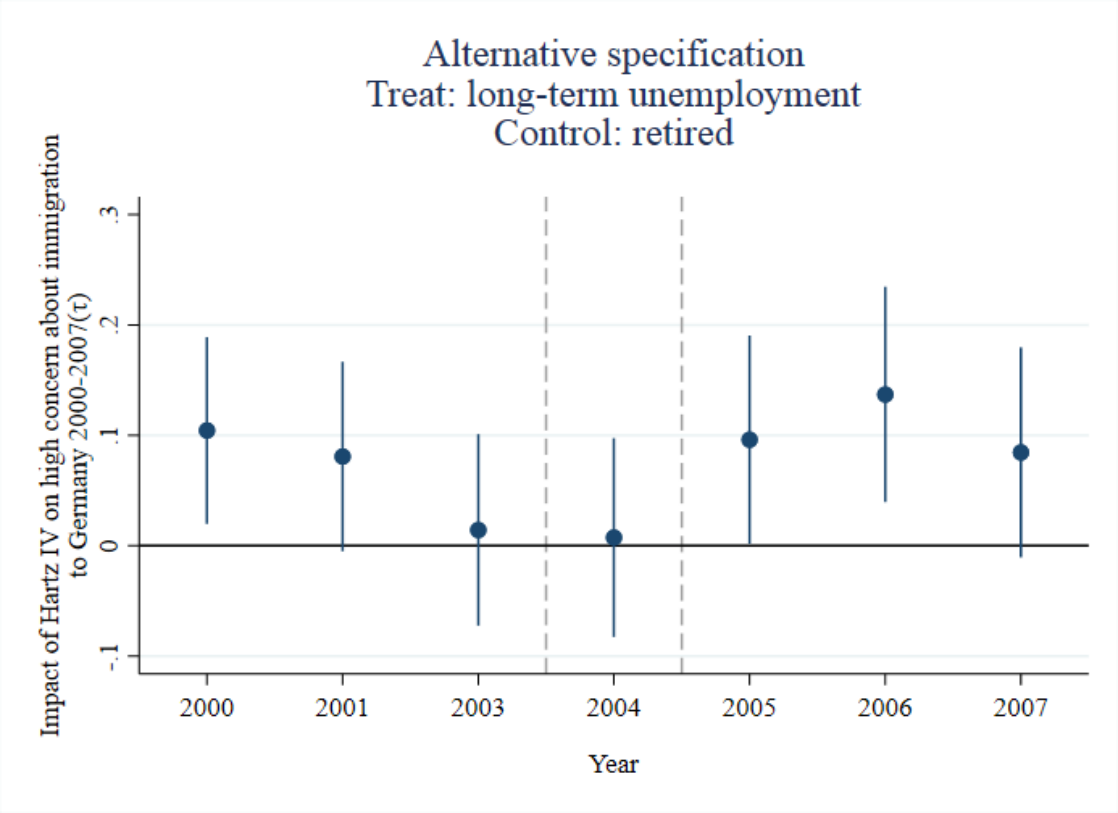
*** p<0.01, ** p<0.05, * p<0.1

GSOEP data, 2000-2007. Aged 20-55 at 2005 interview date and able to work. Estimates show the interaction effects between treatment and each year from 2000-2007, using 2002 as the base year. All estimates include individual and year fixed effects.

For the Alternative I sample, treatment is applied for respondents in households including a long-term unemployed adult from 2003-2005 with a control group of respondents aged 65 or over and retired.

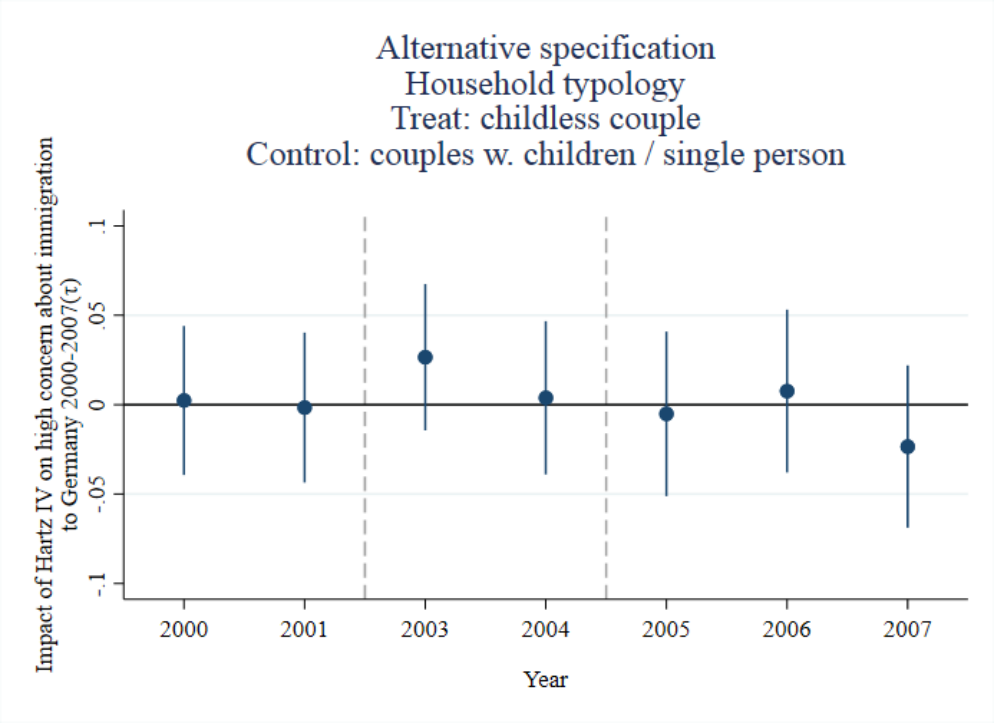
For the Alternative II sample, treatment applied for childless couple households with a control group of couples with children (under 16) and one-person households.

Figure 8: Treatment effect year interactions, alternative I.



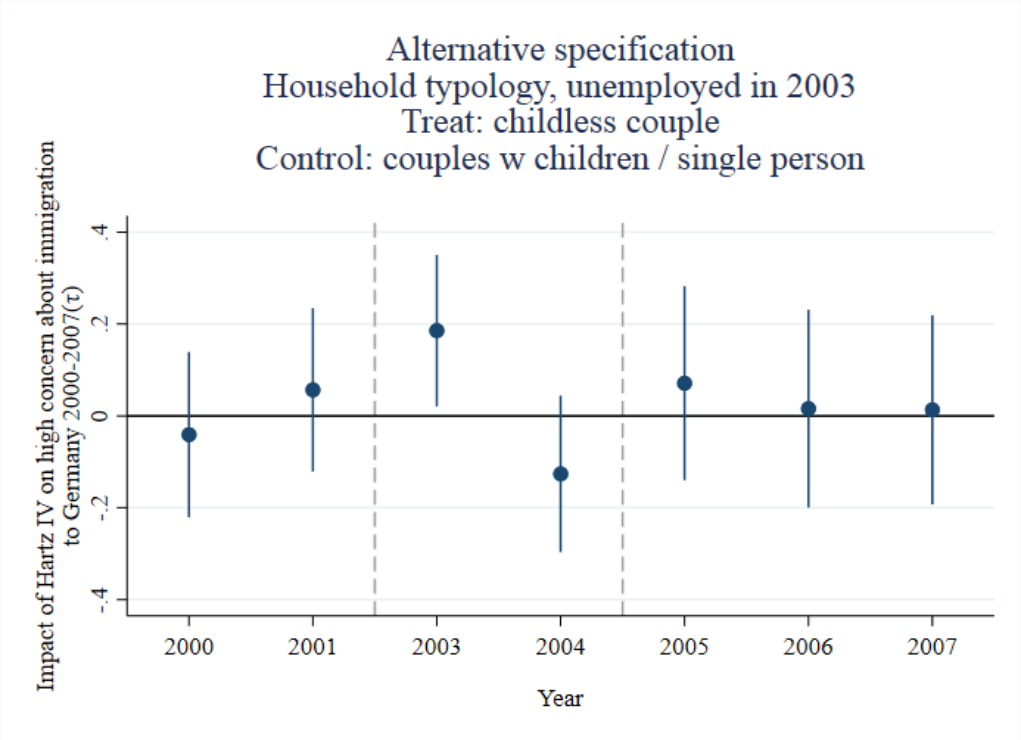
GSOEP. Alternative I sample. Including individual and year fixed effects. Tails show 5% significance level.

Figure 9: Treatment effect year interactions, alternative II.



GSOEP. Alternative II sample. Including individual and year fixed effects. Tails show 5% significance level.

Figure 10: Treatment effect year interactions – alternative sample IIb.

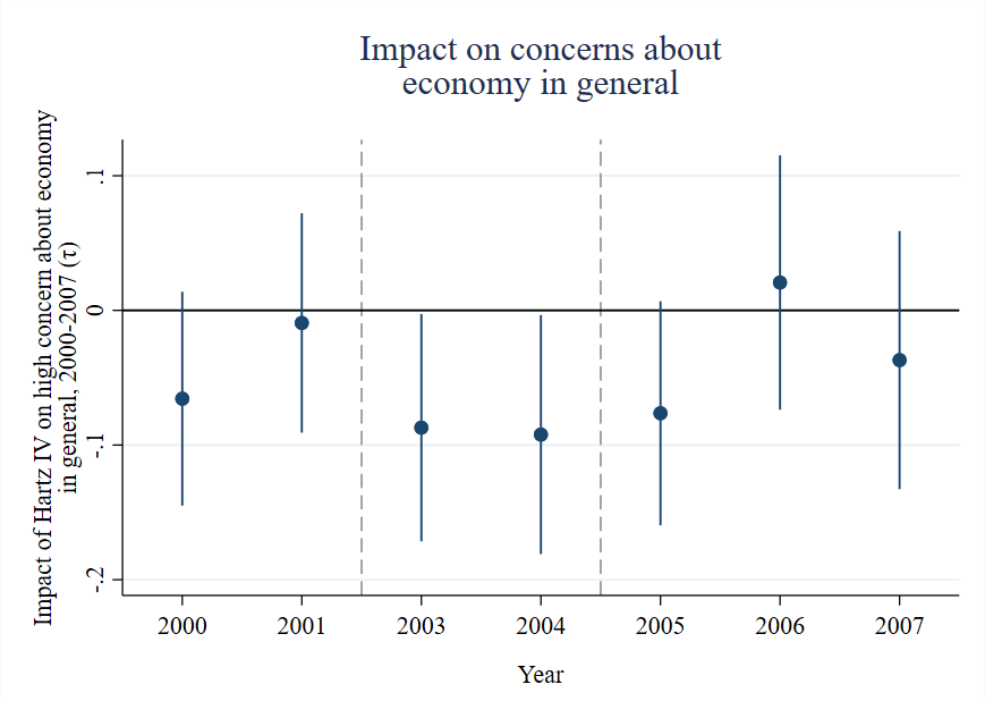


GSOEP. Alternative II sample, unemployed in 2003. Including individual and year fixed effects. Tails show 5% significance level.

3.4.3. Placebo tests

To check whether the results found in this chapter are driven by a general impact of Hartz IV on concerns regardless of the topic, I estimate the treatment effects for individual concerns about other issues[11] as alternative dependent variables. These variables contain a mixture of issues which are unlikely to simultaneously be affected by a benefit cut, issues which could theoretically be affected (e.g. own economic situation), and issues connected to immigration concerns (e.g. hostility to foreigners). As shown in Appendix 7.1.2, all these other concerns are correlated with immigration concerns, however, the figures below (11-16) show no evidence that being directly affected by Hartz IV led to increases in the likelihood of reporting these concerns. These results provide confidence that the effects found in this chapter are specific to immigration concerns and have implications for attitudes to immigration rather than overall anxiety levels.

Figure 11: Treatment effect year interactions on concern about the economy in general



[11] These questions are provided in Appendix 7.1.1

Figure 12: Treatment effect year interactions on concern about respondent's own economic situation

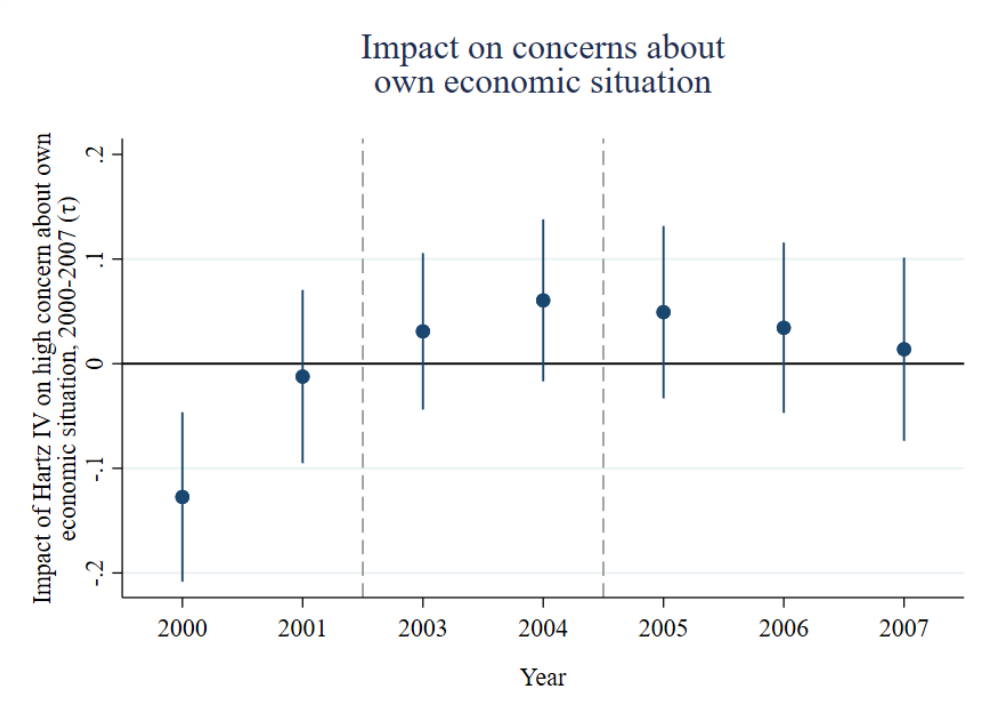
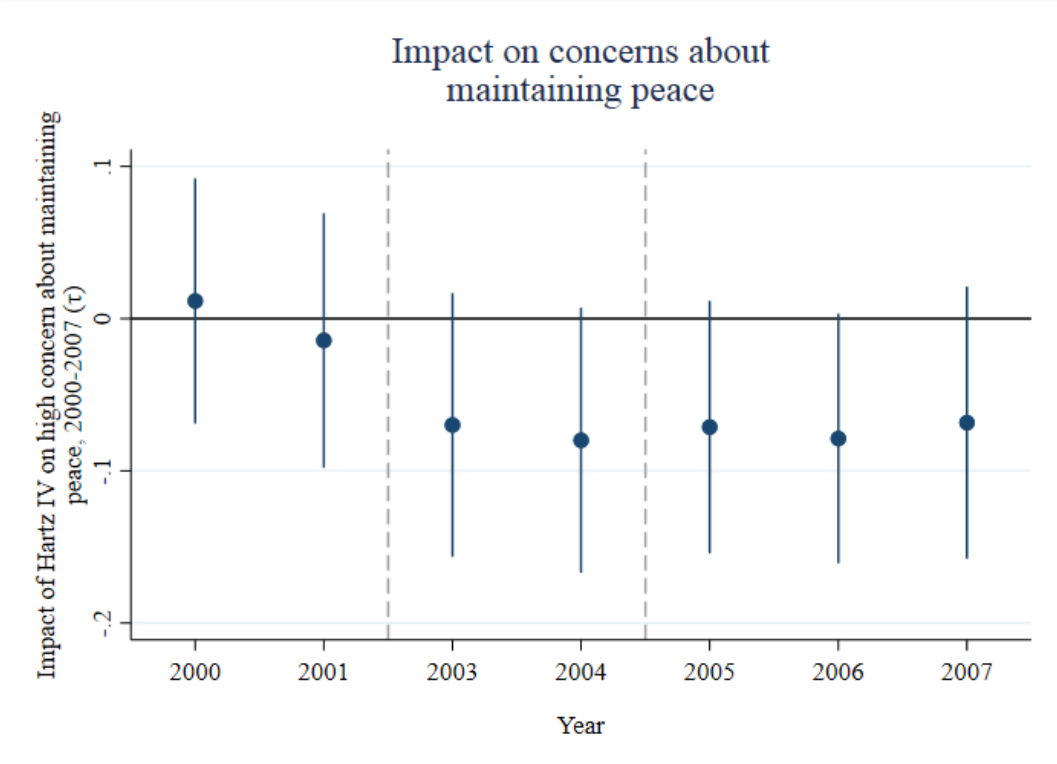
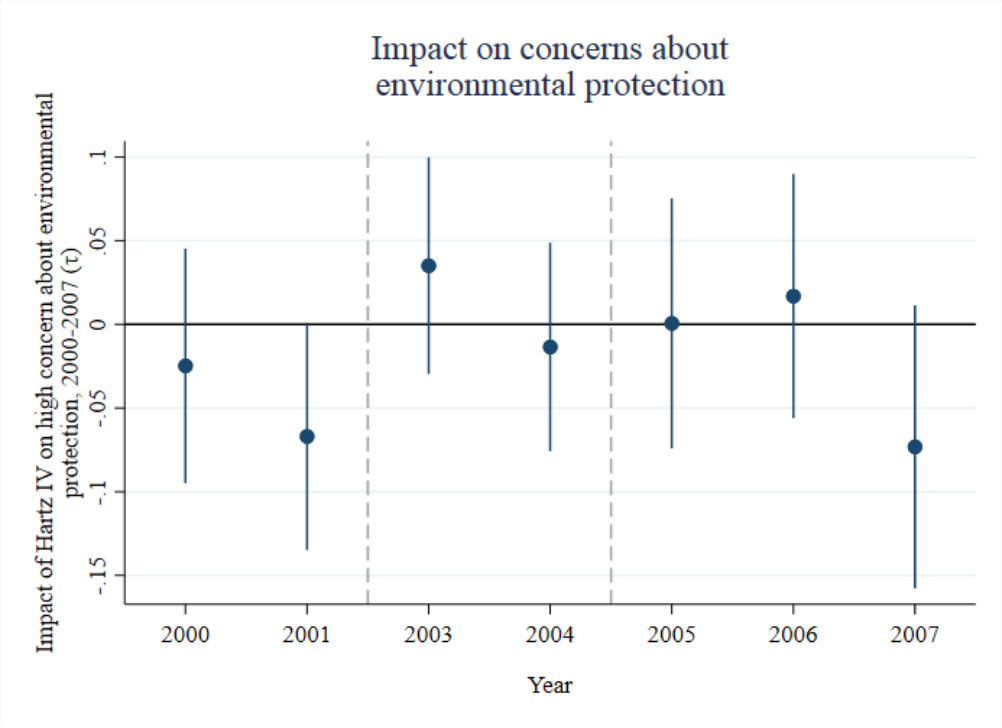


Figure 13: Treatment effect year interactions on concern about peace



GSOEP. Main sample. Including individual and year fixed effects. Tails show 5% significance level.

Figure 14: Treatment effect year interactions on concern about the environment



GSOEP. Main sample. Including individual and year fixed effects. Tails show 5% significance level.

Figure 15: Treatment effect year interactions on concern about crime in Germany

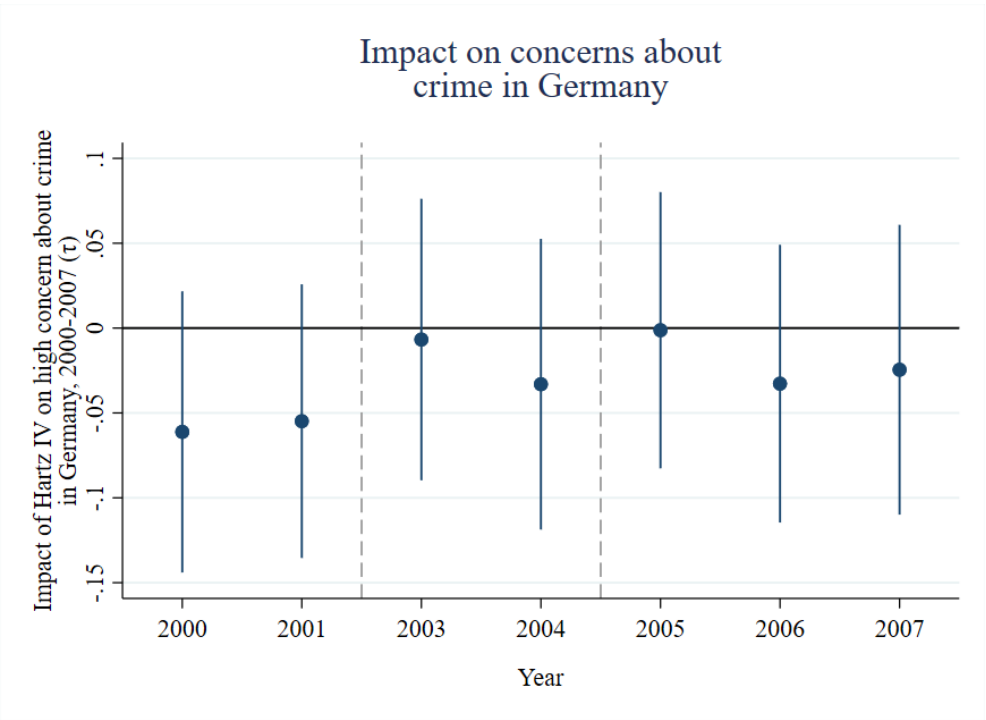
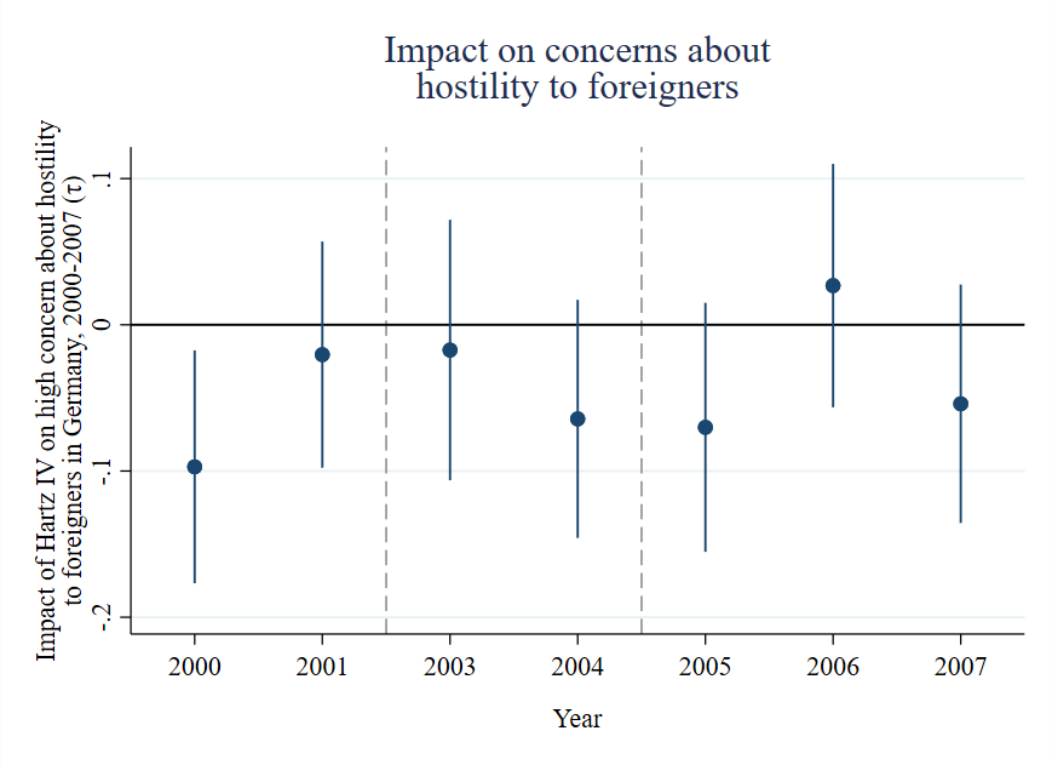


Figure 16: Treatment effect year interactions on concern about hostility to foreigners in Germany



3.4.4. Effect heterogeneity

Considering the heterogeneity of the treatment effect, I present results which look at differences by region (east vs west), age group, and educational attainment (using ISCED 97 classifications) within different sub-groups, and with heterogeneity dummy variables interacted with the treatment effect in the main sample. Considering region, former east German states have experienced much higher unemployment rates than their western counterparts since reunification, and this may emphasise unemployed natives' sense of strain when benefits are cut. A difference in the treatment effect between regions may also be likely because of the different experience of immigration; prior to reunification older generations of East Germans "never had to deal with foreigners, and also didn't know how to once these foreigners started to show up after the wall came down" (Deutsche Welle (www.dw.com), 2020). The East has a much lower proportion of foreigners in the general population than the West, at 2% between 2000 and 2007 compared to 9-10% in the West (Statistisches Bundesamt (Destatis), 2021).

The heterogeneity of these results based on age and education level may also be interesting when considering the impact of an unemployment benefits reform. For example, while older respondents may react more strongly if they see their chances of re-entering the labour force before retirement as low and therefore expect to live on the lower benefit payment for longer, younger respondents may fear longer-term implications of the tightening of welfare policy in terms of greater job competition and lower wages. In addition, lower levels of education are generally associated with more negative immigration attitudes, but in this case higher skilled natives lost more from the Hartz IV reform due to the disconnection of the benefit from previous income, and possibly also from Germany's focus on high-skilled immigration in certain sectors.

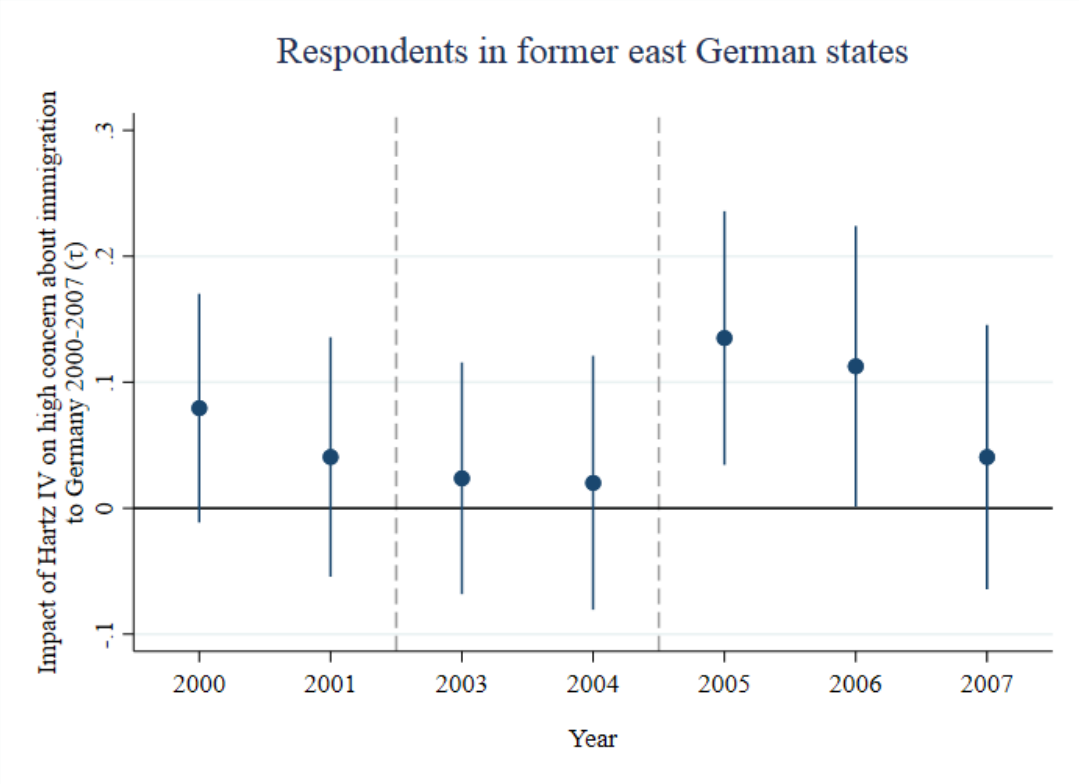
Figure 17, Figure 18, and Figure 19 show results for sub-groups where a statistically significant effect was found, while Table 8 shows the coefficients of the interaction between the treatment, year, and dummy variable for each characteristic using the main sample. I find a statistically significant treatment effect after the implementation of the reform in 2005 within the east Germany sub-group (Figure 17), however when considering the interaction results there is little evidence of a clear difference between the regions in terms of how the reform influenced attitudes to immigration (Table 8). The effect found in the east Germany sub-group is possibly because the vast majority of the

treatment group (people affected by long-term unemployment) are in former east German states (74.5%, compared to 20.7% of the control group).

Positive treatment effects in both 2005 and 2006 are found within the sub-group for respondents aged between 30 and 39 (Figure 18), and the results in column 4 of Table 8 which include an interaction dummy for those aged 30-39 are positive from 2004-2006, but these results do not provide statistically significant evidence. However, column 3 (with an interaction dummy for those aged 20-29) provides some evidence that the effect of the reform was stronger for those aged 30-55. These results suggest longer-term employment prospects of the young may not be the driver of this relationship, and instead the reform could have influenced those in the middle of their career, who may have had higher incomes and skill levels before becoming unemployed. However, this group includes people anywhere between 10 and 35 years away from retirement and may simply suggest that the reform had little effect on the attitudes of those in their 20s. As younger people are generally found to have more positive attitudes towards immigration (Card et al., 2005; O'Rourke and Sinnott, 2006) this finding would not be particularly surprising.

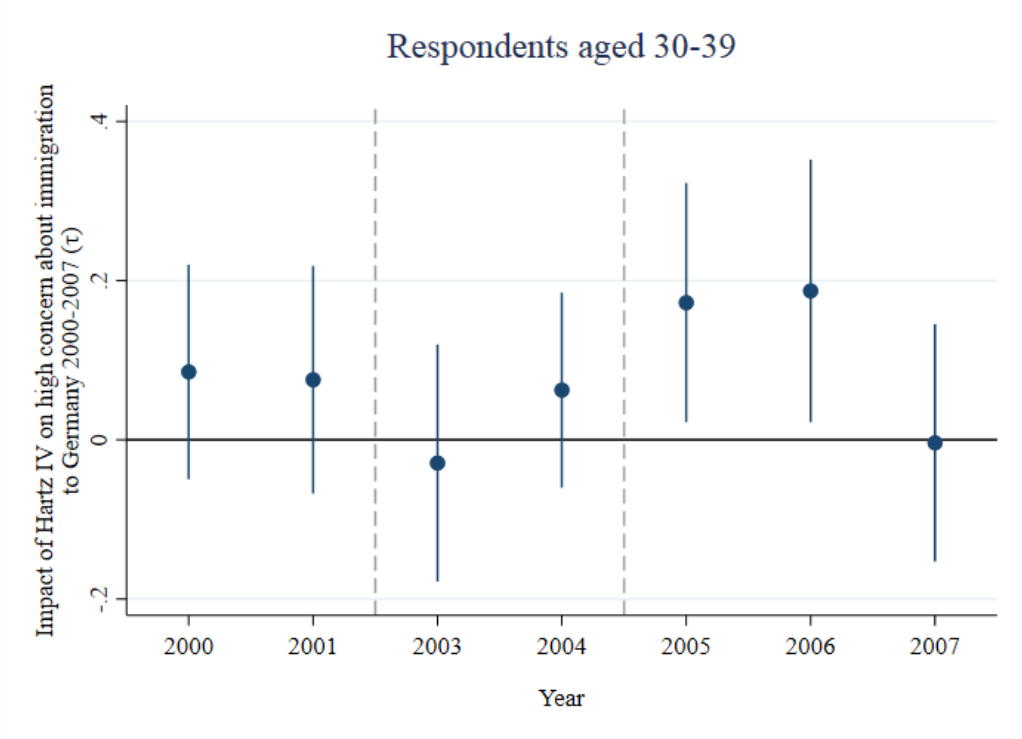
Finally, I find the Hartz IV reform led to greater concerns about immigration for those with the highest education levels (university degree and above) (Figure 19). This result is supported in column 9 of Table 8 where results including an interaction dummy for having a higher education qualification shows a treatment effect of 0.219 in 2005 and 0.220 in 2006, while negative treatment effects are found in column 8 for those with 'high vocational' education qualifications. This may reflect the fact that the Hartz reform particularly punished those who had higher salaries before becoming unemployed, meaning higher skilled respondents may have stronger reactions to the reform. This result provides some evidence that a personal financial or economic shock can cause increases in concern about immigration, and may challenge the welfare strain hypothesis, as no significant effects are found for lower skilled natives who arguably would be more anxious about potential strain on the welfare system from immigrants. It is important to note however, that as immigration policy in Germany around this time was aimed at attracting highly skilled workers to the country, this may have contributed to high skilled natives response to the benefits cut and accentuated tensions.

Figure 17: Treatment effect year interactions for respondents in former east German states.



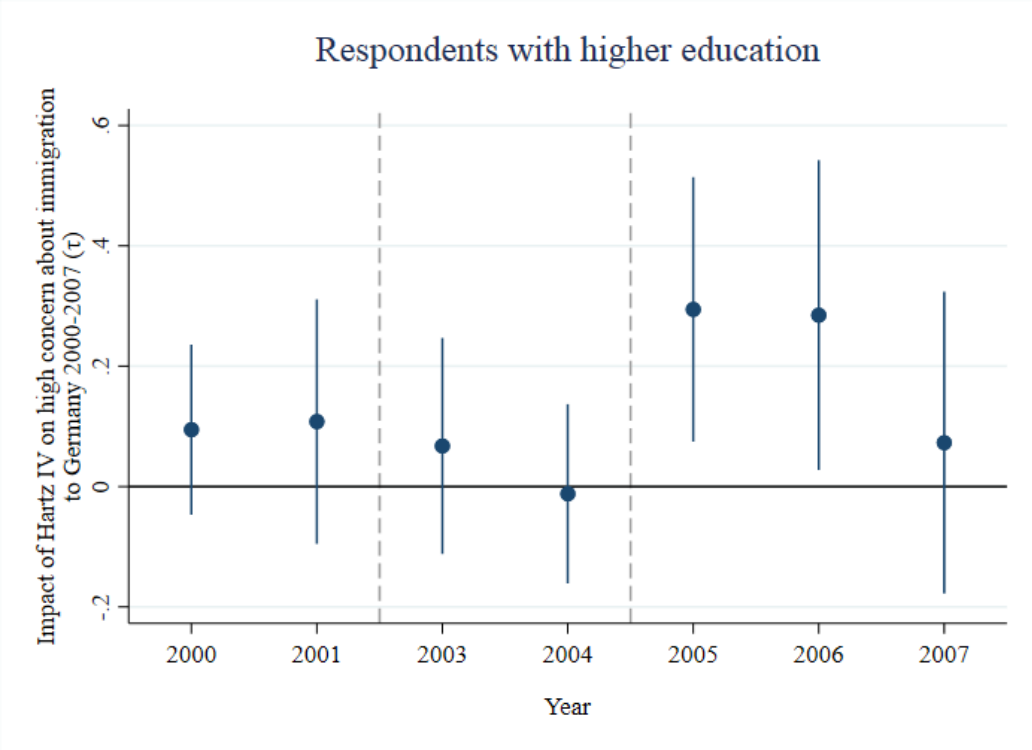
GSOEP. Main sample. Including individual and year fixed effects. Tails show 5% significance level.

Figure 18: Treatment effect year interactions for respondents aged 30-39



GSOEP. Main sample. Including individual and year fixed effects. Tails show 5% significance level.

Figure 19: Treatment effect year interactions for respondents with higher education



GSOEP. Main sample. Including individual and year fixed effects. Tails show 5% significance level.

Table 8: Heterogeneity dummy interaction results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treat * dummy interaction * year (base = 2002)									
year = 2000	-0.016	0.016	0.036	0.021	-0.030	0.080	-0.000	-0.115	0.032
	(0.092)	(0.092)	(0.109)	(0.083)	(0.076)	(0.111)	(0.078)	(0.148)	(0.083)
year = 2001	0.017	-0.017	-0.144	0.020	0.044	-0.013	0.075	-0.044	0.049
	(0.091)	(0.091)	(0.148)	(0.087)	(0.083)	(0.111)	(0.082)	(0.149)	(0.112)
year = 2003	-0.008	0.008	-0.108	-0.050	0.088	-0.058	0.110	-0.233*	0.067
	(0.102)	(0.102)	(0.130)	(0.090)	(0.083)	(0.115)	(0.083)	(0.135)	(0.101)
year = 2004	-0.109	0.109	0.011	0.095	-0.083	-0.016	0.076	-0.271**	0.003
	(0.095)	(0.095)	(0.141)	(0.082)	(0.082)	(0.123)	(0.086)	(0.135)	(0.089)
year = 2005	-0.092	0.092	-0.201*	0.094	0.005	0.069	-0.061	-0.316*	0.219*
	(0.104)	(0.104)	(0.114)	(0.092)	(0.086)	(0.111)	(0.088)	(0.177)	(0.121)
year = 2006	0.012	-0.012	-0.096	0.130	-0.070	-0.075	-0.032	-0.062	0.220
	(0.101)	(0.101)	(0.125)	(0.100)	(0.092)	(0.127)	(0.095)	(0.109)	(0.140)
year = 2007	0.013	-0.013	-0.112	-0.048	0.089	-0.064	0.037	-0.050	0.048
	(0.105)	(0.105)	(0.124)	(0.093)	(0.087)	(0.126)	(0.093)	(0.150)	(0.136)
Dummy interaction:	West Germany	East Germany	Aged 20-29	Aged 30-39	Aged 40-55	Education: None / Elementary	Education: Mid Vocational	Education: High Vocational	Education: Higher Education
Observations	28,305	28,305	28,305	28,305	28,305	28,305	28,305	28,305	28,305
R-squared	0.018	0.018	0.018	0.018	0.018	0.019	0.019	0.018	0.019
No. respondents	3,145	3,145	3,145	3,145	3,145	3,145	3,145	3,145	3,145

Standard errors clustered by respondent in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

GSOEP data, 2000-2007. Main sample of respondents. Aged 20-55 at 2005 interview date and able to work. Treatment: In household including long-term unemployed adult 2003-2005. Control: In household with no unemployed adults and at least one full-time employed adult 2000-2007. Estimates show the interaction effects between treatment, a dummy variable based on respondent characteristics, and each year from 2000-2007, using 2002 as the base year. All estimates include individual and year fixed effects.

3.5. Conclusions

This chapter has provided causal evidence that a personal financial shock in the form of a cut to unemployment benefits can influence increases in concern about immigration. The Hartz IV reform in Germany, which amounted to significant changes in both the eligibility of jobseekers to receive unemployment benefits and the amount they received is studied in this chapter as a natural experiment for the impact of a large-scale benefits cut. In order to estimate the causal effect of the reform on immigration concerns, individual-level panel data from GSOEP (German Socio-Economic Panel) are analysed with a difference-in-differences method including fixed effects, classing respondents as 'treated' if they live in a household with at least one adult who had been long-term unemployed from the announcement to the implementation of the reform (2003-2005).

The results provide evidence that treated respondents were around 10% more likely to report high concerns about immigration to Germany when compared to a control group of working age respondents in households with a stable employment history, or when compared to an alternative retired control group. Furthermore, the results using sub-samples based on education level, age and region show that significant effects are found amongst groups who may have been hit harder by the reform in terms of the size of the personal financial shock (highly educated individuals who experienced the greatest losses), existing high unemployment rates (those in former east German states) or due to being at a critical point in their career (aged 30-39). These results provide causal evidence to support existing descriptive evidence that personal financial shocks in the form of job loss and income loss are related to more negative immigration attitudes (Braakmann et al., 2017).

The findings presented in this chapter contribute to the literature on how economic strain and circumstances influence attitudes to immigration by providing evidence that alongside economic downturns and high unemployment (Medoff, 1999; Falk et al., 2011; Gang et al., 2013; Kwak and Wallace, 2018; Anderson et al., 2020), large-scale welfare cuts can also increase anti-immigration sentiments. The findings also contribute to the wide literature surrounding the role of economic self-interest in explaining negative attitudes to immigration, and provides new support for explanations involving perceptions of welfare strain, where natives more likely to be reliant on the welfare system are more concerned about immigrants increasing strain or restricting their access to the system. Much of the existing literature uses low income natives as a proxy for natives who would

be most likely to be reliant on the welfare system (Facchini and Mayda, 2009, 2012; Hainmueller and Hiscox, 2010), however the use of long-term unemployed natives who experience a loss to their unemployment benefits in this chapter provides new support for welfare strain theory.

There are some limitations to the approach taken in this chapter. Firstly, the treatment effect does not directly measure the impact of experiencing a cut in benefits, and instead acts as a proxy which measures the impact of being most likely to be financially hit by the reform (i.e. in a household affected by long-term unemployment). While this proxy allows for causal effects to be estimated through the use of GSOEP panel data and fixed effects, the true impact of Hartz IV (for example, as measured by amount of unemployment benefits received) on attitudes to immigration may be an interesting avenue for future research. It may also be interesting to consider whether amongst those affected, whether the severity of the individual losses further heightened concerns about immigration.

Secondly, the outcome variable used in this chapter is based on a question in GSOEP which asks respondent to select their concern level about immigration to Germany from the options 'very concerned', 'somewhat concerned' and 'not at all concerned'. While reporting higher concerns appears to be associated with more negative views on immigration, another limitation of this study is that this does not necessarily measure a desire to restrict immigration, or distaste for immigrants. It would be interesting to see how benefit cuts affect other measurements of anti-immigration or anti-immigrant attitudes, as well as concern levels about immigration.

Finally, the updates to German immigration policy, such as the introduction of the Immigration Act at the same time as Hartz IV, may interfere with some of the results of this chapter. While there are no apparent reasons that the changes in immigration would have affected unemployed Germans differently to employed Germans, it is possible that these changes may have made immigration a more salient issue at this time. Therefore, it would be beneficial for future research to explore different benefit reforms which do not coincide with immigration policy updates.

Chapter 4: The Impact of Austerity on Racially or Religiously Motivated Hate Crime in England and Wales

4.1. Introduction

During the 2010 general election in the UK, an "age of austerity" was promised by the Conservative party in response to the global financial crisis of 2008 (Conservative Party Speeches, 2009). Upon the election of a Conservative-Liberal Democrat coalition government, a comprehensive programme of reforms and cuts to benefits was formed and implemented beginning in April 2013. Another focus of the Conservative party in the lead up to the 2010 election was reducing immigration (Gietel-Basten, 2016). The salience of immigration as an issue eventually caused David Cameron, the Conservative party leader, to promise a referendum on the UK's membership to the European Union, a free-movement area.

A large amount of attention was given to the threat of immigrants and foreigners from the Leave campaign during the referendum debate, with immigrants being blamed for putting strain on the National Health Service, schools, and housing, and a slogan to 'take back control' which largely applied to immigration (Gietel-Basten, 2016). While localised increases in immigration rates have been associated with the decision to leave the EU (Goodwin and Milazzo, 2017; Viskanic, 2017), Gietel-Basten (2016) argues that the programme of austerity in the UK removed the ability of public spending to deal with the issues associated with high immigration and population growth, and led to the Leave vote victory.

A recent study (Fetzer, 2019) provides evidence that austerity welfare reforms played a causal role in UK voters' decision to leave the European Union, and makes the case that welfare cuts activate anger and political dissatisfaction for the 'losers' of globalisation. Given the strong links between the Leave result and underlying attitudes and concerns about immigration and multiculturalism, this chapter investigates the relationship between austerity and hostility toward minorities or immigrants. The research presented in this chapter shows evidence that austerity played a causal role in rises in the number of racially or religiously motivated (RRM) hate crimes being committed in England and Wales.

I create a panel of 314 Community Safety Partnership[12] (CSP) areas in England and Wales, consisting of data which provides the estimated impacts of specific welfare reforms which made up a large part of the austerity programme (Beatty and Fothergill, 2013), and police recorded crime data (Home Office, 2018b). I estimate a difference-in-differences model with a continuously varying treatment intensity in the form of loss (£) per working age adult from four welfare reforms, all implemented in April 2013. Results including CSP and year fixed effects as well as controls for variation in all other crime and the police workforce show for each £100 loss per working age adult racially or religiously motivated (RRM) crimes rose by approximately 15% in 2013/14, and the effect persisted in 2014/15 at a slightly lower magnitude (13%).

The results also show that this effect appears to be unique to RRM hate crime; No effects are found for non-RRM crimes or other types of crime such as violent crime and property crime. Hate crimes are distinguished by their basis in prejudice and discrimination, where "in-groups" and "out-groups" are cognitively formed to simplify and understand more complex social structures (Hall, 2013). Realistic group conflict theory is commonly used to explain rises in hate crime and predicts that deprivation and scarcity of resources lead to perceptions of competition between social groups, promoting a negative outlook on out-groups, which may develop into prejudice and hate crime (White, 1977; Bobo, 1983; Craig, 2002; Hall, 2013). Even in the absence of 'real' conflict or clearly defined conflicting interests between groups, competition and conflict can be created by perceptions of incompatible group interests. For example, minority groups may be perceived as labour market competitors who are "taking jobs away" from natives (Craig, 2002), or increasing the strain on the welfare state, and therefore become perceived to be the 'enemy' and subject to violence and hatred. In the case of austerity, the results presented in this chapter suggest that scarcity of resources caused by the welfare reforms may have led to increased perceptions of intergroup competition and prejudice and provided a catalyst for increases in RRM crime.

This chapter contributes to a varied body of literature which has found that the austerity programme had significant and detrimental impacts on individuals and communities,

[12] Community Safety Partnership areas refer to geographical areas over which representatives from the 'responsible authorities' (including the police) work together (*2010 to 2015 government policy: crime prevention*, 2015). CSP areas can be loosely mapped onto Local Authority areas using ONS lookup files (Office for National Statistics, 2016).

including increases in homelessness (Loopstra et al., 2016), reliance on food banks (Lambie-Mumford and Green, 2017), worsening mental health (Stuckler et al., 2017), self-harm (Barnes et al., 2016), and knock-on effects on education, health and life expectancy (Harris, 2014). Austerity has been accused of increasing "mental distress and marginalisation" in the UK (Cummins, 2018), and undermining the identity and sense of belonging of those who experience welfare cuts (Edmiston, 2017). It has also been shown that because the reforms disproportionately affected the most deprived areas in the UK, austerity led to even greater inequalities between the 'best' and 'worst' areas (Beatty and Fothergill, 2014). The results presented in this chapter show that the social impacts of austerity extend to increased racially or religiously motivated hate crimes, which have been shown to induce more prejudice and negative attitudes towards immigrants in general (Igarashi, 2020). This means that the more deprived areas of the country have not only suffered worse health, education, and economic outcomes, but have experienced greater divisions, prejudice, and hatred than areas which were less affected.

No studies to my knowledge have focused on the impact of welfare cuts or austerity programmes on hate crime, however economic conditions have been widely researched as a determinant of hate crime or general prejudice. Results from these studies are generally mixed and conflict with one another. Some studies consider the impact of higher unemployment rates on hate crime and right-wing extremist crime (Krueger and Pischke, 1997; Medoff, 1999; Falk et al., 2011), while others explore the impact of economic downturns and recessions on racism and racist hate crimes (Hovland and Sears, 1940; Green et al., 1998; Anderson et al., 2020). This chapter extends this area of the literature by considering the indirect impacts of these economic conditions. The austerity reforms were designed to get the UK's national debt under control after the 2008 financial crisis, however as this chapter shows, amongst many of the unintended consequences of these reforms were increases in threatening and abusive demonstrations of racial or religious prejudice, indicating serious divisions in society that policy makers should consider when designing future welfare policy.

4.2. Austerity Welfare Reforms

Following recent work on the impact of austerity on the decision to leave the EU (Fetzer, 2019), I use estimates from the Centre for Regional Economic and Social Research on the impact of the austerity-induced welfare reforms (Beatty and Fothergill, 2013). There are ten welfare reforms included in Beatty and Fothergill's (2013) welfare reform impact data, which are outlined below.

i. Housing Benefit – Under-occupation ('bedroom tax')

The reform of Housing Benefit to reduce benefits when under-occupying a social rented home was commonly referred to as the 'bedroom tax'. The reform was implemented on 1 April 2013 under the Welfare Reform Act 2012, and meant that working-age social tenants in receipt of Housing Benefit had their benefit entitlement reduced if "they live in housing that is deemed to be too large for their needs" (Wilson, 2017). The reform was extremely controversial and led to "several successful legal challenges" concerning "whether disabled children and adult couples should be required to share a bedroom, in addition to the question of whether very small room should be 'counted' as a bedroom" (Wilson, 2017).

ii. Household Benefit Cap

Total household benefits were capped at £500 per week for a family (£26,000 per year) and £350 per week for a single person with no children (£18,200 per year), meaning that households whose total benefits exceeded this amount experienced a reduction in their Housing Benefit entitlement (Kennedy et al., 2016). The Household Benefit Cap was included in the Welfare Reform Act 2012 and the Benefit Cap (Housing Benefit) Regulations 2012, and was fully implemented by September 2013 (Kennedy et al., 2016). The cap includes: Bereavement Allowance/Widowed Parent's/Mother's Allowance; Child Benefit; Child Tax Credit; Employment and Support Allowance; Housing Benefit; Incapacity Benefit; Income Support; Jobseeker's Allowance; Maternity Allowance; Severe Disablement Allowance; Widow's Pension; and Universal Credit.

iii. One per cent up-rating

For three years from 2013-14, main working age benefits were up-rated by one percent (instead of by CPI), and for two years from 2014-15 the same for Child Benefit and Local Housing Allowance within Housing Benefit (Beatty and Fothergill, 2013).

iv. Disability Living Allowance

Disability Living Allowance (DLA), was a non-means-tested benefit which provided "a cash contribution towards the extra cost of needs arising from an impairment or health condition", regardless of employment status (Department for Work and Pensions, 2010). In 2013/14, DLA was replaced with Personal Independence Payments (PIP) for people of working age (16-64) due to increasing numbers of cases and cost (Department for Work and Pensions, 2010). This involved the reassessment of benefit recipients, where many people who had been receiving DLA did not pass the PIP assessment and therefore stopped receiving these benefits (Turn2us, 2017)

v. Housing Benefit – Local Housing Allowance

The terms of Local Housing Allowance (LHA), a housing benefit that was previously capped at half local market rents, were tightened in the coalition's 2010 emergency budget. After the reform of LHA, it was calculated using the lowest *third* of local market rents (rather than the lowest half), weekly rent caps were put in place, it was capped at four bedrooms rather than five, and the age claimants were entitled to only shared accommodation rates rose from 25 to 35 years (Foster, 2016). Reforms to LHA were made between April 2011 and April 2013, when LHA rates were increased in line with CPI inflation rather than in line with rent levels (Wilson, 2013).

vi. Non-dependent deductions

Non-dependent deductions apply to households' benefit entitlement of Housing Benefit and Council Tax Benefit (as well as from the support provided within income-related benefits towards housing costs) if the home is shared between adults who are not partners (e.g. a grown-up son or daughter, or elderly relatives) (Department for Work and Pensions, 2011). From April 2011 to April 2014, there were staged increases in the rates of non-dependent deductions (Department for Work and Pensions, 2011).

vii. Council Tax Benefit

The localisation of support for council tax from 2013-14 and cut of funding by 10% (Adam and Browne, 2012). Among the expected effects of the reform was a reduction in incentives for councils to "facilitate low-value housing development", and councils "discouraging low-income families from living in an area" (Adam and Browne, 2012).

viii. Child Benefit

Child benefits were frozen from 2011/12 for three years, and in January 2013 there was a withdrawal of benefit from households which included someone who earned £50,000 or more (Beatty and Fothergill, 2013).

ix. Incapacity Benefits

The transition from Incapacity Benefits to Employment and Support Allowance (ESA) was begun by Labour in late 2008, with a new eligibility test, the Work Capability Assessment (Adams et al., 2011). ESA provides "financial support and personalised help for people who are unable to work, because of a health condition, with an emphasis on what people can do, as well as what they are unable to do" (Adams et al., 2011). When the coalition government came to power, they decided to reassess the majority of the remaining Incapacity Benefit recipients, aiming to "help thousands of people move from benefits and back into work if they are capable while giving unconditional support to those who need it" (Department for Work and Pensions and Hoban, 2012).

People who were found capable of work were invited to claim Jobseeker's Allowance (JSA) (Job Centre Plus and Department for Work and Pensions, 2013), and in practice the reform led to "appeals, large backlogs, and the eventual effective collapse of the assessment system" and has been described as "the biggest single social policy failure of the last 15 years" (Portes, 2015).

x. Tax Credits

Tax credits are based on household circumstances and can be claimed jointly by members of a couple, or by singles. Entitlement is based on age, income, hours worked, number and age of children, childcare costs, and disabilities. From 2011/12 onwards there were adjustments to thresholds, withdrawal rates, supplements, income disregards and backdating provisions (Beatty and Fothergill, 2013).

I use four welfare reforms in the analysis of this chapter: Housing Benefit – under occupation ('bedroom tax'); Household Benefit Cap; One per cent up-rating; and Disability Living Allowance. These reforms were all initially implemented in April 2013, as opposed to some other reforms which had already begun before or after the main austerity programme which allows for a clearer cut before/after analysis of the impact

of these reforms. Despite its implementation in April 2013, I exclude the reform of child benefit due to its focus on higher income households as opposed to the general focus of lower income households and those with health issues or disabilities. I also exclude the reform of Council Tax Benefit from the analysis due to the variation in how different local authority areas handled the localisation and cut in funding by 10% (meaning that the reform would have different implications for people in different local authority areas), and the longer term nature of the impacts (e.g. reduced incentives to build low-cost housing) (Adam and Browne, 2012).

4.3. Data and methodology

I create a panel data set providing the number of racially or religiously motivated (RRM) crimes recorded by the police and the estimated impact of four different austerity-induced welfare reforms across 9 years from April 2007 to March 2015 and 314 Community Safety Partnership (CSP) areas in England and Wales. CSP areas refer to geographical areas over which representatives from the 'responsible authorities' (including the police) "work together to protect their local communities from crime" (2010 to 2015 government policy: crime prevention, 2015). RRM crimes13 are published for each CSP area in England and Wales (Home Office, 2018b), and can be broken down into four key types of offence: assault (with or without injury); harassment; public fear, alarm, or distress; and criminal damage. While there may be other kinds of RRM crime committed, these crimes are recorded as RRM due to their distinctness from the same types of offences not motivated by race or religion (Home Office, 2018a).

Figure 20 shows that the most common types of recorded RRM crime in the data are 'public fear, alarm or distress'[14], followed by 'assault (with or without injury)', and that it was these types of RRM crimes that rose most significantly after the implementation of the welfare reforms in 2013/14. The log level of total RRM crime is used as the outcome measure in the analysis of this chapter, however I also estimate the impact of austerity on each of these individual categories of RRM crime.

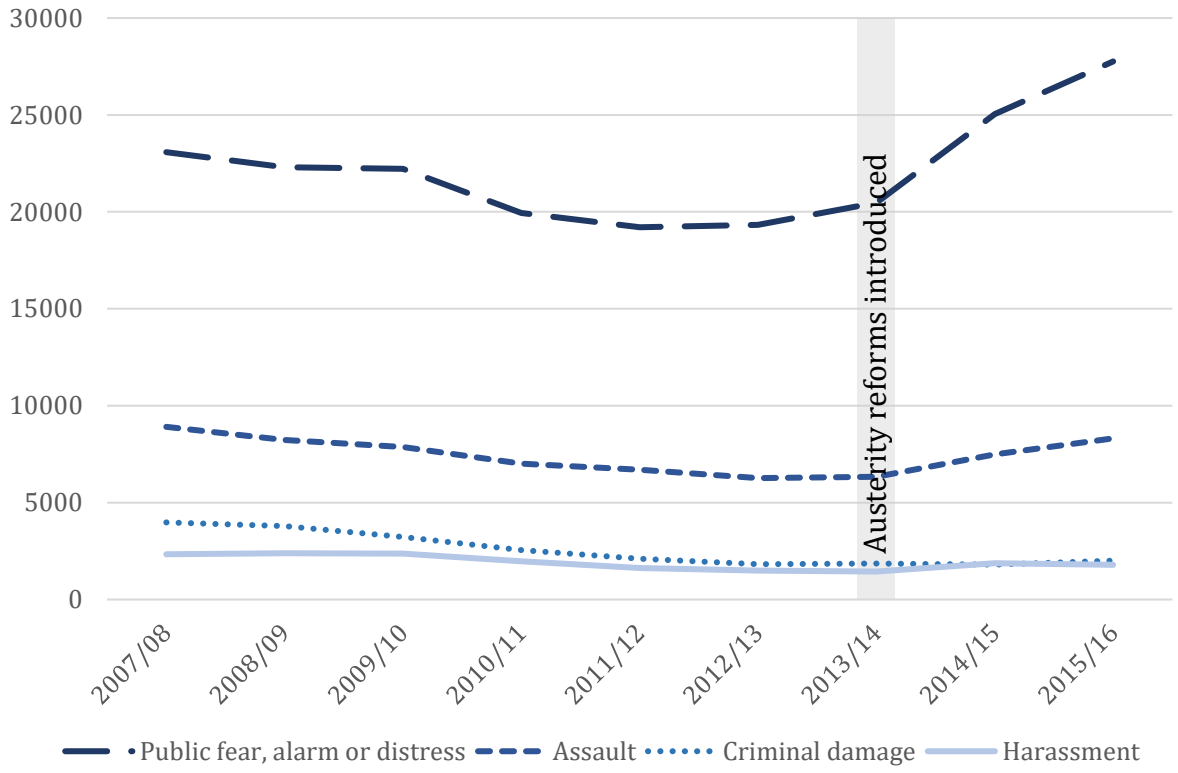
Looking at equivalent types of non-RRM crime in Figure 21, we see that 'public order offences' (equivalent to 'public fear, alarm, or distress') are relatively less prevalent than for RRM crime, whereas 'violence against the person' (assault) and 'criminal damage and arson' are more prevalent. However, this data does show that there were increases in these non-RRM crimes when austerity was introduced, particularly for 'violence against the person'. Figure 22 compares these types of crime with their RRM equivalent and shows similar trends for non-RRM and RRM crime over the period, with criminal damage/criminal damage and arson sharing a very similar downward trend, and both assault/violence against the person and public fear, alarm or distress/public order

[13] Due to ambiguity in separating crime motivated by race or religion, the data does not distinguish between the two.

[14] Racially or religiously motivated public fear, alarm or distress offences can include abusive racist language, threats based on a person's race or religion (or directed towards an ethnic group), and displaying threatening, abusive, or insulting signs or other written material towards a racial or religious group.

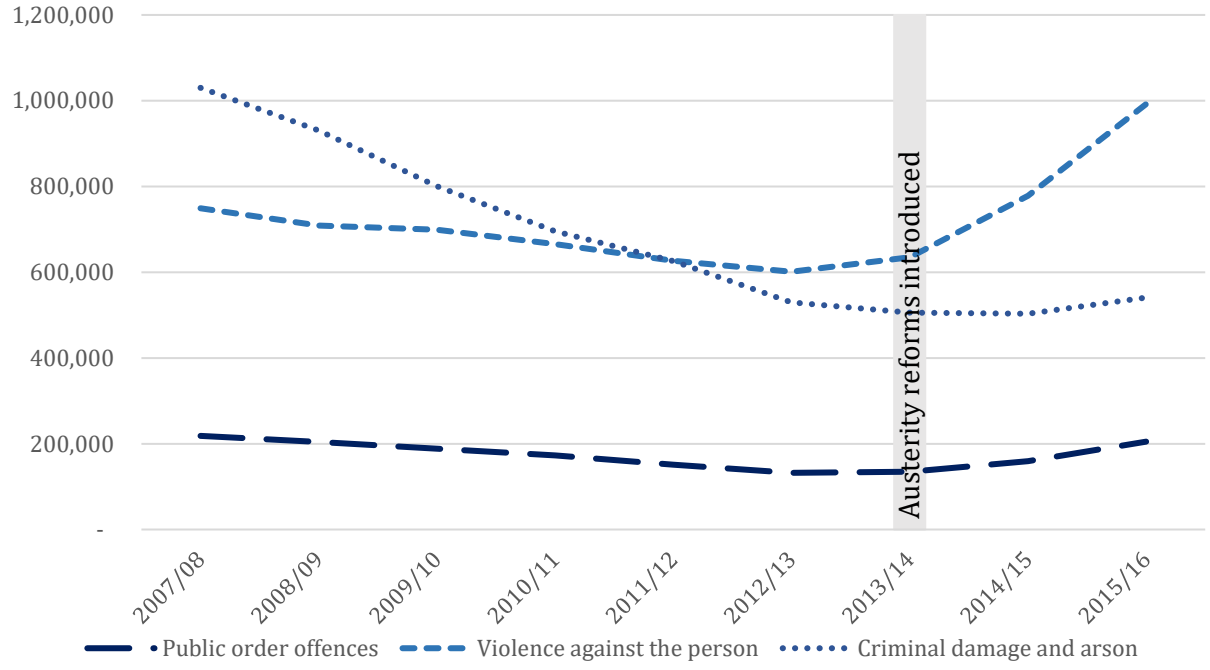
offences showing slightly different trends which both increase around the time austerity was introduced. These trends emphasise the importance of controlling for general crime trends when estimating the impact of austerity on RRM crime.

Figure 20: Types of RRM crime in England and Wales, 2007-2016.



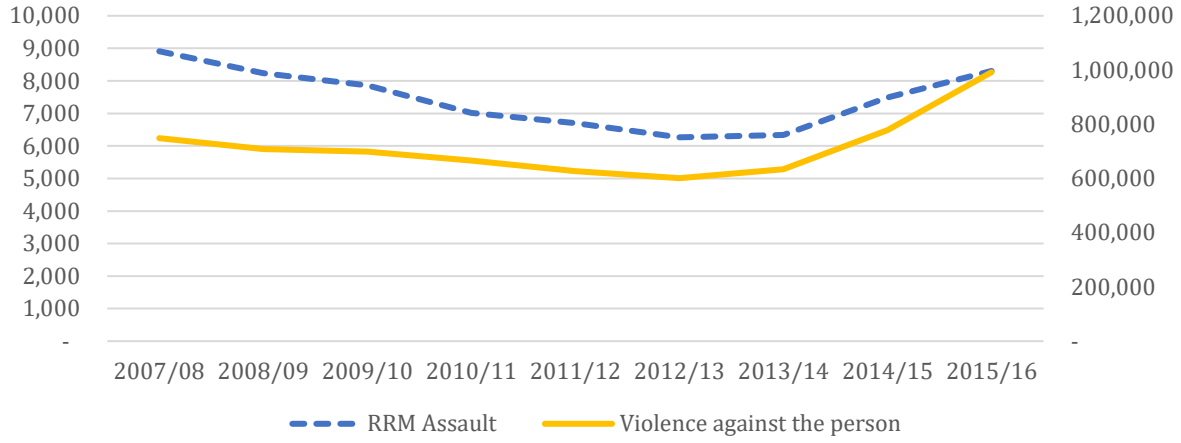
Source: Home Office (2018), police recorded crime open data tables

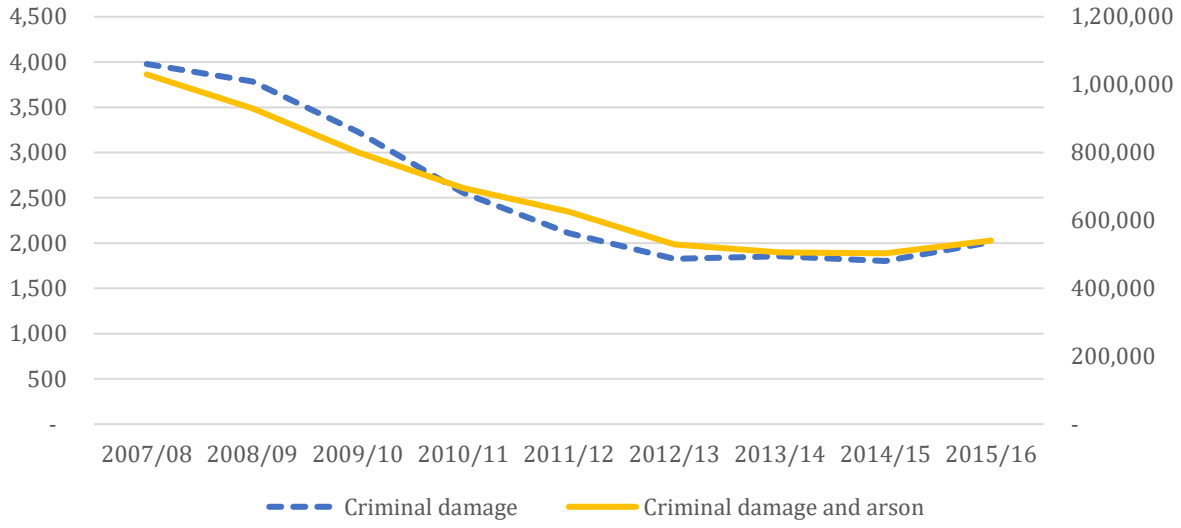
Figure 21: Types of non-RRM crime in England and Wales, 2007-2016.

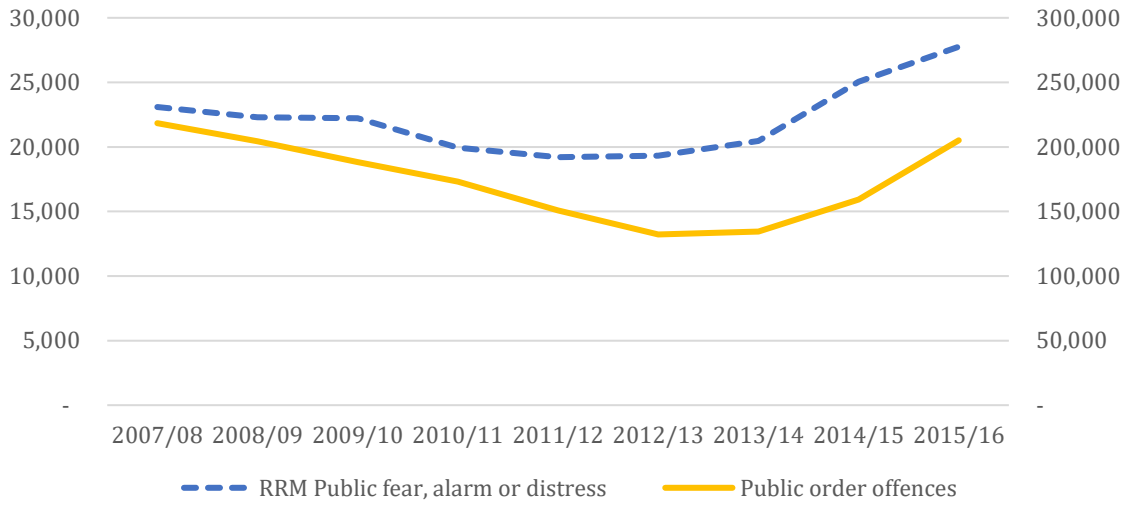


Source: Home Office (2018), police recorded crime open data tables

Figure 22: Comparing types of RRM and non-RRM crime.







Source: Home Office (2018), police recorded crime open data tables

The impact of austerity is measured using data on the estimated financial impact of several reforms from Beatty and Fothergill (2013) using the number of benefit claimants in each area alongside official government statistics on the overall financial savings from each reform, impact assessments and spending in each area. For each local authority in England and Wales, this data provides estimates for the total financial loss per working age adult when the reforms came into full effect[15] in terms of public spending associated with each reform. These estimates are scaled down by 100 to better interpret the results. I aggregate this data using population weighted averages to CSP level and merge with the police recorded crime data[16]. Table 9 provides information on the main groups of people affected by each reform in the austerity programme, the estimated losses and the number of households affected.

[15] Beatty and Fothergill estimate this as 2014/15 for most welfare reforms, however incapacity benefits and the 1 per cent up-rating estimates use 2015/16 and disability living allowance estimates use 2017/18.

[16] CSP areas in England and Wales do not directly correspond to local authorities but can be loosely mapped using ONS lookup files (Office for National Statistics, 2016).

Table 9: Estimated impact of austerity-induced welfare reforms by 2014/15

	Main characteristics of affected	Estimated loss £m p.a.	No. of households / individuals affected
Implemented April 2013			
Key reforms			
Housing Benefit - Under-occupation ('bedroom tax')	Low income or claiming benefits; Renting (social); Low savings	490	660,000
Household Benefit Cap	Claiming higher levels of benefits	270	56,000
1 per cent up-rating [2]	Claiming any benefits	3,430	N/A
Disability Living Allowance [1][3]	Disability, care, or mobility issues	1,500	*500,000* [1]
Council Tax Benefit	Low income - depending on council	340	2,450,000
Child Benefit	All households with children; High income (over £50,000)	2,845	7,600,000
Implemented prior to 2013			
Incapacity Benefits [1][2]	Ill or disabled	4,350	*1,250,000* [1]
Tax Credits	Low income	3,660	4,500,000
Local Housing Allowance	Low income or claiming benefits; Renting (private); Low savings	1,645	1,350,000
Non-dependent deductions	Low income or claiming benefits; Renting; Low savings; Adults living with their grown-up children	340	300,000

Source: Beatty and Fothergill (2013) 'Hitting the poorest places hardest - the local and regional impact of welfare reform'

[1] Individuals affected; all other data refers to households

[2] By 2015/16

[3] By 2017/18

I estimate a fixed effects panel difference-in-differences regression using a continuously varying treatment intensity (Card, 1992; Neumark and Wascher, 1992; Dolton et al., 2012, 2015; Braakmann and McDonald, 2020) consisting of scaled total loss (£) per working age adult from four welfare reforms which exploits differences in the local impact of austerity assuming that a zero treatment effect would be found in areas with no losses from austerity. The estimation equation is as follows:

$$(1)\ \log(y_{it}) = \alpha + \beta * TL_i + \tau_1 * (TL_i * 1\{T_i = 2013/14\}) + \tau_2 * (TL_i * 1\{T_i = 2014/15\}) + \delta X_{it} + \gamma T_t + I_i + \varepsilon_{it}$$

Where y_{it} is the number of RRM crimes committed in year *t* in CSP area *i,* the log level of which is taken to provide the outcome variable (no year and CSP combination yields zero RRM crimes), TL_i represents (scaled) total loss (£) per working age adult in CSP area *i* which acts as the continuous treatment variable, X_{it} represents time varying control variables (all other crime, police workforce numbers, working population, proportion of population who are white UK nationals and proportion of population who are male aged 16-24) in year t in CSP area i, and γT_t and I_i are year effects and CSP fixed effects respectively. τ_1 and τ_2 represent the causal impact of austerity on changes in racially or religiously motivated hate crime. The continuously-varying treatment intensity in this model allows the impact of differences in the losses associated with austerity to be studied across the spectrum, without creating a relatively arbitrary cut-off point that would try to mimic a traditional binary treatment group. However, for robustness, a binary treatment and control group are created, and the treatment effects are compared to the main results. The binary treatment group consists of CSP areas which experienced total losses (£) per working age adult in the top quartile of all CSP areas, and the control group consists of all other CSP areas.

To control for variation between different CSP areas and time-specific shocks or aggregate trends I include both CSP fixed effects and year fixed effects in my analysis. As decisions on police funding and priorities are made at Police Force Area (PFA) level, rather than at CSP level, I also estimate the model including PFA-specific linear time trends to capture differences between the budgets and focus of different police forces. I use PFA-specific linear time trends as opposed to PFA year interaction dummies due to the low numbers of CSP areas in some PFA areas (see appendix 7.2.1).

However, there are some measurement issues to consider. Firstly, in England and Wales, a crime is classified as a hate crime if it is perceived to be motivated by a characteristic

(such as race, religion, or sexuality) by the victim, or any other person (Hall, 2013). In reality the classification of crimes by law enforcement can be ambiguous and subjective (Gale et al., 2002). Secondly, the data used in this study relies at least in part on voluntary reporting which may not reflect the true level of hate crime (Gale et al., 2002). It should be noted that hate crimes are typically under-reported compared to other forms of crime (Gale et al., 2002) and therefore the effect of austerity on hate crime may in fact be greater than estimated in this analysis. For both these issues, it is important that there is no correlation with the treatment intensity (i.e. strength of impact of austerity in an area). It is plausible that areas which were more greatly affected by austerity would be subject to different policing funding and focus than more affluent areas or might have lower community trust in the police (for example, in areas with a higher proportion of ethnic or religious minorities) and therefore under report potential hate crimes. However, the inclusion of fixed effects in the main model should remove the influence of pre-existing differences between the CSP areas, and there are no reasons to my knowledge that would cause areas hit harder by austerity to see an increase in reporting of hate crime above other areas without the actual level of crime increasing. In addition, the inclusion of Police Force Area specific linear time trends in the analysis should mitigate any bias stemming from differences in police funding and focus.

Finally, it is important to note that the data on the impact of austerity used in this chapter is based on estimates made before the true impact was realised. However, while benefit claimant numbers have generally decreased, rankings of local authority areas by number of benefit claimants were largely unchanged between 2013 and 2016 (see appendix 7.2.1). Given that the analysis in this chapter is based on the comparative impact between different areas of England and Wales, these estimates can therefore provide a good representation of the relative impact of the reforms between areas of England and Wales.

Table 10 shows sample means for the constructed data set from 2007/08 to 2014/15 for all CSP areas, those in the 25% worst affected binary treatment group, and all other CSP areas. These means show that areas amongst the worst affected by austerity had on average higher levels of recorded RRM crimes across the whole period. This group are also associated with higher populations, a higher proportion of urban areas, a slightly smaller white majority, lower median income, and lower employment rates than areas less affected by austerity. Given that areas in this group would represent some of the least

affluent areas in England and Wales with higher proportions of those in need of support from the government these results are unsurprising.

Table 11 provides sample means by region of England and Wales. These results show that CSP areas in Greater London stand out in multiple ways from CSP areas in other regions of England and Wales. On average, CSPs in Greater London have much higher levels of RRM and all crime per 1,000 working age population, higher populations, consist of only urban areas, and have much higher proportions of minority populations. For this reason, I will check the results using the whole sample of CSP areas against those excluding Greater London to understand if any effects are driven by this stand-out region rather than more typical regions in England and Wales.

Aside from Greater London, the sample means show that higher levels of RRM crime (per 1,000 working age population) are found in the West Midlands, North West, and Yorkshire and the Humber, while higher levels of overall crime are found in Yorkshire and the Humber and the South West. Clearly, it is not the case that higher levels of hate crime are simply predicted by higher levels of any crime, and it is the purpose of this study to understand if austerity has played a role in the regional and local differences in numbers of RRM crimes being recorded by the police in England and Wales. These sample means also show that the average impact of the four welfare reforms considered in the main analysis of this chapter is £135 loss per working age adult by 2014/15. Between the regions of England and Wales, this impact varies from £178.30 per working age adult in the North East to £104.30 in the South East.

Table 10: Sample means, comparing CSP areas.

VARIABLES	(1) All CSPs	(2) Top quartile CSPs	(3) Other CSPs
RRM crime	106.273	174.394	83.758
	(137.677)	(203.521)	(97.500)
RRM crime per 1,000 population	0.895	1.104	0.826
	(1.324)	(0.659)	(1.473)
All other crime per 1,000 population	115.677	130.132	110.900
	(125.720)	(44.113)	(142.470)
Log RRM crime	4.111	4.688	3.920
	(1.062)	(0.972)	(1.021)
Total loss (£) per working age adult (00s) - key 4 welfare reforms	1.350	1.899	1.169
	(0.416)	(0.199)	(0.291)
Working population (000s)	108.014	137.797	98.170
	(73.262)	(92.808)	(62.516)
Urban	0.618	0.897	0.525
	(0.486)	(0.304)	(0.499)
Proportion white UK nationals[1]	0.861	0.830	0.872
	(0.154)	(0.193)	(0.138)
Police workforce	2,750.355	3,180.293	2,608.257
	(3,518.086)	(3,851.066)	(3,389.990)
Median income[2]	26,526.204	23,902.880	27,402.084
	(4,279.369)	(3,850.278)	(4,052.149)
Employment rate[3]	72.401	66.677	74.296
	(5.633)	(4.216)	(4.680)
Observations	2,512	624	1,888
Number of CSP areas	314	78	236

Beatty and Fothergill (2013), Home Office, ONS, and DEFRA.
Figures show sample means. Standard deviation given in parentheses.
RRM = racially or religiously motivated
[1] 2,197 observations (no observations in 2010/11)
[2] 2,433 observations
[3] 2,508 observations (some observations in 'City of London' CSP unavailable since the group sample size is zero or disclosive

Table 11: Sample means by region

VARIABLES	(1) All LAs	(2) Wales	(3) South West	(4) South East	(5) London	(6) East	(7) East Midlands	(8) West Midlands	(9) Yorksh. & the Humber	(10) North West	(11) North East
RRM crime per 1,000 working pop.	0.895	0.549	0.867	0.642	1.979	0.739	0.662	1.051	0.905	0.955	0.703
	(1.324)	(0.291)	(0.590)	(0.445)	(3.609)	(0.470)	(0.503)	(0.593)	(0.453)	(0.665)	(0.372)
All other crime per 1,000 working pop.	115.677	100.865	118.807	100.971	195.827	98.272	105.098	110.062	135.968	107.438	104.409
	(125.720)	(30.342)	(72.556)	(37.744)	(355.703)	(41.753)	(40.829)	(46.183)	(57.307)	(35.788)	(41.774)
Total loss (£) [1] (00s)	1.350	1.688	1.230	1.043	1.545	1.172	1.271	1.352	1.560	1.632	1.783
	(0.416)	(0.297)	(0.278)	(0.351)	(0.400)	(0.329)	(0.327)	(0.335)	(0.312)	(0.399)	(0.225)
Working population (000s)	108.014	87.141	114.340	81.379	168.730	79.531	72.560	128.033	203.928	115.145	138.213
	(73.262)	(44.032)	(80.886)	(29.801)	(46.941)	(25.698)	(42.290)	(124.274)	(112.680)	(73.920)	(72.470)
Urban CSP areas [2]	0.618	-	0.435	0.516	1.000	0.432	0.459	0.520	0.800	0.667	0.750
	(0.486)	-	(0.497)	(0.500)	(0.000)	(0.496)	(0.499)	(0.501)	(0.402)	(0.472)	(0.435)
Prop. ethnic minority [3]	0.109	0.034	0.045	0.088	0.384	0.088	0.071	0.106	0.090	0.080	0.048
	(0.130)	(0.032)	(0.036)	(0.079)	(0.141)	(0.080)	(0.097)	(0.108)	(0.084)	(0.083)	(0.040)
Prop. religious minority [3]	0.065	0.021	0.024	0.049	0.212	0.050	0.044	0.067	0.063	0.059	0.031
	(0.085)	(0.020)	(0.016)	(0.055)	(0.123)	(0.057)	(0.073)	(0.071)	(0.070)	(0.068)	(0.026)
Observations	2,512	176	184	512	264	352	296	200	120	312	96
No. of CSP areas	314	22	23	64	33	44	37	25	15	39	12

Beatty and Fothergill (2013), Home Office, ONS, and DEFRA.

- Data not available for Wales

RRM = racially or religiously motivated crime

[1] per working age adult – for 4 key welfare reforms

[2] Coded 'urban' in CSP area if (on average) local authorities across the area are 'Urban with City and Town', or more urban (DEFRA, 2016)

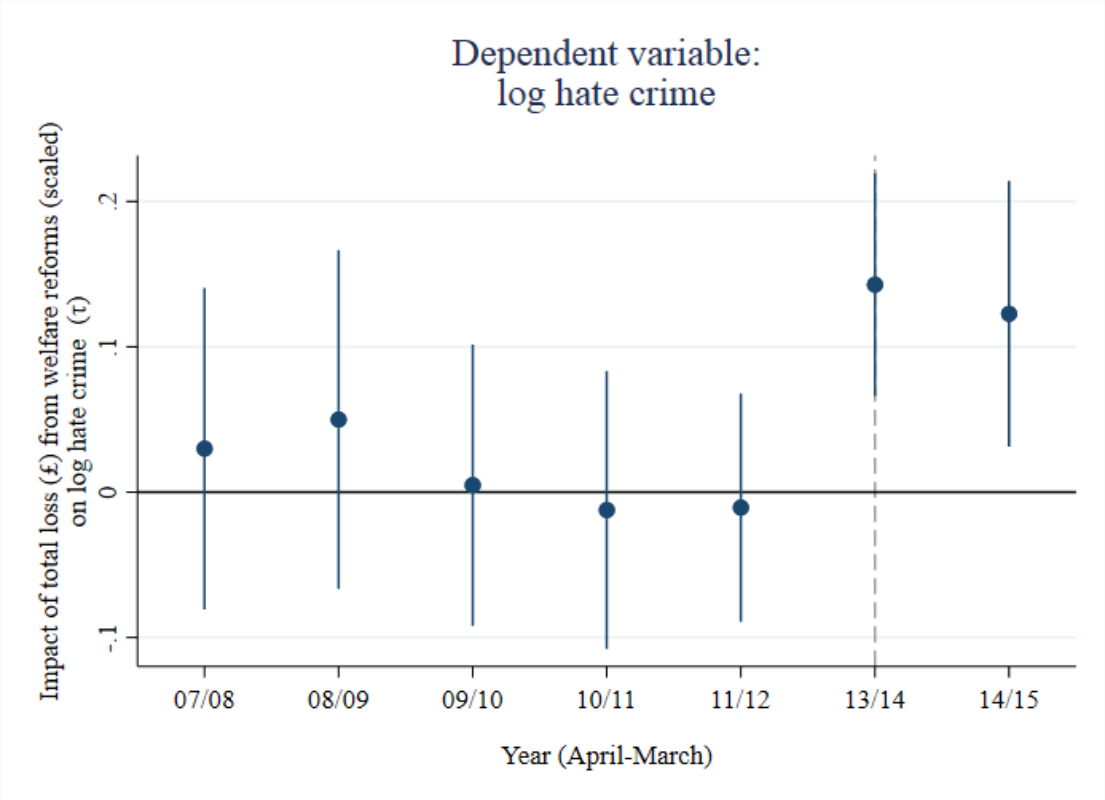
[3] Census data (2011)

4.4. Results

4.4.1. Impact of austerity on RRM crime

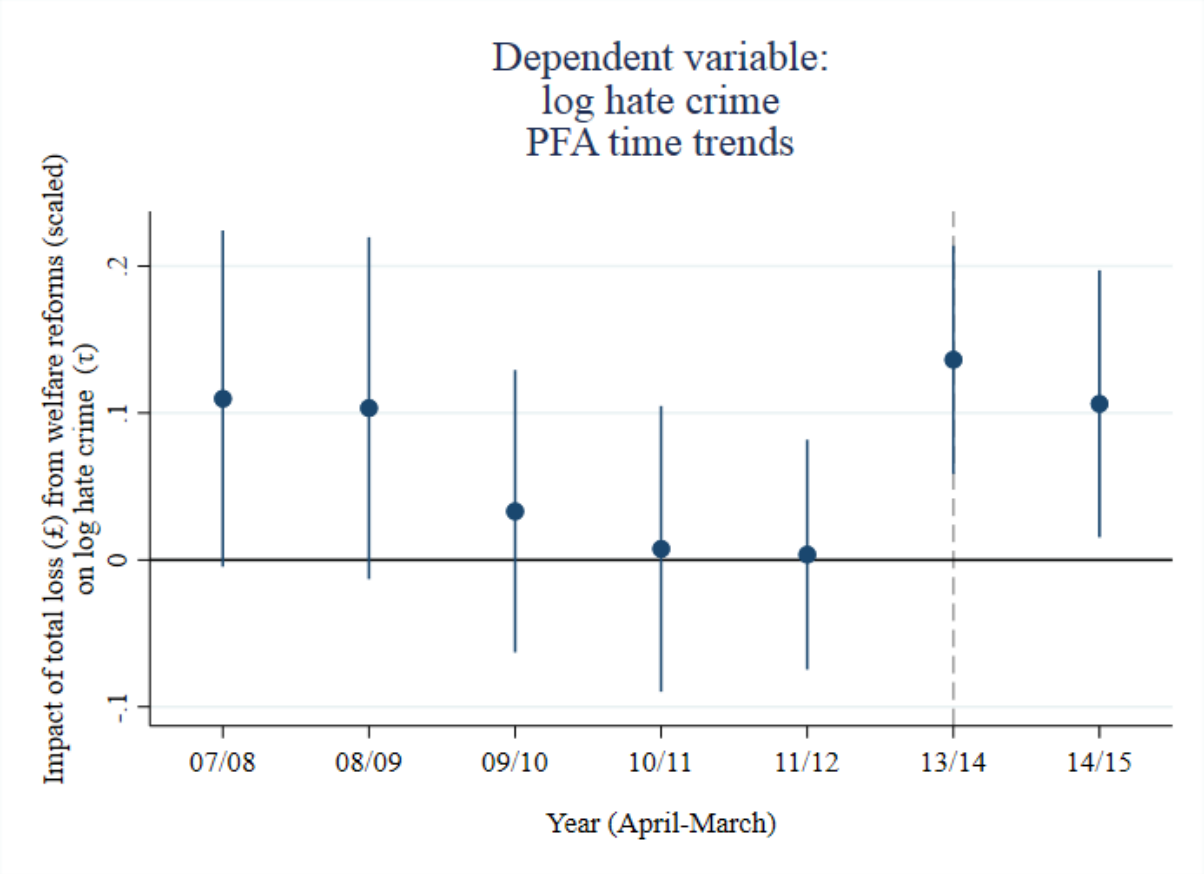
Figure 23 shows pre- and post-reform treatment effects, i.e. the effect of each £100 total loss (£) per working age adult from the four reforms (by 2014/15) on recorded number of RRM crimes in each year in the sample, both before and after these losses were realised. The results show that the size of the loss that CSP areas experienced due to the reforms implemented in April 2013 predicts greater RRM crimes being recorded after their implementation. Figure 23 also confirms the absence of any anticipatory effects or violation of the parallel trends assumption. Pre-treatment effects of austerity on racially or religiously motivated crimes are not significantly different to zero, however once the reforms were put in place in April 2013, the magnitude of total loss (£) per working age adult predicts an increase in RRM crimes, and this effect persists into 2014/15. Furthermore, Figure 24 shows that these results persist when including Police Force Area specific linear time trends, providing evidence that this relationship is not driven by differences in police funding or focus in each CSP area.

Figure 23: Impact of austerity on log RRM crime.



Treatment effect year interactions, pre and post reform.

Figure 24: Impact of austerity on log RRM crime including Police Force Area specific linear time trends.



Treatment effect year interactions, pre and post reform.

Table 12 provides estimates for the main model using the log level of RRM crime as the outcome variable (column 1), alongside results using other outcomes. Column 2 shows the results using inverse hyperbolic sine transformed RRM crime as the outcome variable, column 3 uses the outcome of log RRM crime per 1,000 working population, and column 4 uses the log of RRM crime as a proportion of total crime as the outcome. Across the different outcomes, the impact of austerity is broadly consistent. I use the log level of RRM crime shown in column 1 as the main outcome in this chapter and use the inverse hyperbolic sine when looking at specific types of RRM crime due to some areas with zero reports of these crimes in certain years.

Table 12 also shows results for an alternative binary treatment model in columns 5 and 6. Similar effects are found when using a traditional binary treatment consisting of CSP areas in the top quartile in terms of loss per working age adult (column 5), however

applying the main results using the continuous treatment to the average loss per working age adult experienced by the binary treatment and control groups, I find a greater difference of 12.5 percentage points. I also try a model using a binary treatment of CSP areas in the upper half (above the median) in terms of financial losses from austerity, and find similar results which are smaller in magnitude in 2013/14, but larger in 2014/15.

Table 13 shows results including controls for population and general crime trends. Column 1 shows the effect of austerity on the log level of RRM crime including individual and year fixed effects, but without any additional controls. Column 2 shows the results including controls for the working age population, proportion of males aged 16-24 living in a CSP area, proportion of white UK nationals living in a CSP area. Column 3 adds further controls for all other (non-hate related) crime, and the staff numbers in the police workforce to account for any police response to increases in crime. The impact including these controls remains positive and statistically significant but becomes slightly lower in magnitude as the controls are added to the model.

Column 3 shows that controlling for population and general crime trends, for each £100 loss per working age adult in cuts, the impact was a 14.68% (exp(0.137)-1) increase in RRM crime in 2013/14, and a 13.77% (exp(0.129)-1) increase in 2014/15. The magnitude of this effect is considerable given that across the whole sample the average total loss per working age adult was approximately £135. At the extremes, the difference in losses between the most affected CSP area (Blackpool) and the least affected CSP area (Wokingham) is over £200 per working age adult, and applied to this the four reforms would cause Blackpool to record an increase in RRM crime around 30 percentage points greater than Wokingham. According to the regional averages presented in Table 11, the most affected region (North East) on average saw increases 10.9 percentage points greater than the least affected region (South East).

Table 12: Impact of austerity reforms on different outcome measures of RRM crime, and with binary treatment

	Continuous treatment				Binary treatment group	
					Top quartile	Median
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Ln(RRM crime)	Inverse Hyperbolic Sine	Ln(RRM crime per 1,000 pop.)	Ln(RRM crime/total crime)	Ln(RRM crime)	Ln(RRM crime)
treat * 2007/08	0.036	0.036	0.057	-0.027	-0.001	0.008
	(0.056)	(0.056)	(0.056)	(0.063)	(0.055)	(0.048)
treat * 2008/09	0.041	0.041	0.055	-0.023	0.012	0.031
	(0.059)	(0.059)	(0.059)	(0.062)	(0.050)	(0.047)
treat * 2009/10	-0.022	-0.022	-0.007	-0.009	-0.016	-0.014
	(0.050)	(0.050)	(0.051)	(0.052)	(0.044)	(0.043)
treat * 2010/11	-0.028	-0.029	-0.018	-0.025	-0.049	-0.025
	(0.050)	(0.049)	(0.050)	(0.053)	(0.041)	(0.039)
treat * 2011/12	-0.012	-0.013	-0.022	0.012	-0.025	0.010
	(0.040)	(0.040)	(0.041)	(0.040)	(0.036)	(0.033)
treat * 2013/14	0.158***	0.158***	0.152***	0.133***	0.110***	0.085**
	(0.038)	(0.038)	(0.039)	(0.038)	(0.034)	(0.034)
treat * 2014/15	0.150***	0.150***	0.146***	0.116**	0.103***	0.138***
	(0.047)	(0.047)	(0.047)	(0.050)	(0.038)	(0.038)
Observations	2,512	2,512	2,512	2,512	2,512	2,512
R-squared	0.186	0.187	0.195	0.046	0.183	0.184
No. CSP areas	314	314	314	314	314	314

Standard errors in parentheses clustered by Community Safety Partnership. All estimates include CSP and year fixed effects.

*** p<0.01, ** p<0.05, * p<0.1

Continuous treatment = loss (£) per 100 working age adults of the bedroom tax, household benefit cap, disability living allowance reform and the one percent up-rating across all CSP areas.

Binary treatment = 1 if CSP area in the top quartile in terms of loss (£) per adult from four key reforms (as above).

Table 13: Impact of austerity reforms on log RRM crime, including control variables.

VARIABLES	(1)	(2)	(3)
treat * 2007/08	0.036	0.086	0.043
	(0.056)	(0.056)	(0.057)
treat * 2008/09	0.041	0.076	0.054
	(0.059)	(0.060)	(0.060)
treat * 2009/10	-0.022	0.004	0.011
	(0.050)	(0.050)	(0.051)
treat * 2010/11	-0.028	-	-
	(0.050)	-	-
treat * 2011/12	-0.012	-0.009	-0.024
	(0.040)	(0.040)	(0.041)
treat * 2013/14	0.158***	0.153***	0.137***
	(0.038)	(0.038)	(0.039)
treat * 2014/15	0.150***	0.143***	0.129***
	(0.047)	(0.047)	(0.047)
Working population		0.000***	0.000
		(0.000)	(0.000)
Prop. males aged 16-24		-1.471*	-1.131
		(0.777)	(0.781)
Prop. White UK nationals		-0.421	-0.381
		(0.304)	(0.318)
All other crime			0.000***
			(0.000)
Police workforce			-0.000***
			(0.000)
Observations	2,512	2,197	2,197
R-squared	0.186	0.224	0.250
No. CSP areas	314	314	314

Standard errors in parentheses clustered by Community Safety Partnership. All estimates include CSP and year fixed effects.

*** p<0.01, ** p<0.05, * p<0.1

Continuous treatment = loss (£) per 100 working age adults of the bedroom tax, household benefit cap, disability living allowance reform and the one percent up-rating across all CSP areas.

- Population statistics unavailable in 2010/11 so this pre-treatment year is omitted

Table 14 shows results for each type of RRM crime[17] and provides evidence that the results are driven by 'public fear, alarm or distress' crimes. Public fear, alarm, or distress crimes are the most common type of RRM crime, so it may be that other types of crimes were also affected, but not at a statistically significant level. Public fear, alarm or distress crimes tend to involve "threatening, abuse or insulting words or behaviour", or written and visual materials with the intention of threatening or provoking violence against a person or group. If hostility is demonstrated towards the victim's racial or religious group, or the crime is clearly motivated "by hostility towards members of a racial or religious group based on their membership of those groups", the crime will be categorised as a RRM public fear, alarm or distress crime (Home Office, 2020). These results therefore provide evidence that the causal relationship found between austerity and RRM crime is likely to have a basis in general hostility towards racial or religious groups and underlying negative attitudes or fear.

Column 3 shows an effect of a similar magnitude for racially or religiously motivated assaults, and although it is not statistically significant this may be due to the lower number of these crimes compared to 'public fear, alarm or distress' crimes. No significant treatment effects are found for criminal damage or harassment on the other hand. To test if there is any difference between the estimates in columns 2 and 3, I run these two specifications in the same regression, reshaping the data to combine the two different outcome variables (the inverse hyperbolic sine transformed RRM Public Fear, Alarm or Distress crimes, and RRM Assault crimes) into one outcome, splitting the observations for each CSP area in each year by subscript identifiers for the two outcomes. Using these results, I am unable to reject the null hypothesis that the coefficients for the impact of austerity on the two outcomes in 2013/14 and 2014/15 are the same, and therefore conclude that it is likely that RRM Assaults also play a role in the main result of this chapter. Austerity may have led to increases in violence between racial and religious groups as well as threat, abuse, and intimidation.

[17] When RRM crime is split into these types, there are observations where the number of these crimes is zero, therefore I have used the inverse hyperbolic sine transformation ($\log(y_i+(y_i^2+1)^{1/2})$ on the outcome variables rather than using logs as in the main results.

Table 14: Impact of austerity on different types of RRM crime (inverse hyperbolic sine transformed)

	(1)	(2)	(3)	(4)	(5)
VARIABLES	RRM crime	RRM public fear, alarm or distress	RRM assault	RRM criminal damage	RRM harassment
treat * 2013/14	0.142***	0.122***	0.118	0.094	0.103
	(0.038)	(0.043)	(0.083)	(0.121)	(0.128)
treat * 2014/15	0.124***	0.108*	-0.035	0.161	0.007
	(0.047)	(0.057)	(0.095)	(0.113)	(0.131)
Working population	0.000***	0.000***	0.000***	0.000***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Prop males aged 16-24	-1.146	-1.325	-1.489	-1.447	1.424
	(0.773)	(0.980)	(1.533)	(1.697)	(1.884)
prop. White UK nationals	-0.353	-0.913**	0.212	-0.086	0.212
	(0.297)	(0.431)	(0.484)	(0.742)	(0.714)
All other crime	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Police workforce	-0.000***	-0.000***	-0.000	0.000	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	2,197	2,197	2,197	2,197	2,197
R-squared	0.255	0.247	0.156	0.252	0.120
Number of CSP areas	314	314	314	314	314

Standard errors in parentheses clustered by Community Safety Partnership

*** p<0.01, ** p<0.05, * p<0.1

Beatty and Fothergill (2013), Home Office, and ONS. Reforms included in analysis: bedroom tax, household benefit cap, disability living allowance reform and one-percent uprating.

Continuous treatment = loss (£) per 100 working age adults of the bedroom tax, household benefit cap, disability living allowance reform and the one percent up-rating across all CSP areas.

4.4.2. Impact of individual reforms on RRM crime

I now estimate the impact for each individual reform included in Beatty and Fothergill's (2013) data. Table 15 provides the estimated treatment effects of each £1 loss per working age adult (not scaled as in the main results) for each reform. Due to variation in size of impact between the reforms, the estimates are applied to the sample means to provide estimated percentage increase in RRM crime due to each welfare reform for the average losses experienced by CSP areas. I find that all four reforms included in the main analysis had a positive impact on RRM crime in either 2013/14, 2014/15 or both post-austerity years. The 'bedroom tax' caused a 7.61% increase in RRM crime in 2013/14 for the average CSP area and had an even greater impact of 9.79% in 2014/15. The household benefit cap, which had the smallest impact in terms of loss (£) per working age adult and households affected, had no significant impact in 2013/14, but an average impact of 2.89% in 2014/15. It is important to note that while implementation began in April 2013, the cap was only fully implemented by September 2013 which may help explain the lack of impact in 2013/14.

The replacement of Disability Living Allowance (DLA) with Personal Independence Payments (PIP) appears to be responsible for a greater increase in RRM crime, and is associated with a mean 21.71% increase in RRM crime in 2013/14 when it was implemented, and a smaller increase of 14.47% in 2014/15. It is important to note that the estimates for loss (£) per working age adult for DLA is calculated up to 2017/18 due to the phased implementation of the reform, however these results do provide some indication that this health-related reform had some impact on RRM crime. Finally, the one percent up-rating is estimated to have caused a 16.44% increase in RRM crime in 2013/14 and 2014/15 for the mean CSP area. The impact of this reform could be interpreted as a general impact of austerity as it applied to *all* benefits recipients and is associated with large total losses.

It is possible however that the individual impacts of these reforms pick up the general or combined impact of austerity as well as the residual impact of the reforms excluded from the main analysis. For example, areas which were most harshly affected by the reform of DLA (i.e. areas with greater proportions of individuals with health conditions requiring support) would likely also be harshly affected by the reform of Incapacity Benefits. Table 15 shows similar results for these two reforms even though the reform of Incapacity

Benefits began to be implemented in 2011. Similarly, areas with a greater proportion of low-income households claiming housing benefit would be more likely to be affected by the 'bedroom tax' as well as the reform of Local Housing Allowance and non-dependent deductions.

I find no significant effect of the localisation and cut to funding for Council Tax Benefits, which is unsurprising given the ability for councils to internalise the cut and the longer term consequences of lower incentives to build low-cost housing (Adam and Browne, 2012). In addition, Table 15 presents evidence that the greater were losses (£) per working age adult in a CSP area as a result of the removal of Child Benefits for high-income households, the *lower* the number of RRM crimes recorded. While these results do not necessarily mean that the reform of Child Benefit *decreased* RRM crime, it does provide a good comparison against the main results. While the reform of Child Benefit had one of the greatest total impacts in terms of loss (£) per working age adult, the loss of resources in this case does not appear to trigger an increase in RRM crime. Instead, this reform which mainly affected higher income households may provide a mirror for the compound impact of the other reforms, all aimed at low-income or otherwise vulnerable households and areas.

Table 15: Impact of each reform on RRM crime.

Reform	Bedroom Tax	Household Benefit Cap	Disability Living Allowance	1 per cent up-rating	Council Tax Benefit	Child Benefit	Local Housing Allowance	Non-Dependent Deductions	Incapacity Benefits	Tax Credits
Reform date	Apr-13	Apr-13	Apr-13	Apr-13	Apr-13	Jan-13[1]	Apr-11	Apr-11	Oct-10	Apr-11
Avg. (mean) loss [2]	10.874	5.77	36.18	82.208	8.172	72.485	38.891	8.082	102.756	89.027
Treatment effects in 2013/14										
τ_1	0.007***	-0.001	0.006***	0.002***	0.000	-0.006***	0.000	0.025***	0.002***	0.002***
	(0.003)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.000)	(0.007)	(0.000)	(0.001)
τ_1 * Avg. loss[2]	0.076***	-0.006	0.217***	0.164***	0.000	-0.435***	0.000	0.202***	0.206***	0.178***
Treatment effects in 2014/15										
τ_2	0.009***	0.005**	0.004***	0.002**	-0.002	-0.001	0.001*	0.024***	0.001***	0.001
	(0.003)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.008)	(0.000)	(0.001)
τ_2 * Avg. loss[2]	0.979***	0.029**	0.145***	0.164**	-0.016	-0.072	0.039*	0.194***	0.103***	0.089

Beatty and Fothergill (2013), Home Office, and ONS. Standard errors in parentheses clustered by Community Safety Partnership. *** p<0.01, ** p<0.05, * p<0.1

τ_1 and τ_2 represent the causal impact of a £1 loss (per working age adult) from each reform on log racially or religiously motivated (RRM) crime in 2013/14 and 2014/15 respectively.

[1] Reform date refers to the withdrawal of child benefit for high income households, however the estimated losses also include a three year freeze beginning in April 2011.

[2] Estimated loss (£) per working age adult averaged (mean) over CSP areas in England and Wales (estimated by Beatty and Fothergill, 2013)

4.4.3. Investigating mechanisms

The above results provide significant evidence that austerity-induced welfare reforms caused increases in racially or religiously motivated hate crimes, however it is potentially unclear what mechanisms underpin this causal connection. This section aims to understand if the causal impact of austerity on racially or religiously motivated crimes presented in this chapter is a by-product of factors which would also increase more common types of crime, or if the effects are unique to RRM crime and more related to prejudice and intergroup tensions.

Realistic group conflict theory predicts that as resources become scarcer and deprivation is increased in communities, competition and conflict between groups will rise. Craig (2002) argues that "when people perceived minority groups are preventing them from obtaining desirable, though limited resources, prejudice toward those minorities is especially likely", and hate crimes are fuelled by the decline of social environments rather than the hatred and flaw of specific individuals. I hypothesise that the austerity programme increased hate crime and intergroup tensions in communities in England and Wales in this way, however it is important to consider and attempt to rule out alternative explanations that may explain the connection between austerity and rises in reported RRM crime.

Considering a more traditional model of crime, Becker's (1968) Rational Choice Model predicts that crime (particularly property crime) will increase if there is a reduction in the utility of being a law abiding citizen (e.g. if public spending and benefit payments are cut), if there is a decreased chance of being caught or punishments become more lenient (e.g. due to cuts to police funding), or if the utility from committing crime increases (e.g. greater hatred towards other races and religions, or greater financial rewards). It is possible that the austerity programme triggered increases in RRM through cuts to police funding, which have potentially increased general crime numbers (Dearden, 2018), or lower benefits payments which reduce incentives to remain a law abiding citizen. Given that hate crimes tend to be more brutal than property crimes, and involve damage or destruction rather than theft and profit (Medoff, 1999), if the increase in hate crime has been caused by a general change in incentives for potential criminals, similar effects should be observed for all types of crime, particularly for more potentially financially rewarding property crime.

Increases in hate crime may also be linked to violent and aggressive crimes specifically. Strain theory is commonly found to explain increases in violent crime (Blau and Blau, 1982; Krivo and Peterson, 1996; Kelly, 2000; Fajnzylber et al., 2002), where increases in inequality and deprivation lead to individuals being unable to meet their economic and social goals, creating 'strain' which incentivises violence as a means to "gain the materials and respect that allow them to acquire the social status society encourages" (Walters, 2011). In the case of austerity, it is possible that individuals in the worst affected areas who feel that their economic situation has become relatively worse could blame minorities and immigrants for their perceived economic strain, and therefore commit hate crimes against these groups.

This reaction may be particularly strong if an individual perceives that minorities are a threat or cause to their problems, or are relatively better off, where perpetrators may be willing to expend resources and reduce their own consumption as long as their victims become relatively worse-off (Gale et al., 2002). This explanation differs from realistic group conflict theory in that the conflict and blame towards minority groups is generated at an individual-level, rather than a group-level. In this scenario, while individual attitudes to minorities and immigrants are stable, one would expect both hate crime and violent crime to increase, and the individual attitudes of benefits recipients (i.e. those who feel the 'strain') towards immigrants to worsen.

I attempt to shed light on this mechanism in three key ways. Firstly, I look at national statistics on prosecution, convictions, and sentences for hate crimes to understand if there have been any noticeable changes in the chance of being caught or the severity of punishment in England and Wales. Secondly, I estimate the causal impact of the welfare reforms on different types of crime to see if austerity caused a rise in hate crime above that of crime in general, property crime, and violent crime. Thirdly, I gage the impact of austerity on individual attitudes towards immigrants and general levels of dissatisfaction or anger amongst benefit recipients, to understand whether benefits cuts caused a direct increase in anger and grievances of recipients.

Using data on the numbers of racially or religiously motivated crime recorded (Home Office, 2018b), and prosecuted (Crown Prosecution Service, 2018), I find that while recorded occurrences increased after the reforms were put in place, prosecutions have remained fairly stable, actually declining slightly (Figure 25). Assuming recorded hate

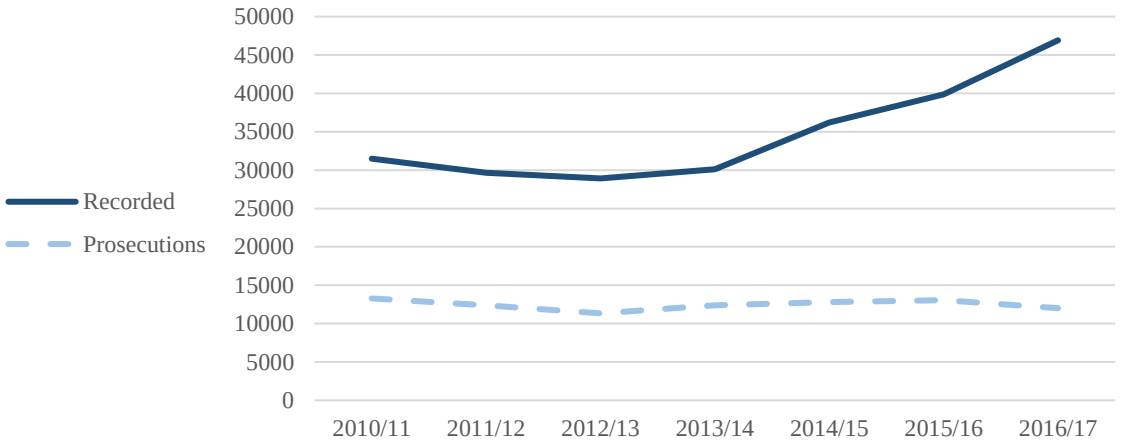
crime data reflects actual levels of hate crime, Figure 25 indicates that the prosecution rate has fallen since the implementation of austerity, and this could potentially explain the link between austerity and hate crime.

Figure 26 shows that, while the number of cases taken to court has largely been decreasing since 2010, the number of convictions has remained relatively stable. In addition, Figure 27 shows that the proportion of convicted defendants being given a prison sentence increased over the period, as did the number of fines, while convicted defendants being discharged decreased. These data show that while the prosecution rate (relative to recorded crime) has fallen, actual convictions of racially or religiously aggravated hate crimes have remained stable over the period, and sentences of those who are convicted have become harsher.

To check whether the increases in RRM crime as a result of austerity are unique to hate crime or indicative of wider increase in crime, I estimate the causal impact of the welfare reforms on all non-RRM crime, property crime, and violent crime. Figure 28-Figure 31 show the impact of austerity on hate crime, total crime excluding hate crime, violent crime, and property crime respectively. Due to the presence of significant pre-treatment effects for violent and property crime, I also present results including Police Force Area specific linear time trends and CSP area specific linear time trends in order to control for differences due to police funding or focus for example. These results show no significant evidence that the austerity programme caused similar increases in other non-hate related crime, violent crime, or property crime recorded by the police.

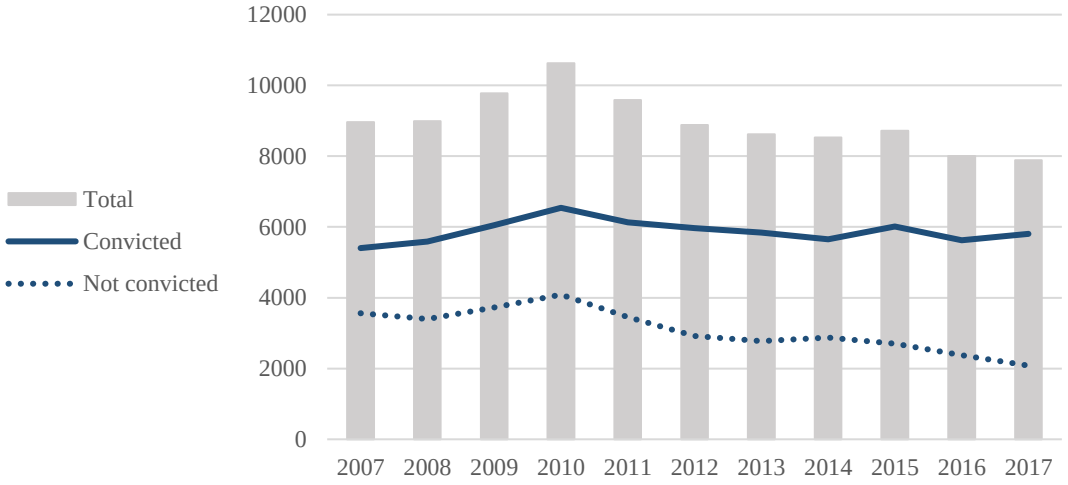
These results suggest that the causal impact of austerity on racially or religiously motivated crimes presented in this chapter is unlikely to be a by-product of factors which increase more common types of crime. Given the unique nature of hate crimes in comparison to other violent crimes (Craig, 2002), these results indicate that while factors such as greater inequality or reductions in police funding may have played a role, the impact of austerity on racially or religiously motivated crimes highlights an underlying impact on intergroup conflict and prejudice and rather than general anger, violence or opportunism.

Figure 25: RRM crime recorded and prosecutions by year.



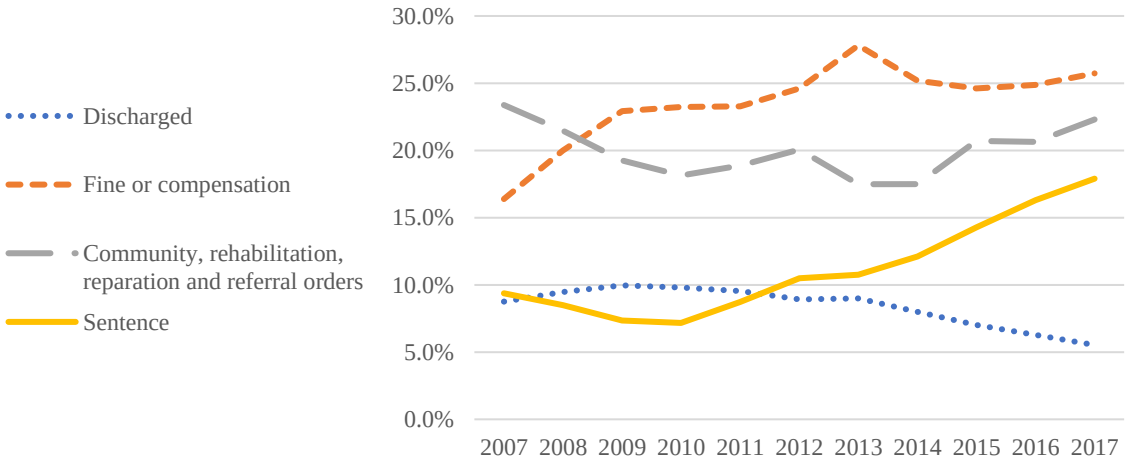
Sources: Home Office, Crown Prosecution Service

Figure 26: Conviction status of RRM crime defendants



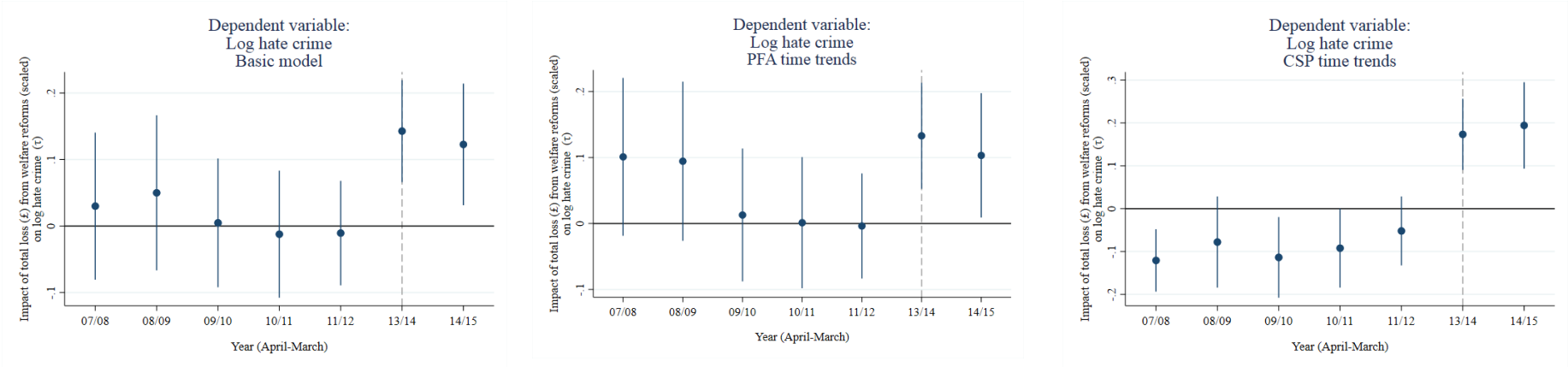
Source: Ministry of Justice

Figure 27: Type of sentence for RRM crime, 2007-2017



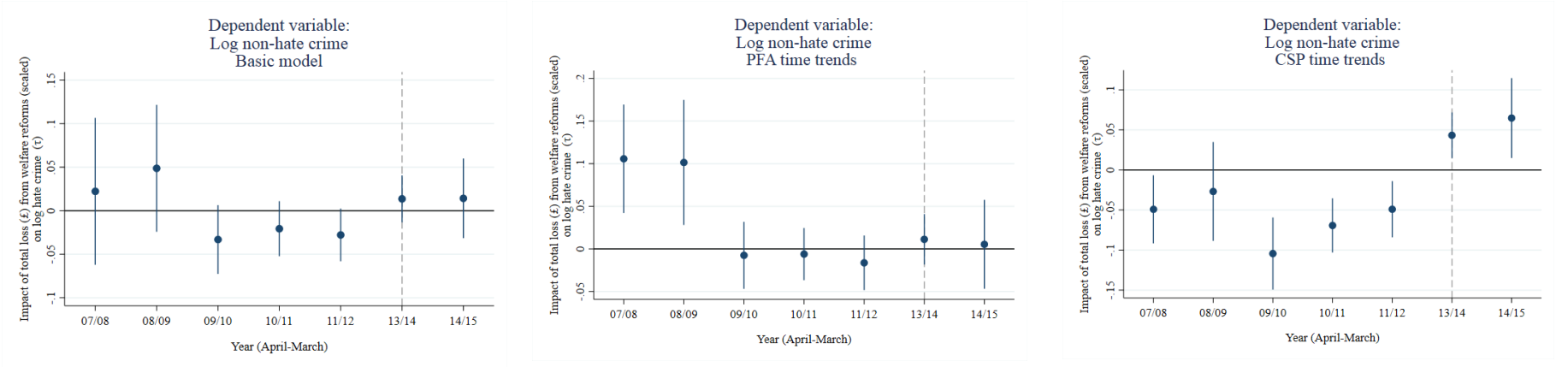
Source: Department of Justice

Figure 28: Impact of austerity on log RRM crime, model comparison.



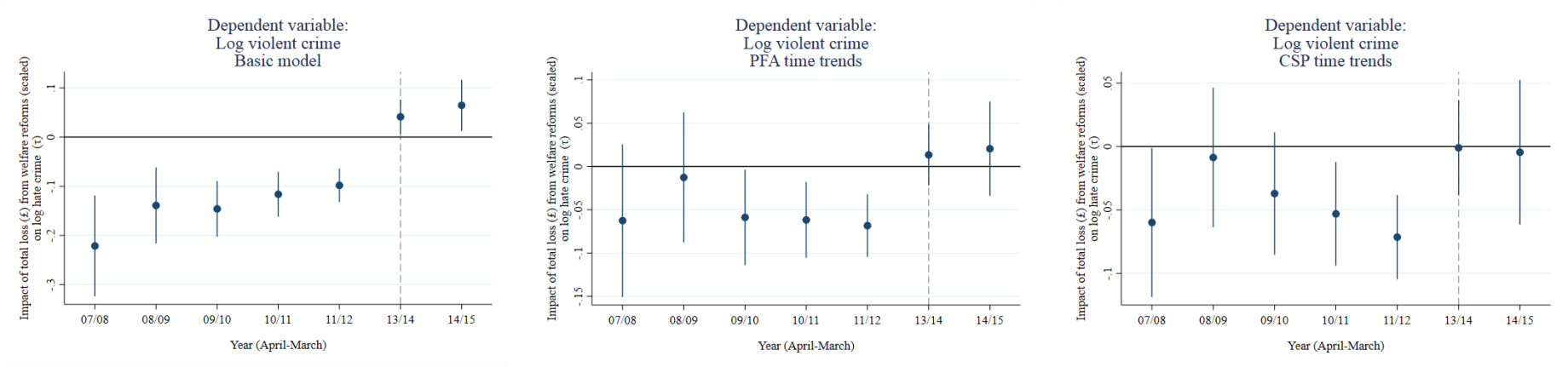
Treatment effect year interactions, pre and post reform. Shows basic fixed effects model, and models including Police Force Area and CSP specific linear time trends

Figure 29: Impact of austerity on log non-RRM crime, model comparison.



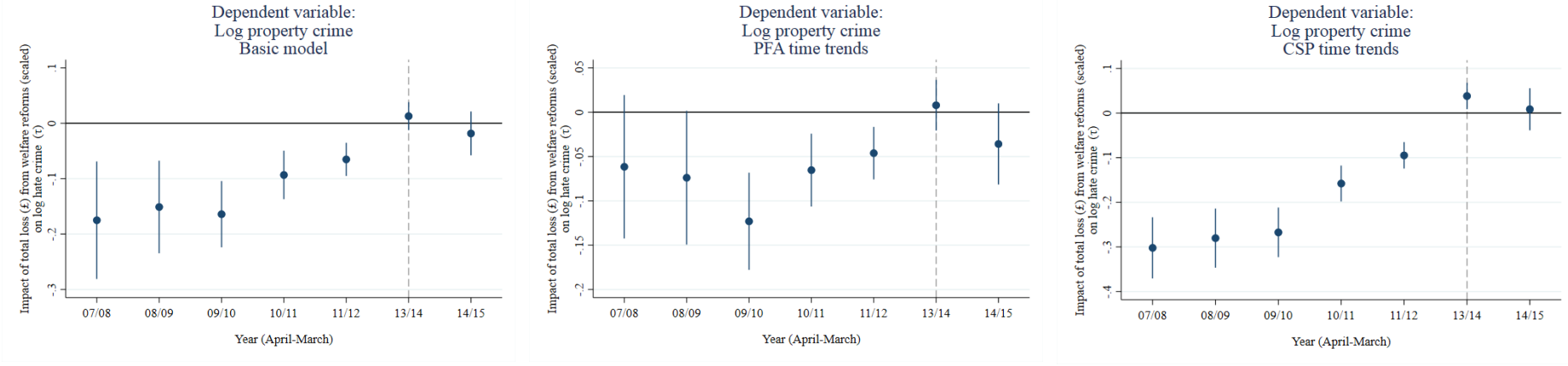
Treatment effect year interactions, pre and post reform. Shows basic fixed effects model, and models including Police Force Area and CSP specific linear time trends

Figure 30: Impact of austerity on log violent crime, model comparison.



Treatment effect year interactions, pre and post reform. Shows basic fixed effects model, and models including Police Force Area and CSP specific linear time trends

Figure 31: Impact of austerity on log property crime, model comparison.



Treatment effect year interactions, pre and post reform. Shows basic fixed effects model, and models including Police Force Area and CSP specific linear time trends

While it is not within the scope of this study to measure levels of anger in each area of England and Wales, I am able to analyse the impact of austerity on proxies for anger or opposition to foreigners at an individual level. I use individual-level panel data from Understanding Society (the UK Household Longitudinal Study), consisting of survey data from approximately 40,000 households in the UK. Using responses from individuals who were interviewed from 2010 to 2016 (waves 1 to 8), I apply the binary treatment from the main analysis (where treatment status is applied to areas in the top quartile of total losses (£) per working age adult from the key welfare reforms) to create a sample of working age respondents (16-64) living in the worst affected local authority areas.

To create proxy measures for individual anger, I use two different questions in the Understanding Society survey to create two dependent variables. Firstly, I take responses to a question asking about how satisfied the respondent is with life in general and create a binary variable which equals one if they respond either 'mostly' or 'completely dissatisfied'. For the second binary dependent variable I take responses from a question asking how often the respondent has felt 'calm or peaceful' in the past 4 weeks, which equals one if they respond 'little' or 'never'. I create a treatment group consisting of individuals receiving benefits in the worst affected local authorities (top quartile) compared to a control group of those not receiving benefits in the same group of local authorities, and use a difference-in-differences approach to estimate the impact of receiving benefits on anger and grievances.

Table 16 and Table 17 present the causal impacts of receiving benefits for those living in a 'treated' local authority on an individual reporting they are mostly/completely dissatisfied with life in general or feeling calm and peaceful little/none of the time respectively, and show no evidence that benefits recipients reported increased anger or grievances as a result of the austerity programme, with or without fixed effects. If anything, Table 16 shows some evidence that receiving benefits as a main source of income indicated a lower likelihood of being dissatisfied with life in general in 2014 when including year fixed effects in the model. These results suggest that the increase in RRM crime caused by austerity was not motivated by the grievances of benefits recipients themselves.

Secondly, I analyse the relationship between receiving benefits as the main source of income and attitudes towards immigrants over the reform period using the European

Social Survey (ESS) waves 4 to 8 (2008-2016). The ESS comprises of survey responses from individuals across Europe, dealing with attitudes, beliefs, and behaviour patterns. For this analysis, I consider the responses from individuals in Great Britain. To measure anti-immigrant attitudes, given that the focus of this study is racially or religiously motivated hate crime, I use a question asking how many immigrants of a different race or ethnic group from most people in the UK should be allowed into the country, coding responses as 'anti-immigrant' if they respond "allow none". I control for regions, age, gender, years in education, religion, and minority status.

While the benefits recipients were more likely to report anti-immigrant attitudes throughout the period, there does not appear to be any particular increase from 2014, and after 2014 there is actually a decrease in anti-immigrant views being reported across all respondents (Figure 32). Table 18 shows that receiving benefits as the main source of income does predict a greater likelihood of being anti-immigrant, but this likelihood did not substantially increase after the reforms had come into effect (post-2014).

These individual-level results have been used to attempt to understand the role played by the individual anger and grievances of those who were directly affected by austerity (benefits recipients) in its impact on RRM hate crime. These individual-level results show no evidence of benefit recipients themselves becoming more aggrieved, angry, or holding more negative views of immigrants of a different race or ethnicity when austerity was introduced. This provides further evidence against strain theory as an explanation for the main result of this chapter and suggests that if hate crimes were not driven by the individuals affected by austerity, a group-level mechanism may explain the results. It seems more likely, then, that the impact of austerity on racially or religiously motivated hate crimes is caused by underlying intergroup tensions created by scarcity and competition for resources (i.e. benefits), as predicted by realistic group conflict theory.

Table 16: Impact of benefits receipt on feelings of dissatisfaction, 2013-2015.

	(1)	(2)	(3)	(4)
Receiving benefits * 2013	0.039	-0.006	0.045	-0.006
	(0.029)	(0.029)	(0.030)	(0.029)
Receiving benefits * 2014	-0.015	-0.048*	-0.008	-0.049*
	(0.027)	(0.029)	(0.028)	(0.029)
Receiving benefits * 2015	0.036	0.021	0.043	0.020
	(0.030)	(0.029)	(0.030)	(0.029)
Constant	0.083***	0.088***	0.116	0.122
	(0.023)	(0.024)	(0.079)	(0.077)
Year fixed effects		✔		✔
Individual fixed effects			✔	✔
Observations	19,614	19,614	19,614	19,614
Number of individuals	2,802	2,802	2,802	2,802

Standard errors in parentheses clustered by individual
*** p<0.01, ** p<0.05, * p<0.1

Figures show impact of receiving benefits on the likelihood of reporting mostly or completely dissatified with life in general. All specifications include control variables for gender, age and education level. Sample consists of individuals living in 25% worst affected local authorities by the welfare reforms in terms of total loss (£) per adult.

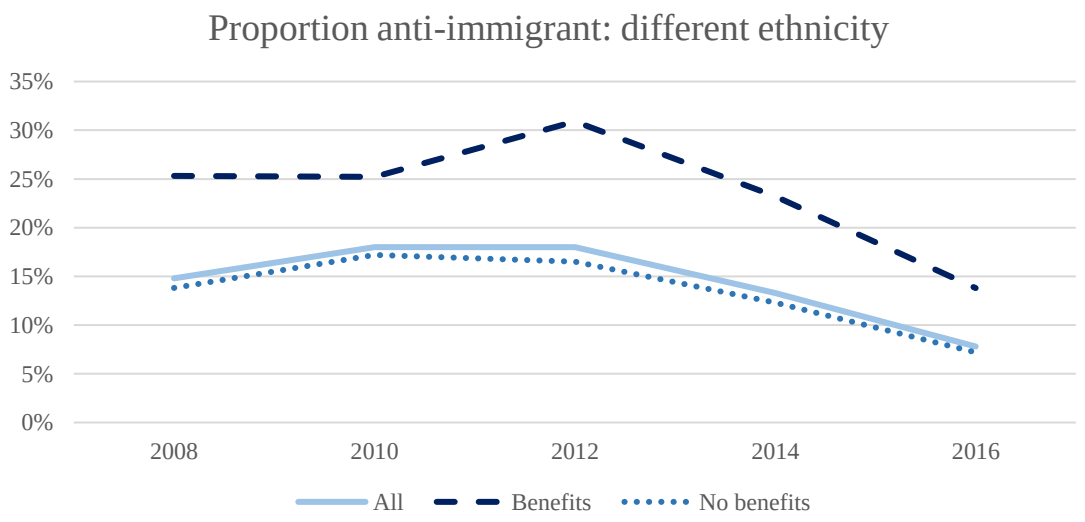
Table 17: Impact of benefits receipt on feeling calm and peaceful little or never.

	(1)	(2)	(3)	(4)
Receiving benefits * 2013	0.036 (0.039)	0.029 (0.036)	0.042 (0.039)	0.028 (0.037)
Receiving benefits * 2014	0.033 (0.040)	0.031 (0.039)	0.039 (0.040)	0.030 (0.039)
Receiving benefits * 2015	-0.031 (0.035)	-0.032 (0.037)	-0.025 (0.035)	-0.033 (0.037)
Constant	0.169*** (0.029)	0.178*** (0.029)	0.153*** (0.032)	0.159*** (0.033)
Year fixed effects		✔		✔
Individual fixed effects			✔	✔
Observations	19,614	19,614	19,614	19,614
Number of individuals	2,802	2,802	2,802	2,802

Standard errors in parentheses clustered by individual
*** p<0.01, ** p<0.05, * p<0.1

Figures show impact of receiving benefits on the likelihood of reporting feeling calm and peaceful none of the time. All specifications include control variables for gender, age and education level. Sample consists of individuals living in 25% worst affected local authorities by the welfare reforms in terms of total loss (£) per adult.

Figure 32: Proportion reporting anti-immigrant attitudes.



Source: European Social Survey.

Table 18: Impact of receiving benefits (main income source) on negative attitudes towards immigrants

Dependent variable: anti-immigrant (different ethnicity)	(1) 2008	(2) 2010	(3) 2012	(4) 2014	(5) 2016
Benefits main source of income	0.119***	0.103***	0.187***	0.119***	0.083***
	(0.032)	(0.031)	(0.033)	(0.032)	(0.029)
Constant	0.034	0.023	0.243	0.001	0.041
	(0.055)	(0.056)	(0.163)	(0.091)	(0.047)
Observations	2,102	2,091	1,976	1,978	1,714
R-squared	0.052	0.045	0.077	0.038	0.044

European Social Survey, waves 4-8. Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1
Impact of receiving benefits as main source of income on negative attitudes to immigrants of a different ethnicity as most people in the UK. OLS estimates. Control variables for region, age, gender, years in education, religion and minority status are included.

4.4.4. Further results

It may be that these results only apply when the sample includes both areas more likely to record high levels of hate crime (urban and diverse areas) and those less likely to record high levels of hate crime (rural and non-diverse). In addition, CSP areas in Greater London show much higher levels of both crime and police workforce and consist of much more urban and diverse areas on average. In order to rule out the possibility that these sub-samples are driving the results, I now estimate the impact of austerity on RRM crimes for CSP areas which: exclude Greater London; consist on average mostly of urban areas; and consist on average mostly of ethnically and religiously diverse areas.

Data on urban/rural classification from the Department for Environment, Food & Rural Affairs (2016) is used to code local authorities on a scale from 1 to 6, ranging from "Urban with Major Conurbation" to "Mainly rural". This data has been aggregated to the CSP area level, and all CSP areas who are on average less rural than "Urban with City and Town" are coded as rural, and the remaining CSP areas are coded as urban. Data from the 2011 Census is used to distinguish the proportion of non-white and religious (non-Christian) residents in each local authority (Office for National Statistics, 2012), this is also aggregated to the CSP level. A CSP area is coded as 'diverse' if 10% or more of its

population are non-white, *and* 5% or more of its population are religious (but not Christian)[18].

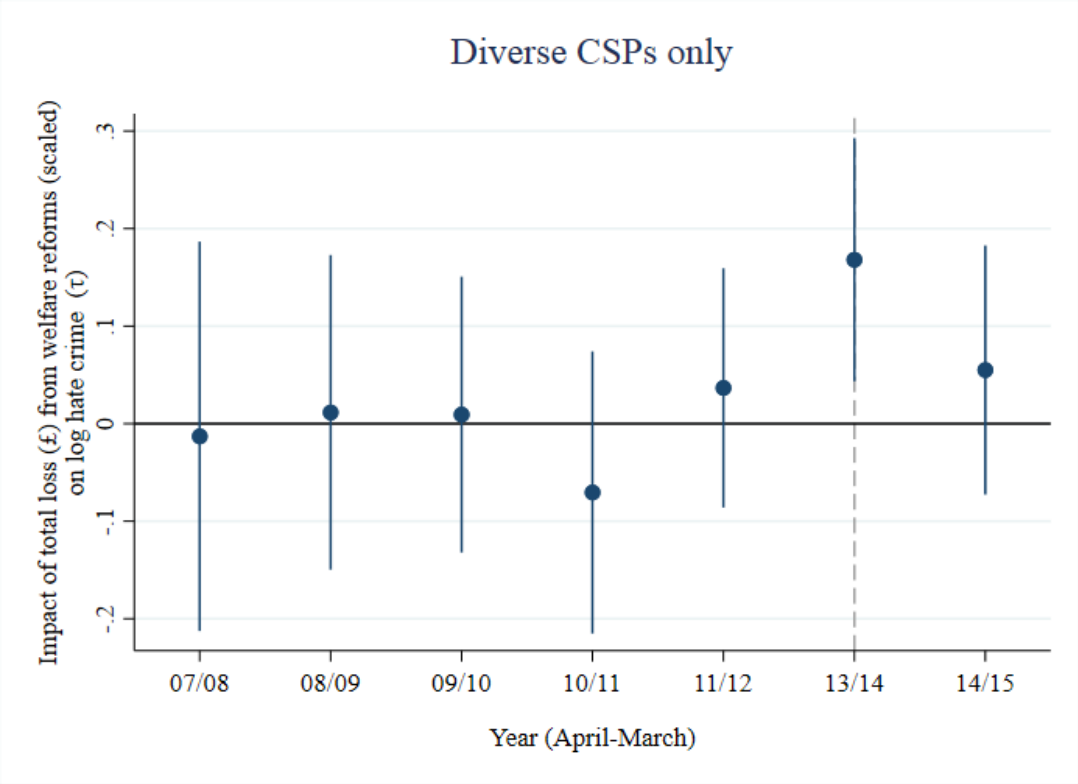
Figure 33 shows that the main results presented in this chapter are not driven by differences within Greater London and can be applied to the other regions of England and Wales. Figure 34 and Figure 35 show that when considering sub-samples consisting of CSP areas more likely to experience hate crime (diverse and urban areas) the effect of higher total losses (£) per working age adult from the welfare reforms are still positive and significant in the year they were introduced (2013/14).

Figure 33: Results for CSP areas outside of Greater London.

Treatment effect year interactions, pre and post reform.

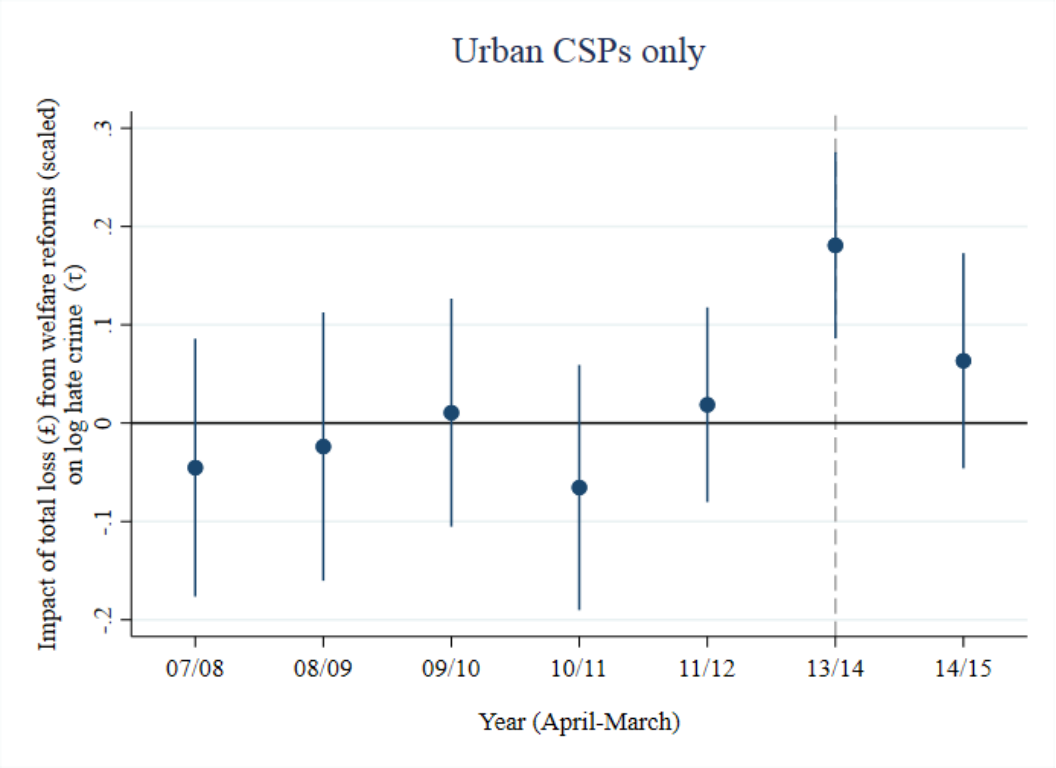
[18] These cut-off points have been chosen due to the distribution of CSP areas relating to ethnic and religious diversity as shown in appendix 7.2.1.

Figure 34: Results for CSP areas with high diversity



Treatment effect year interactions, pre and post reform. CSP is 'diverse' if non-white population ≥ 10% and minority religious population ≥ 5%

Figure 35: Results for urban CSP areas.



Source: Department for Environment, Food & Rural Affairs (2016), averaged from corresponding local authority areas

4.5. Conclusions

This chapter provides causal evidence that welfare reforms adopted as part of the UK's austerity programme in April 2013 led to increases in the number of racially or religiously motivated (RRM) crimes recorded in England and Wales. Using local-level data on the estimated impact of welfare reforms per working age adult and police recorded crime data, I perform a difference-in-differences analysis using a continuously varying treatment intensity to show that Community Safety Partnership (CSP) areas which experienced greater losses per working age adult from four reforms introduced in April 2013 were more likely to record greater increases in RRM crime in the following year (2013/14).

These results hold when controlling for individual and year fixed effects as well as with Police Force Area specific linear time trends. Furthermore, the results presented in this chapter show that the effect of austerity on RRM crimes are not found for non-hate related crime in general or other types of crime (namely property crime and violent crime). I also find no evidence that the effect was driven by increases in frustrations or anti-immigrant

sentiments of individual benefit recipients using individual-level data from Understanding Society and the European Social Survey.

I conclude that this chapter provides support for realistic group conflict theory as an explanation for rising hate crime, where depleting resources create a sense of scarcity and competition between groups. It is possible that these tensions and perceptions of competition between the majority group of white British natives and minority ethnic or religious groups were simultaneously influenced by the rhetoric of immigration as an issue by the UK government, and portrayals of immigrants as a drain on public services (Gietel-Basten, 2016). In this way, the austerity programme may have signalled to individuals living in communities where the effects of benefit cuts were felt most keenly that their 'group' resources were under threat from minority out-groups, and increased hostility toward minorities which led to increases in crimes committed out of prejudice.

These results provide implications for the impact of austerity on intergroup tensions and anti-foreigner or immigrant sentiment stemming from prejudice. Racial prejudice and violence towards foreigners has been found to increase anti-immigration attitudes in Europe (Gorodzeisky and Semyonov, 2016; Igarashi, 2020). The findings presented in this chapter provide an important link between austerity measures and attitudes to immigration that may provide further support to Fetzer's (2019) findings on the influence of austerity over the Brexit result.

The main limitations of this chapter focus on the efficacy of the data used in measuring the actual impact of austerity on racially or religiously motivated hate crime. The police recorded crime data used to estimate the number of RRM crimes committed in each local area rely mostly on the classification from law enforcement, but also include some voluntary reporting through independent charities for example, which are typically under-reported (Gale et al., 2002). This may mean that the true level of RRM crime is not accurately captured by the data, and while I control for fixed effects and attempt to mitigate any differences in local police approach and funding, there may be different levels of reporting in different areas which affect the results. In addition, RRM crimes may not directly translate to white majority on ethnic minority crimes and may include crimes motivated by race or religion committed by other ethnic groups. One avenue for future research could be understanding which groups underly the austerity-induced increases in RRM hate crime or prejudice. Does austerity cause a general increase in intergroup conflict, or is it mainly directed from the majority to the minority, or vice versa?

While austerity was intended to help reduce the UK's large national debt, it is important to consider the unintended consequences of sharp cuts to benefits. Previous research has shown that austerity had a causal impact on the decision to leave the European Union (Fetzer, 2019). This chapter presents evidence that austerity also played a causal role in the increase in RRM hate crimes recorded in England and Wales and shows that cuts in public spending have social costs beyond the financial losses experienced by benefit recipients. These findings suggest that one cost of a reduced national debt is an increase in polarisation and prejudice within society, and policy makers should consider the implications of this when implementing future welfare policy.

Chapter 5: Media Attention and Public Concerns About Immigration: The Case of Germany During the 2015 Migrant Crisis

5.1. Introduction

In late 2014, conflict in the Middle East caused hundreds of thousands of people to travel towards Europe seeking refuge in what has become known as the European migrant crisis (BBC News, 2015). Germany was a highly popular destination for refugees and saw large increases in the number of people arriving from foreign countries throughout 2015 (Figure 36). Unsurprisingly, immigration was a highly salient topic in the German media during 2015. In this chapter, I measure the media salience of immigration in Germany during the 2015 migrant crisis and estimate the impact that sharp increases in media attention had on individual immigration concerns. This chapter aims to extend previous research showing that higher media salience predicted high levels of concern about immigration over a 15-year period from 2001 to 2015 in Germany (Czymara and Dochow, 2018) by focusing on the 2015 migrant crisis. I aim to understand if the significant migration shock and extraordinary level of media attention it garnered led to any change in the effect of media salience on immigration concerns.

The evidence presented in this chapter contributes to a wide literature on how media salience (or media attention) influences attitudes to immigration. Media attention on immigration has been found to affect attitudes to immigration in much of the existing literature (Boomgaarden and Vliegenthart, 2007, 2009; Fitzgerald et al., 2012; van Klingeren et al., 2015; Czymara and Schmidt-Catran, 2017; Thesen, 2018; Benesch et al., 2019), with negative portrayals of immigrants and refugees acting as short-term priming for negative attitudes (Wright et al., 2019). Exposure to negative depictions of immigrants, or immigration news which features an intergroup threat can lead to the dehumanisation of immigrants and refugees, and justification of their ostracism (Esses et al., 2013; Seate and Mastro, 2016).

Figure 36: Migration inflows into Germany 2015.

Source: Statistisches Bundesamt (Federal Statistics Office), 2019

Previous research has shown that the rise in immigration inflows during the crisis led to more negative views on minority out-groups (Weber, 2019), and that in general immigrant arrivals increase negative attitudes to immigration more so than the share of immigrants in the population (van Klingeren et al., 2015). Evidence from Greece during the migrant crisis indicates that even short-term exposure to refugees causes long-term increases in hostility and political support for restrictive immigration policies (Hangartner et al., 2019). Alternatively, increased immigrant inflows may lead to media having an even greater influence over public concerns. Boomgaarden and Vliegenthart (2009) show that between 1993 and 2005 in Germany, a time period including large arrivals of asylum-seekers, media salience had a greater impact on attitudes to immigration when the number of immigrants and asylum seekers arriving into a country was higher. The present chapter aims to understand if the increased migrant inflows occurring in Germany in 2015 meant that the established effects of media salience on anti-immigrant sentiments were crowded out by the genuine impact of a considerable migration shock, or if they persist at similar or even greater levels.

To measure media salience, I initially replicate an approach used by Czymara and Dochow (2018), where they found evidence that over a 15-year period (2001-2015) media attention caused increases in immigration concerns in Germany. In their long-term analysis they create daily counts of the numbers of articles identified from four German

newspapers (with a mixture of political biases) using a comprehensive Lexis Nexis search string to identify articles related to immigration. This search string counts an article as immigration-related if it mentions immigration, Germany, and an immigration-related issue (such as integration or crime). They then use these counts of articles to create a factor score representing media salience of immigration on a given day, using a lag length of 21 days between article publication and its assumed impact on the salience of the issue discussed. They estimate the impact of this media salience score on concerns about immigration to Germany as measured by GSOEP survey responses in a panel fixed effects linear probability model.

In this chapter, I both replicate and extend this approach by creating further measures of media salience which provide more detailed data for studying a shorter and more volatile time period. While the original comprehensive search string requires articles to include terms for immigration, Germany, and another immigration-related issue, I also use a more generalised search string which only requires terms for immigration and Germany to be included for an article to be counted. This allows for more detailed media salience data during a period where it is plausible that immigration was a talking point by itself.

Furthermore, while Czymara and Dochow focus on the number of 'immigration' articles, I use computer-assisted text analysis (using code written in Python) to count the number of times immigration (as defined by a set of keywords) is mentioned both within the identified articles from Lexis Nexis, and within unfiltered online archives from two daily German news sources. These additional methods of measuring media salience allow for the measurement of additional impacts of media intensity, or for the impact of a general rise in the use of immigration buzzwords in the media, which may seep into the public consciousness and affect worries about immigration.

Using this media salience data alongside survey data from the German Socio-Economic Panel (GSOEP) which includes a measure for level of concern about immigration to Germany, I estimate a linear probability model which exploits changes in the media salience an individual is likely exposed to a certain number of days before their GSOEP interview. The results presented in this chapter provide evidence that in 2015, media salience had a positive and significant impact on immigration concerns, comparable to the long-term estimates found by Czymara and Dochow (2018). However, given that the majority of GSOEP interviews were conducted before the peak of the migrant crisis in the summer of 2015, I also estimate the impact for shorter time periods within 2015.

I show that while media salience had a positive impact on immigration concerns during April and May when reports of migrant boat sinking incidents were sweeping the media, there is no evidence of an impact between June and September when the migrant crisis was in full swing and when the main increase in media reporting about immigration occurred. These results suggest that at the peak of the migrant crisis, media salience had little influence over concerns about immigration. This may be because individuals reacted differently to the types of stories being published in the spring of 2015 and the summer of 2015, or that media salience was crowded out during the peak by either an over-saturation of media attention or by the impacts of genuine increases in immigrant and refugee arrivals and native experiences with migrants and refugees.

The 2015 migrant crisis was instrumental in changing both the salience of immigration and the political landscape in Germany, with political parties aligning themselves around the immigration issue, and anti-immigrant voters shifting further towards the radical right-wing party, AfD (Alternative for Germany) (Mader and Schoen, 2019). Therefore, it is important to consider the role that the media may have played in shifting concerns, attitudes, and the growing populist radical-right political movements across Europe. The findings presented in this chapter provide general support for the idea that the salience of immigration in the media can prime or influence negative attitudes towards immigrants and refugees, even within a year containing a large inflow of migrants and refugees (Wright et al., 2019; Thesen, 2018; van Klingeren et al., 2015; Fitzgerald et al., 2012; Boomgaarden and Vliegenthart, 2009, 2007). However, these findings provide only limited support, and results do not hold for interviews conducted between June and September, indicating that at the height of the migrant crisis, when both migrant inflows and media attention were rising the most, the media did not play a significant role in the shift towards anti-immigrant ideologies and political parties.

5.2. Data

5.2.1. Measuring media salience

To measure the salience of immigration in the German media, firstly I use a comprehensive search string to identify immigration articles from four news sources in the Lexis Nexis database (Czymara and Dochow, 2018). The news sources used consist of two weekly newspapers – Der Spiegel and Stern – and two daily newspapers – Die Welt and taz (Die Tageszeitung), which are among the leading newspapers/magazines in Germany. As noted by Czymara and Dochow (2018), these news sources are both highly circulated and ideologically balanced, covering right-wing/conservative (Die Welt), left-wing/Green party (taz), and centrist/liberal (Stern, Der Spiegel) readers. Using data from The German Audit Bureau of Circulation (IVW) I find a combined distribution/readership of nearly 2 million in January 2015[19], and while I was unable to find regional readership data, all four are national newspapers or magazines. In addition, I use Spiegel Online (an online newspaper linked to the weekly Der Spiegel) as another source of daily news, which alongside Die Welt has archives available online. The search string, taken directly from Czymara and Dochow (2018), identifies immigration articles consisting of a direct reference to 'immigration', a reference to Germany, and another term linked to immigration issues, such as jobs or crime for example[20].

The articles identified from this search string should represent media attention to actual immigration issues or news items, but would not include any articles which refer to immigration to Germany or the migrant crisis without also referring to connected issues such as integration, crime, jobs or terrorism. While this provides a focused long-term measure of media salience, during a genuine migration shock it seems likely that media attention on immigration itself (without the presence of any connected issue) will both occur and affect individual concerns about immigration. Therefore, I also identify general

[19] Distribution figures: Die Welt – 203,135; taz – 56,227; Der Spiegel – 894,375; Stern – 759,034.

[20] (!wander! OR !migration! OR !migrant! OR !flücht! OR !flucht! OR !ausländer! OR !asyl!)
AND
(deutschland OR bundesrepublik OR brd)
AND
(!integration! OR !abschieb! OR abgeschob! OR !einbürgerung! OR aufenthaltsgenehm! OR ausländerkriminalität OR (!kriminalität! w/5 (!wander! OR !migrant! OR !flücht! OR !ausländer!)) OR (!kriminell! w/5 (!wander! OR !migrant! OR !flücht! OR !ausländer!)) OR !fachkr! OR (!qualifi! w/3 (!wander! OR !migrant! OR !flücht! OR !ausländer!)) OR (arbeit! w/3 (!wander! OR !migration! OR !flücht! OR !ausländer!)) OR (!erwerbs! w/3 (!wander! OR !migrant! OR !flücht! OR !ausländer!)) OR (!beruf! w/3 (!wander! OR !migrant! OR !flücht! OR !ausländer!)) OR ((!terror! OR !anschlag!) w/5 !islam!) OR zwangshochzeit OR zwangsheirat OR !parallelgesellschaft! OR !kopftuch! OR ehrenmord OR hassprediger OR !burka! OR (!islam! OR !muslim! w/5 (!wander! OR !migrant! OR !flücht! OR !ausländer!)) OR mohammedkarikatur OR (mohammed w/3 karikatur!))

immigration articles using a second search string consisting of a direct reference to 'immigration' and a reference to Germany. To avoid confusion, I label the immigration articles identified by Czymara and Dochow's original search string 'issue-specific', and the articles identified by the reduced search string 'general' immigration articles.

In addition to the frequency of both 'issue-specific' and 'general' immigration articles, I also generate data on the frequency of immigration keywords occurring in the media during the migrant crisis. I use computer-assisted analysis (Python) to count the number of times immigration-related keywords are used for each day of 2015[21]. I conduct this analysis both *within* the Lexis Nexis identified 'issue-specific' and 'general' immigration articles as well as on all articles or headlines from the online archives of Die Welt and Spiegel Online respectively (referred to as 'online archive keywords' henceforth). This data is intended to take account of the intensity of media salience, where days with the same number of articles, but a greater number of references to immigration within those articles would provide a greater measure of media salience. I present descriptive statistics for the number of articles and keywords identified for each of the five sources in Table 19. As expected, daily news yields more articles and keywords than weekly news, and the 'general' immigration search-string yields more articles and keywords than the 'issue-specific' search string. This means that the broader measures of media salience, such as general keywords and online archive keywords may provide more variation across 2015 than issue-specific articles for example, which even for daily news yielded a maximum of 13 immigration articles on any given day in 2015.

Similar to Czymara and Dochow (2018), I use exploratory factor analysis to combine the different news sources and create a single factor score for each measure representing cumulative media salience over the past 21 days from an individual's interview date in 2015. The 21-day lag was chosen for the main specification largely for comparison to Czymara and Dochow who use the same lag length and admit this lag length is "somewhat arbitrary" but provides a middle ground between being "salient for long enough to be a discussed topic" and "short enough to be remembered at the time the interview took place". There is no real consensus on the time lag to use when studying media salience, and in a meta-analysis of media agenda-setting effects, Luo et al. (2019) find that variance in lag length from days to months does not significantly influence the agenda-setting

[21] Words containing any of the following stems: zuwander, migra, wanderarbeit, einwander, flüchtling, aussiedler, asyl.

effects of the media. To check the results hold when varying the lag length, I also estimate factor scores for media salience over the past 1, 7, 14 and 28 days and generally find the effect is consistent. It is possible that media salience has more of a cumulative effect on attitudes and people keep responding to news published prior to the past 21 days, which may mean that the full impact of media salience is not measured using this method, and this should be taken into consideration particularly for interviews conducted once the migrant crisis was in full swing.

Table 20 shows the eigenvalues, factor loadings, uniqueness and summary statistics for each factor score using the 21-day lag length. While the loadings and variance of each measure do differ, to compare the impact of each measure of media salience I run an alternative specification with standardised versions of the factor scores.

Table 19: Summary statistics for each news source and measure of media salience

	Issue- specific articles	General articles	Issue-specific keywords	General keywords	Online archive keywords
Der Spiegel (weekly)					
Mean per day	0.682	2.049	7.682	12.745	-
Standard deviation	1.959	5.503	26.526	42.218	-
Min	0	0	0	0	-
Median	0	0	0	0	-
Max	12	27	177	309	-
Stern (weekly)					
Mean per day	0.216	0.751	2.649	4.490	-
Standard deviation	0.756	2.118	10.908	15.418	-
Min	0	0	0	0	-
Median	0	0	0	0	-
Max	5	15	81	98	-
Die Welt (daily)					
Mean per day	2.395	6.299	25.896	42.934	78.174
Standard deviation	2.281	4.767	29.515	43.528	55.623
Min	0	0	0	0	4
Median	2	6	16	30	65
Max	13	26	139	228	287
Taz (daily)					
Mean per day	2.441	7.011	19.778	38.463	-
Standard deviation	2.303	5.222	24.878	39.899	-
Min	0	0	0	0	-
Median	2	6	12	29	-
Max	13	31	170	227	-
Spiegel Online (daily)					*(headlines)*
Mean per day	1.762	5.978	15.663	37.630	5.304
Standard deviation	1.737	4.457	20.584	38.215	5.102
Min	0	0	0	0	0
Median	1	5	8	23	4
Max	9	33	126	219	22

- data not available

Table 20: Factor scores for each measure of media salience.

	Issue-specific articles	General articles	Issue-specific keywords	General keywords	Online archive keywords
Eigenvalue	2.193	2.292	2.398	3.189	1.924
Factor loadings					
Der Spiegel	0.110	0.801	0.460	0.825	-
Stern	0.898	0.579	0.812	0.894	-
Die Welt	0.753	0.893	0.871	0.941	0.981
taz	0.899	0.719	0.877	0.908	-
Spiegel online	-	-	-	-	0.981
Uniqueness					
Der Spiegel	0.083	0.358	0.788	0.319	-
Stern	0.131	0.665	0.341	0.201	-
Die Welt	0.323	0.202	0.242	0.115	0.038
taz	0.170	0.483	0.231	0.176	-
Spiegel online	-	-	-	-	0.038
Min	-1.235	-1.260	-1.245	-1.090	-1.047
Median	-0.811	-0.847	-0.749	-0.820	-0.915
Max	2.105	2.266	2.710	2.609	2.463
Mean	-0.681	-0.858	-0.691	-0.766	-0.830
Standard deviation	0.392	0.316	0.304	0.292	0.309
Variance	0.154	0.100	0.092	0.085	0.096

All factor scores calculated using principal component factor analysis.
Media salience calculated with cumulative lag length of 21 days.

5.2.2. Individual data and dependent variables

I use individual-level survey data from the German Socio-Economic Panel (GSOEP) to measure individual concerns and other characteristics. The GSOEP questionnaire includes a section which asks respondents how 'worried' or 'concerned' they are about a set of issues, including 'immigration to Germany', where respondents choose from 'not at all concerned', 'somewhat concerned', and 'very concerned'. It is possible that respondents could interpret this question to mean either they are concerned *about* immigration (i.e. anti-immigrant sentiment) or concerned *for* immigrants (i.e. immigrant-sympathetic sentiment), therefore complicating the interpretation of any impacts on this variable. This may be especially likely during a period such as the migrant crisis, where the term 'immigrants' applies not only to economic immigrants but refugees fleeing conflict who may be regarded with more sympathy and public acceptance (Czymara & Schmidt-Catran, 2017; Holmes & Castañeda, 2016), and associated with 'need for support' as opposed to 'economic competition' (Johann & Thomas, 2018).

Conflicting interpretations of this survey question have been presented in the previous literature. In a recent study using the immigration concern question in the GSOEP survey to measure attitudes toward immigrants, Benesch et al. (2019) find evidence that reporting higher concern about immigration to Germany could actually indicate sympathetic sentiment. They show that if immigrants are shown as the 'protagonists' (i.e. the reader is led to sympathise with them) in media reports about immigration, concerns about immigration increase more than when immigrants are not the 'protagonists' of the article. On the other hand, several previous studies have used and verified the concern about immigration question in GSOEP as a proxy for immigration attitudes (Lancee and Pardos-Prado, 2013; Czymara and Dochow, 2018; Pardos-Prado and Xena, 2019).

To understand what this immigration concern question measures in this chapter, I present Spearman rank-order correlation coefficients[22] between respondents' level of immigration concern (1: very concerned, 0: somewhat concerned, -1: not at all concerned) and other characteristics or opinions, and find evidence that it has generally been interpreted by respondents as concern or worry about immigration as a problem for Germany, rather than concern for the safety or wellbeing of immigrants or refugees. I use

[22] I find very similar results using Kendall rank and Polychoric correlation coefficients, shown in appendix 7.3.1

individual waves between 2010 and 2014[23] to calculate the correlation coefficients, depending on which questions were included in each wave. This analysis is intended to give an idea of the characteristics of people who generally reported high levels of concern before 2015, the year of interest in this chapter. However, in order to check if the interpretation of this question changed as a result of the migrant crisis (i.e. to become more sympathetic) I also obtain correlations for 2015 (where questions were available) and find very similar coefficients (see appendix 7.3.1). In addition, basic regressions including controls for age confirm that these results are not simply a reflection of older respondents having more concerns about immigration.

The correlation coefficients presented in Table 21 cover a range of characteristics and show that higher concern levels are associated with more right-wing political ideology. Supporting this, Figure 37 shows that supporters of radical right-wing parties in Germany (such as DVU, Republicans or NPD) are generally much more likely to report a high level of immigration concern, while the opposite is true for more left-wing or pro-immigration parties (e.g. Green party, SPD or the Left party). Table 21 also shows that higher immigration concern is linked to more negative individual outlooks, satisfaction with life and more distrust or caution towards others. There is also some evidence that the number of close friends a respondent has from another country is associated with lower concern levels, while a greater proportion of foreigners living in a respondent's residential area is associated with higher concern. These results suggest the presence of an 'us vs. them' mentality associated with responses to the immigration concern question.

In addition, reporting higher concern levels on *any* issue mentioned is also associated with higher immigration concern. The correlation coefficients are particularly large for concerns about crime in Germany, and while concerns about hostility to foreigners and maintaining peace (for example) are positively correlated with immigration concern, the coefficients are much smaller. This is in keeping with the literature, as the association between immigrants and crime has been found to influence negative attitudes towards immigration (Couttenier et al., 2019). These correlations indicate that concern about immigration to Germany is linked more to anxiety about the impacts of immigrants coming to Germany, rather than concern for their welfare.

[23] The only exception to this is responses to a question measuring concern levels about social cohesion in Germany, as data is only available for 2015

Finally, I also estimate correlation coefficients between immigration concern and questions indicating a respondent's 'big five' personality traits (Table 22). Personality traits commonly associated with anti-immigrant attitudes or conservative views - neuroticism and conscientiousness are positively correlated with higher immigration concern, while traits associated with pro-immigration attitudes (agreeableness and openness) show no evidence of any correlation (Gallego and Pardos-Prado, 2014).

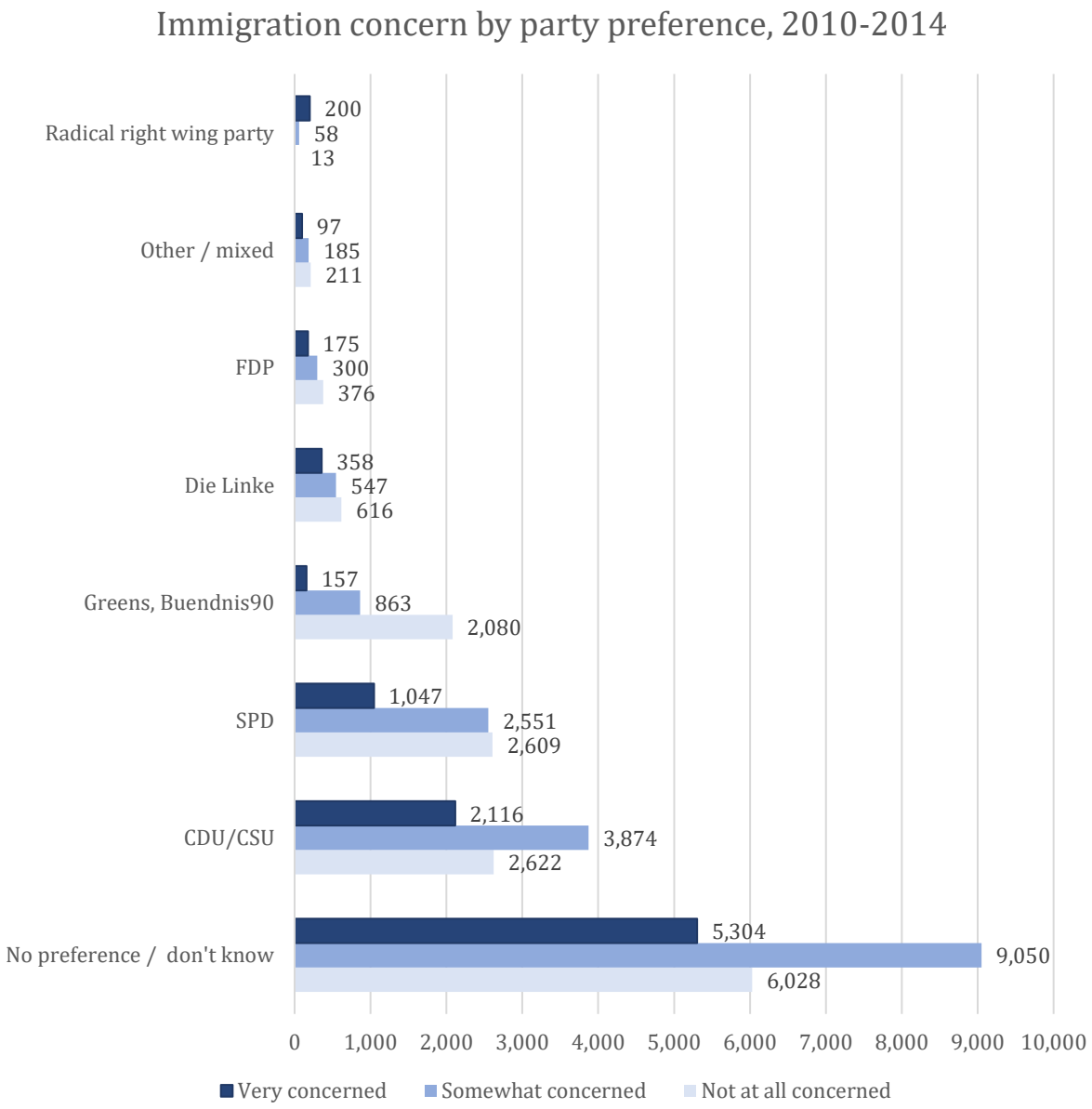
Table 21: Correlations between dependent variable and other opinions or concerns.

	Worried about immigration	
Correlation coefficients	Wave	Spearman (ρ)
Personal beliefs, satisfaction, political leaning		
Compared to others, have not achieved what I deserve (1: Does not apply - 7: Applies fully)	2010	0.1805*
If socially / politically active, can have effect on social conditions (1: Does not apply - 7: Applies fully)	2010	-0.1602*
Satisfaction with life at present (0: low - 10: high)	2014	-0.1322*
Political leaning (0: completely left - 10: completely right)	2014	0.2313*
Proximity to foreigners		
Close friends (of three mentioned) from outside Germany or different country to respondent (0: None - 3: All three)	2011	-0.0455*
Foreigners living in residential area (1: None - 6: All)	2014	0.0281
Trust and opinions of others (1: Disagree completely - 4: Agree completely)		
On the whole, you can trust people	2013	-0.2446*
Nowadays, can't trust anyone	2013	0.2679*
Caution towards strangers	2013	0.2307*
Other worries (1: very concerned, 0: somewhat concerned, -1: not at all concerned)		
Worried about job security	2014	0.1936*
Worried about hostility to foreigners	2014	0.2112*
Worried about crime in Germany	2014	0.6001*
Worried about maintaining peace	2014	0.1982*
Worried about environmental protection	2014	0.1146*
Worried about the economy in general	2014	0.2319*
Worried about your own economic situation	2014	0.1503*
Worried about social cohesion in society	2015	0.3014*

GSOEP, 2010-2015. Figures show pairwise correlation coefficients for each variable against responses for the immigration concern question (1: very concerned, 0: somewhat concerned, -1: not at all concerned)

* $p < 0.01$

Figure 37: Immigration concern by respondent party preference



Source: GSOEP

Table 22: Correlations between dependent variable and big five personality traits.

		Worried about immigration
Correlation coefficients	Wave	Spearman (ρ)
Big five personality traits		
Agreeableness (factor score)	**2013**	**0.0151**
Agreeableness: Sometimes a bit rude/coarse with others (reversed)	*2013*	*-0.0389**
Agreeableness: Forgiving	*2013*	*0.0100*
Agreeableness: Considerate and kind to others	*2013*	*0.0635**
Openness (factor score)	**2013**	**-0.0233**
Openness: Original, comes up with new ideas	*2013*	*0.0124*
Openness: Values artistic, aesthetic experiences	*2013*	*-0.0773**
Openness: Imaginative	*2013*	*0.0018*
Extraversion (factor score)	**2013**	**0.0414***
Extraversion: Communicative, talkative	*2013*	*0.0471**
Extraversion: Outgoing, sociable	*2013*	*0.0785**
Extraversion: Reserved (reversed)	*2013*	*-0.0621**
Conscientiousness (factor score)	**2013**	**0.1407***
Conscientiousness: A thorough worker	*2013*	*0.1173**
Conscientiousness: Somewhat lazy (reversed)	*2013*	*0.1447**
Conscientiousness: Effective & efficient in completing tasks	*2013*	*0.0977**
Neuroticism (factor score)	**2013**	**0.1346***
Neuroticism: A worrier	*2013*	*0.2289**
Neuroticism: Somewhat nervous	*2013*	*0.0934**
Neuroticism: Relaxed, able to deal with stress (reversed)	*2013*	*-0.0011*

GSOEP, 2013. Figures show pairwise correlation coefficients for each variable against responses for the immigration concern question (1: very concerned, 0: somewhat concerned, -1: not at all concerned)

* $p < 0.01$

All responses on scale from: 1 (Does not apply) to 7 (Applies fully) except reversed questions which have been re-coded to: 1 (Applies fully) to 7 (Does not apply)

5.3. Estimation strategy

The focus of this study is 2015 when the migrant crisis occurred, and media salience data was collected for each day in 2015 only due to time constraints and the nature of the data collection. However, I also use GSOEP waves from 2011 to 2016 for context and to attempt to control for pre-existing or confounding factors. I exclude migrant samples from the data to focus solely on German natives. Table 23 provides sample means which show that the characteristics of respondents in 2015 are very similar to the 2011-2016 average, except for age and concerns about immigration. The average age of respondents in the 2015 sample is higher than the 2011-2016 average by approximately 1.3 years and the proportion of retired respondents is 2.7 percentage points higher in 2015. Meanwhile the proportion of respondents who reported no concern about immigration in 2015 was 5 percentage points lower than the 2011-2016 average, while the proportion reporting some or high concern were both higher than average. Both age categories and employment status are controlled for in all specifications of the model to account for the higher average age of my sample which may lead to more anti-immigrant sentiments.

To estimate the impact of media salience on immigration concern, I use a linear probability model of the following form:

$$(1)\ ImmigrationConcern_i = \alpha + \beta LaggedMediaSalience_i + \gamma MonthlyMigration_i + \delta X_i + \varepsilon_i$$

$ImmigrationConcern_i$ represents binary variables for whether a respondent reported (i) the highest concern level or (ii) an increase in concern compared to the previous year. While the second dependent variable (increase in concern) would not account for respondents who were already very concerned, I use these outcomes together to understand more fully how media salience may influence immigration concern. The first outcome (i) provides a simpler measure of immigration concern and includes all responses to the immigration concern survey question, categorising those who responded 'very concerned' as highly concerned about immigration, and those who responded 'somewhat' or 'not at all' as not highly concerned about immigration. This measure also allows for a broad comparison of the impact during the migrant crisis with long-term estimates. The second outcome (ii) would exclude respondents who said they were 'very concerned' about immigration in the previous year (and so should only be used alongside the first outcome) but allows for a measure of actual change in concerns, including from no concern at all to a moderate level of concern (somewhat concerned).

$LaggedMediaSalience_i$ represents the factor score for each of the five measures of media salience over the past 21 days from a respondent's interview. I include monthly migration arrivals (Statistisches Bundesamt (Destatis), 2019) based on an individual's interview month ($MonthlyMigration_i$) in order to control for the impact the actual migrant crisis may have had on immigration concerns.

I also include a set of controlling regressors to account for individual differences that may contribute to immigration concern. These include education qualification level, sex, age, satisfaction with household income, employment status, state, and concerns about both economic development and the respondent's own financial situation. I would have liked to include a further control for monthly crime statistics, but data is only released on a yearly basis.

Fixed effects are not included in the main model as only one wave of GSOEP is being analysed. However, to check if the impacts of media salience on immigration are driven by constant person-specific characteristics (e.g. constant prejudice or social class) or underlying time trends or shocks (e.g. a rise in crime by immigrants or refugees), I estimate a panel fixed effects version of the linear probability model as follows:

$$(2)\ ImmigrationConcern_{i,t} = \alpha + \beta LaggedMediaSalience_{t=2015} + \tau(LaggedMediaSalience_{t=2015} \times year = 2015) + \gamma MonthlyMigration_{i,t} + \delta X_{i,t} + \gamma T_t + \lambda I_i + \varepsilon_{i,t}$$

Where τ measures the causal impact of being exposed to more media attention in 2015 on immigration concerns, measured as those who report 'very concerned' about immigration to Germany, using 2014 as the baseline to compare against. This is similar to a difference-in-differences model using a continuously varying treatment (in this case, media salience in the 21 days prior to an individual's GSOEP interview), assuming that without media salience immigration concerns would follow some trend (the counterfactual), and each unit of media salience in 2015 yields some effect on immigration concerns. $X_{i,t}$ represents time varying control variables and γT_t and I_i represent time (year, or year and month) and individual fixed effects respectively. The interaction between 2015 media salience and other years from 2011-2016 is also measured to check for underlying trends.

Table 23: Sample means, 2011-2016 compared to 2015 alone.

	2011-2016		2015 only	
	(1)	(2)	(3)	(4)
VARIABLES	Mean	Std. dev.	Mean	Std. dev.
Age	55.051	(15.929)	56.386	(15.967)
Male	0.476	(0.499)	0.474	(0.499)
West Germany	0.703	(0.457)	0.704	(0.456)
Education level				
None / elementary	0.080	(0.271)	0.077	(0.267)
Mid-vocational	0.506	(0.500)	0.502	(0.500)
High-vocational	0.144	(0.351)	0.145	(0.352)
Higher education	0.271	(0.444)	0.275	(0.447)
Employment status				
Not working	0.116	(0.320)	0.103	(0.304)
Education / training	0.012	(0.107)	0.010	(0.098)
Registered unemployed	0.031	(0.173)	0.029	(0.167)
Retired	0.259	(0.438)	0.286	(0.452)
Working	0.582	(0.493)	0.573	(0.495)
Party supported				
None / don't know	0.507	(0.500)	0.509	(0.500)
CDU / CSU	0.202	(0.402)	0.209	(0.407)
SPD	0.144	(0.351)	0.143	(0.350)
Greens, Alliance90	0.067	(0.250)	0.058	(0.235)
The Left party (Die Linke)	0.036	(0.186)	0.036	(0.186)
FDP (incl. mixed)[1]	0.015	(0.122)	0.012	(0.111)
Other / mixed (ideologically unclear)	0.018	(0.132)	0.017	(0.127)
Radical right-wing[2] (incl. mixed)[1]	0.011	(0.106)	0.015	(0.122)
Concern about immigration to Germany				
Not at all	0.286	(0.452)	0.236	(0.425)
Somewhat	0.416	(0.493)	0.434	(0.496)
Very	0.298	(0.458)	0.330	(0.470)
Observations	44,876		7,512	

GSOEP, 2011-2016. Figures show sample means. Standard deviation given in parentheses.

[1] Includes mixed responses that included this option (other / mixed category excludes these)

[2] Radical right-wing parties include DVU, Republicans, NPD and AfD

The identification process of this strategy relies on the fact that interviews in GSOEP are not assigned according to any criteria or individual characteristics. As Czymara and Dochow (2018) note in their justification of the same approach, the day of a respondent's interview is out of their control, and therefore is unlikely to be endogenous. Supporting this, I find evidence that quarterly socio-economic characteristics of respondents (such as education and employment status) in 2015 are very similar to previous years without any substantial migration shock. Meanwhile, quarterly averages of reports of high or increased immigration concern shows a large rise in concern in the third quarter of 2015 which is not observed in previous years (see appendix 7.3.2). This approach takes advantage of the exogenous interview date to see how changing media attention to immigration over a certain period before an individual's interview date affected their concern level about immigration to Germany.

Figure 38 and Figure 39 present the timing of GSOEP interviews across 2015. Interviews are largely skewed towards the start of the year, with the most interviews occurring in February and March, declining gradually as the year continues until the final interviews in October. This presents a possible issue for the research design of this study, as the main increase in media attention during the migrant crisis occurred between June and October, when the number of interviews conducted were lowest. For example, at the peak of media salience during the migrant crisis in September 2015, there are only 41 interviews across 16 days. This may mean that this research underestimates the impact of media salience during the migrant crisis on immigration concern.

However, interviews during the summer of 2015, when media attention towards immigrants was rapidly increasing, occurred in more encouraging numbers. For example, 110 interviews were carried out in August (over 29 days), and 192 occurred in July (over 30 days). In addition, the initial spike in media attention occurring in April and May as a result of migrant boat sinking incidents is covered by a high number of interviews (1,877 overall). Therefore, while the use of this data and research design has limitations and may not measure the full extent of the impact of media attention on immigration concern, significant impacts of media salience on immigration concerns during the Spring and Summer of 2015 should be estimated by the model.

Figure 38: Total number of GSOEP interviews conducted in each month of 2015

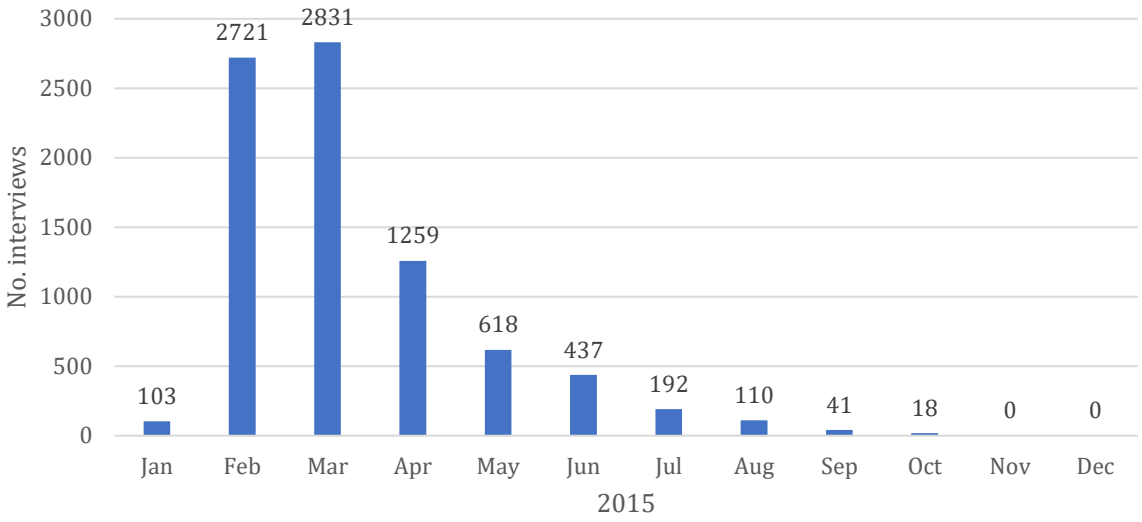
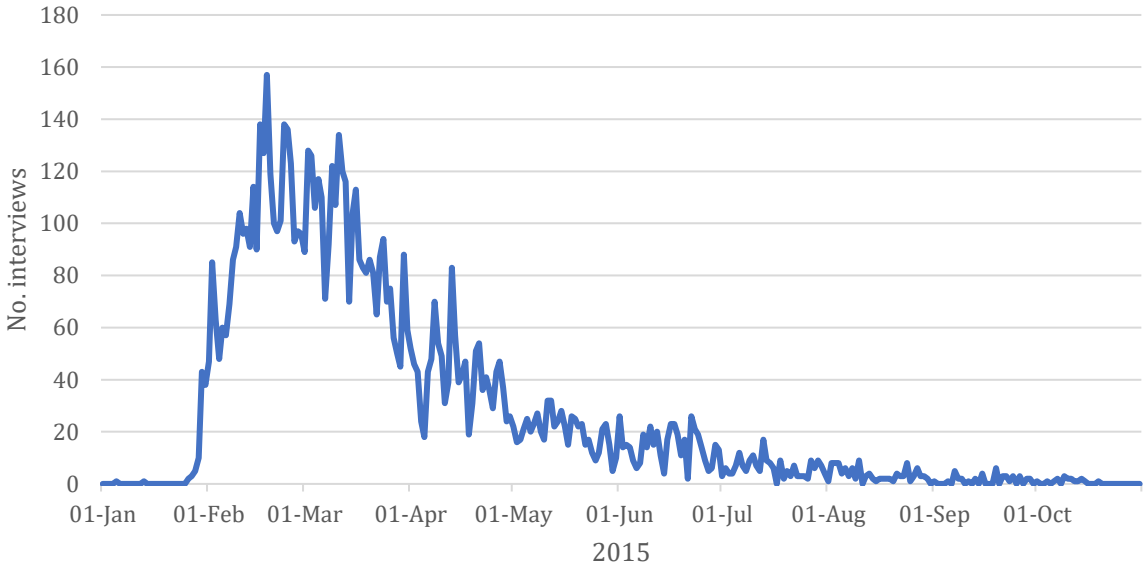


Figure 39: Total number of GSOEP interviews conducted on each day of 2015



5.4. Results

5.4.1. Media salience during the migrant crisis

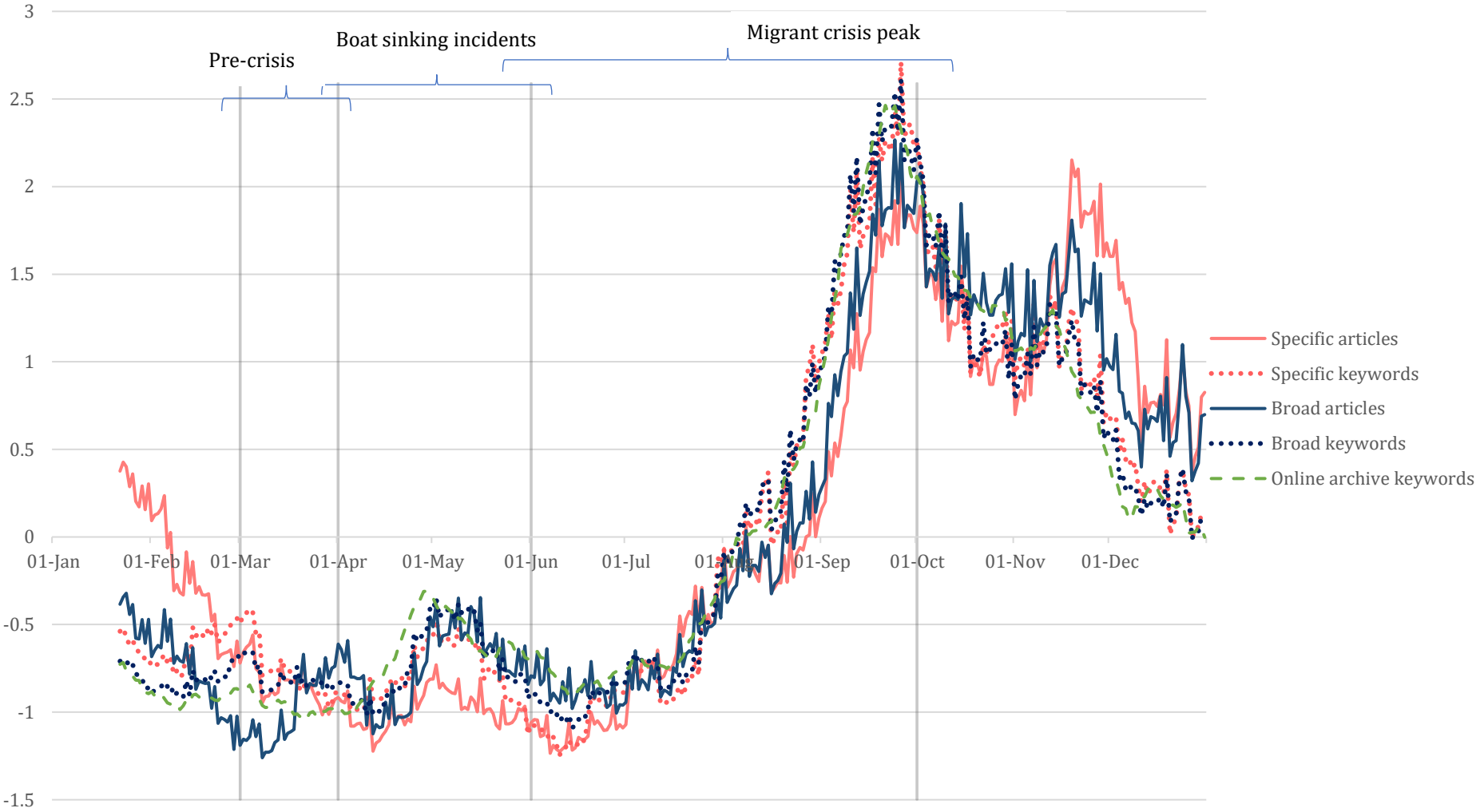
Figure 40 shows the media salience of immigration across 2015, as measured by the five different media salience factor scores used in this chapter. In general, the different factor scores present a similar pattern throughout the migrant crisis, while the factors for number of keywords appear to be more reactive than number of articles, with greater peaks responding to key events. For all measures of media salience, there is a small increase in lagged cumulative media attention towards the end of April, after a significant rise in reports of migrant boat sinking incidents. This is followed by a much larger increase in media attention from June, peaking in September when the drowning and death of Alan Kurdi occurred and gained significant media attention (2nd September 2015), and large numbers of migrants began arriving into Germany.

However, the factor score for issue-specific immigration articles begins at a much higher level than the other factors in late January and February, before converging towards the general pattern between late February and March. It seems unlikely that there would be a genuinely higher level of news about immigration issues in January and February of 2015 than there would be about immigration in a more general sense. In addition, the level of immigration keywords within these issue-specific articles does not behave in a similar way. This may simply be due to the relatively small number of articles identified by the issue-specific search string, particularly for weekly newspapers, which may have impacted the accuracy of this measure over the relatively short time period considered in this research.

I attempt to exclude the effect of this potential data anomaly on the results of this chapter by firstly using a sample of all available interview dates in 2015 (29th January to 19th October 2015[24]) and then restricting the sample to interview dates from March 2015 onwards. In addition, given that the migrant crisis did not occur at a constant rate across 2015, I create further sub-samples of interview dates consisting of: March only (before media attention towards the migrant crisis began to rise), from April to May (around the time of the initial spike in attention due to boat sinking incidents), and finally from June to September (the main rise and peak of migrant crisis media attention), as indicated in Figure 40.

[24] I exclude data from the first 28 days of 2015 due to the longest lag lengths for media salience of 28 days, while SOEP interviews only go up to 19th October in 2015.

Figure 40: Media salience factors for each day in 2015 (21 day lags).



5.4.2. Regression results

Table 24 provides results estimating the impact of each measure of media salience in the 21 days before an individual's interview. I find evidence that media salience increased the likelihood of being 'very concerned' about immigration to Germany across all definitions and measures of media salience. Column 1 shows the impact of the media salience factors for the whole sample (interviews from 29th January to 19th October 2015) on the likelihood of being 'very concerned' about immigration to Germany, while column 2 shows results for the restricted sample of interviews from March onwards. Column 3 presents standardised results for comparison between the different measures of media salience.

Firstly, considering articles identified using the 'issue-specific' search string, I find only weak evidence of an effect on the likelihood of being highly concerned about immigration to Germany when using the sample including all available interviews in 2015. However, excluding GSOEP interviews before March from the sample to remove possible discrepancies in the data in early 2015 (possibly due to small numbers of identified articles), I find an impact of 0.050, which matches Czymara and Dochow's (2018) estimate of 0.050 using the same dependent variable, news sources and definition of media salience of immigration over the 15-year period from 2001 to 2015. These findings suggest that during 2015 (the year of the migrant crisis), the impact of media salience on immigration concerns was not significantly different to the long-term impacts, despite greater migrant and refugee inflows and the presence of a legitimate 'crisis' to drive concerns.

In terms of magnitude, the results show that one standard deviation of 'issue-specific' immigration articles had a 1.6% increase in the likelihood of reporting high immigration concern. Compared to other covariates in the model, this impact is comparable to age (0.015), slightly greater than sex (0.012 for male respondents), but smaller than years of education (-0.076). This suggests that while the effect of media salience on immigration concerns is substantial, it may not be a leading driver in attitude formation.

Estimates using the standardised factor scores (column 3) show that the way media salience is measured can affect the magnitude of effects on immigration concern. The level of immigration keywords identified in the media increase the likelihood of reporting high concern about immigration to Germany more than the level of immigration articles. In addition, using a more general search string to identify immigration articles provides

greater results for both the level of articles themselves, and the immigration keywords identified within them. Immigration keywords taken from all articles or headlines in the online archives of Die Welt and Spiegel Online show the largest impacts on immigration concern, with a 2.3% increase in the likelihood of reporting high immigration concern from one standard deviation of the factor score. These results provide evidence that increases in the frequency of immigration keywords being mentioned in the media has an impact on concerns above that of the frequency of actual news stories about immigration.

I find similar results when considering a dependent variable which indicates the likelihood of an individual becoming more concerned about immigration to Germany relative to the previous year's interview, including respondents who became moderately concerned from reporting no concern, as well as those who became highly concerned (columns 4-6). Estimates for the impact of media salience on this alternative dependent variable are stronger in magnitude than estimates for the impact on reporting the highest level of concern, and suggest that the media played a role in stimulating concerns across the board, including respondents who were previously completely unconcerned about immigration.

Table 25 and Table 26 show the impacts of media salience as measured over different lag lengths on the likelihood of high concern and increasing concern respectively. The results show that the effects hold regardless of whether media salience over the past 7, 14, 21, or 28 days from a respondent's interview is considered for most measures of media salience. Even media salience measured as recently as the day before a respondent's interview is shown to have an impact on reported immigration concern, particularly on the likelihood of increased immigration concern. In addition, following Czymara and Dochow (2018) I check the results using media salience measures weighted by publication frequency (due to the combination of weekly and daily news sources) and find the same results.

I also estimate a panel fixed effects difference-in-differences model using the level of media salience on an individual's interview date in 2015 as the continuous 'treatment' in order to test if these results are simply a reflection of unobserved pre-existing individual differences or underlying trends or shocks (such as a rise in crime perceived to be caused by an influx of refugees) relating to immigration concern. Figure 41 shows the interaction effects between the level of media salience a respondent is exposed to during 2015 and whether they reported high concern in each year from 2011 to 2016 including individual and year fixed effects. I find some evidence that the effect of media salience on

immigration concerns during the migrant crisis is causal, but only for 'broader' measures of media salience, when immigration articles are identified by a general search string, and more so for immigration keywords found in articles and headline in daily online archives. These results hold (and appear slightly stronger) when including month fixed effects (Figure 42).

Table 24: Impact of media salience on immigration concern.

	Very concerned			Increase in concern		
	Whole sample	March onwards		Whole sample	March onwards	
	(1)	(2)	(3) (z-score)	(4)	(5)	(6) (z-score)
	Sources: Der Spiegel, Stern, Die Welt, taz					
Issue-specific immigration articles	0.025*	0.050*	0.015*	0.006	0.069**	0.021**
	(0.013)	(0.027)	(0.008)	(0.013)	(0.028)	(0.009)
Issue-specific immigration keywords	0.046***	0.040**	0.014**	0.044**	0.047**	0.017**
	(0.017)	(0.020)	(0.007)	(0.018)	(0.021)	(0.008)
General immigration articles	0.046***	0.052***	0.019***	0.053***	0.079***	0.029***
	(0.016)	(0.019)	(0.007)	(0.017)	(0.019)	(0.007)
General immigration keywords	0.059***	0.054***	0.019***	0.072***	0.069***	0.024***
	(0.019)	(0.020)	(0.007)	(0.021)	(0.021)	(0.008)
	Sources: Spiegel Online and Die Welt					
Online archive immigration keywords	0.062***	0.062***	0.023***	0.085***	0.081***	0.030***
	(0.018)	(0.019)	(0.007)	(0.019)	(0.020)	(0.007)
Observations	*7,512*	*4,943*	*4,943*	*7,512*	*4,943*	*4,943*

Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Figures show coefficient for the impact of each measure of media salience over past 21 days on dependent variables representing high or increased concern about immigration. Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions. Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 25: Impact of media salience with different lag lengths on high immigration concern

	Past day	Past 7 days	Past 14 days	Past 21 days	Past 28 days
	(1)	(2)	(3)	(4)	(5)
Sources: Der Spiegel, Stern, Die Welt and taz					
Issue-specific: no. articles	0.014	0.046**	0.048*	0.050*	0.039
	(0.014)	(0.021)	(0.026)	(0.027)	(0.028)
Issue-specific: no. keywords	0.034**	0.045**	0.047**	0.040**	0.038*
	(0.014)	(0.018)	(0.020)	(0.020)	(0.022)
General: no. articles	0.006	0.058***	0.051***	0.052***	0.059***
	(0.013)	(0.017)	(0.018)	(0.019)	(0.020)
General: no. keywords	0.038**	0.059***	0.062***	0.054***	0.056**
	(0.016)	(0.017)	(0.019)	(0.020)	(0.022)
Sources: Spiegel Online and Die Welt					
Online archives: no keywords	0.044***	0.054***	0.063***	0.062***	0.061***
	(0.014)	(0.016)	(0.017)	(0.019)	(0.020)

Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Figures show coefficient for the impact of each measure of media salience over past 1-28 days on dependent variable (=1 if 'very concerned' about immigration). Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions. Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Interviews from March onwards. N = 4,943, R^2 between 0.120 and 0.122 in all specifications.

Table 26: Impact of media salience with different lag lengths on increased immigration concern

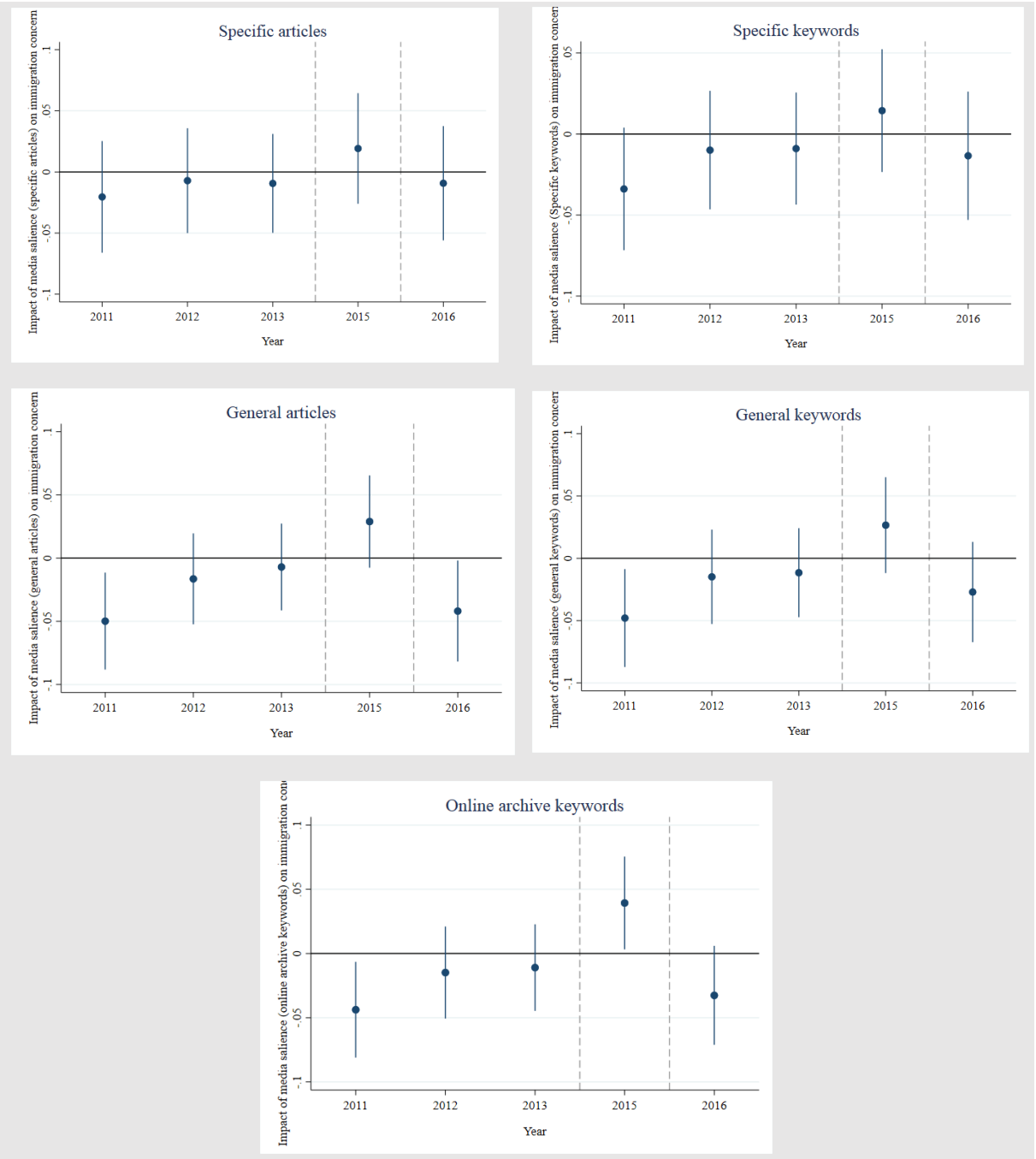
	Past day	Past 7 days	Past 14 days	Past 21 days	Past 28 days
	(1)	(2)	(3)	(4)	(5)
Sources: Der Spiegel, Stern, Die Welt and taz					
Issue-specific: no. articles	0.032**	0.045**	0.064**	0.069**	0.051*
	(0.014)	(0.021)	(0.027)	(0.028)	(0.029)
Issue-specific: no. keywords	0.058***	0.046**	0.049**	0.047**	0.049**
	(0.015)	(0.018)	(0.021)	(0.021)	(0.023)
General: no. articles	0.035***	0.063***	0.064***	0.079***	0.087***
	(0.013)	(0.017)	(0.019)	(0.019)	(0.022)
General: no. keywords	0.074***	0.060***	0.062***	0.069***	0.077***
	(0.016)	(0.018)	(0.020)	(0.021)	(0.023)
Sources: Spiegel Online and Die Welt					
Online archives: no keywords	0.064***	0.064***	0.075***	0.081***	0.085***
	(0.015)	(0.016)	(0.018)	(0.020)	(0.021)

Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Figures show coefficient for the impact of each measure of media salience over past 1-28 days on dependent variable (=1 if reported higher concern than in 2014). Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions. Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

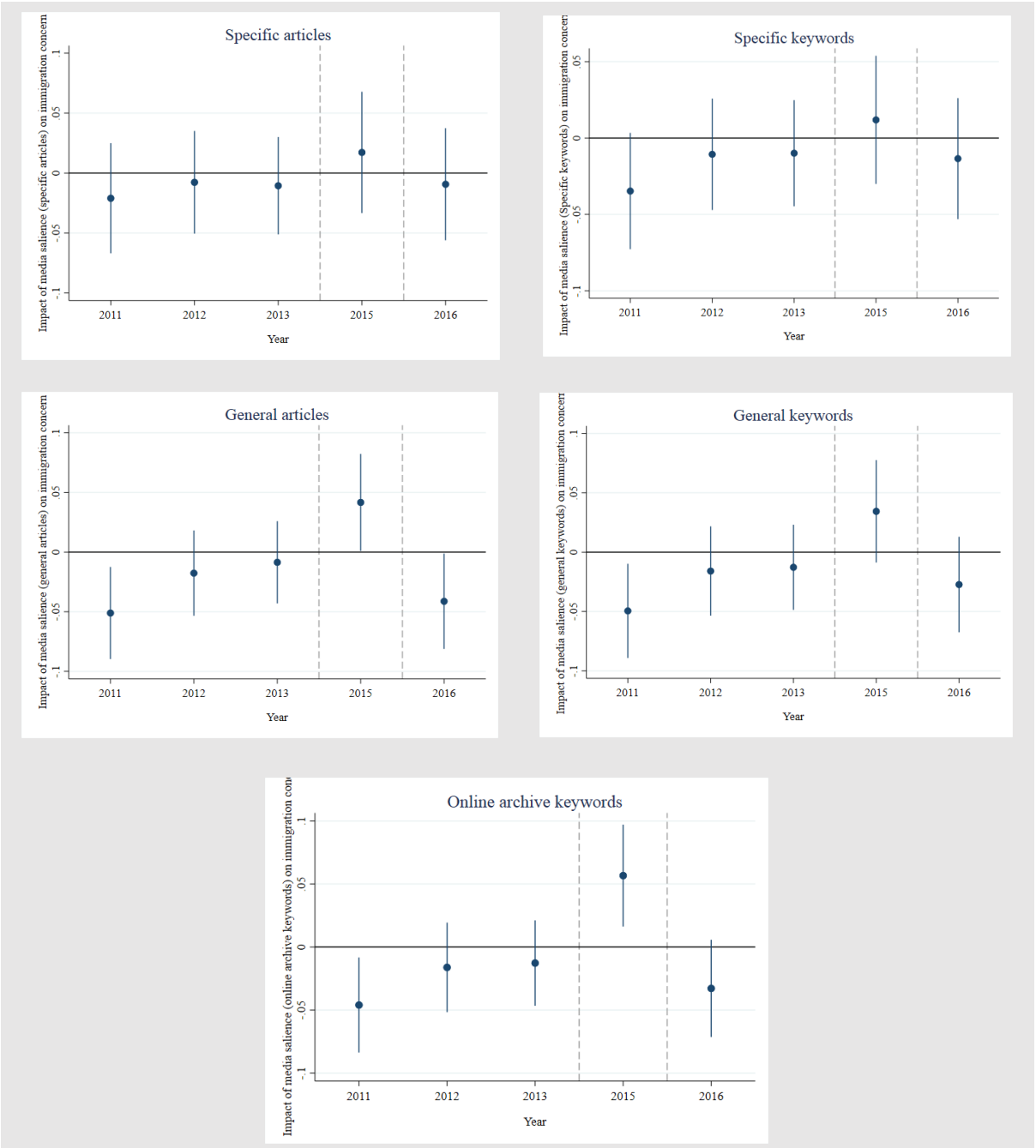
Interviews from March onwards. N = 4,943, R^2 between 0.016 and 0.020 in all specifications.

Figure 41: Impact of media salience on immigration concern, individual and year fixed effects.



Graphs show estimates for the effect of the level of media salience an individual is exposed to in 2015 (over the past 21 days from interview date) on the likelihood of reporting high concern about immigration in each year from 2011 to 2016. Tails show 95% confidence intervals. Including individual and year fixed effects.

Figure 42: Impact of media salience on immigration concern, individual, year and month fixed effects.



Graphs show estimates for the effect of the level of media salience an individual is exposed to in 2015 (over the past 21 days from interview date) on the likelihood of reporting high concern about immigration in each year from 2011 to 2016. Tails show 95% confidence intervals. Including individual, year and month fixed effects.

5.4.3. Results within different stages of the migrant crisis

While the results in the previous section show evidence that higher media attention influenced greater concerns about immigration in 2015 regardless of the building migrant crisis, the majority of GSOEP interviews occurred *before* the main rise and peak of media attention in the summer of 2015. The following analysis estimates the impact of changes in media salience on immigration concerns within the different stages of the 2015 migrant crisis. Table 27 shows results for interviews in March only (prior to the migrant crisis), from April to May (covering the first prominent reports of large-scale migrant boat sinking incidents) and from June to September (covering the rise and peak of the migrant crisis). Due to the shorter length of these time periods, I consider the impact of immigration articles and keywords over the past *7* days, rather than the 21 days used in the main analysis.

These results show evidence that the impact of media attention on public concerns varies depending on the period, even within one year. I find that prior to the migrant crisis in March, media salience has no significant impact on immigration concern, possibly simply due to a lack of movement in media salience during this time. During April and May, I find that the frequency of immigration articles and keywords do significantly increase the likelihood of reporting high or increased levels of immigration concern, and by a higher magnitude than for 2015 overall. Contrary to the results for the whole period, I find slightly stronger impacts of media salience on immigration concern in April and May when measured with articles identified using the 'issue-specific' immigration search string or the immigration keywords within them.

However, focusing on the main rise and peak of the migrant crisis in the summer and early autumn of 2015, I find no evidence that greater levels of media attention on immigration within this time period influenced an increase in individual concerns about immigration. It is possible this is due to the smaller number of observations in this period compared to earlier in 2015 (699 observations compared to 1,683 in April and May), with the number of observations dwindling towards August and September when the peak of media attention towards the migrant crisis was occurring. However, the data still contains 192 interviews in July (over 30 days), and 110 interviews in August (over 29 days), when large increases in the level of media salience on immigration were occurring.

These findings suggest that changes in the level of media reporting on immigration had different impacts on immigration concern in the initial stage of the migrant crisis (April

to May) than the peak of the crisis (June to September). It may be that the influence the media had on immigration concern in time periods without a considerable migration shock was crowded out by the large inflows of migrants and refugees. Previous research has shown that greater personal experience with immigration reduces the uncertainty about immigration which allows the media to influence attitudes (Esses et al., 2013; McLaren et al., 2018). In this case, as the idea of migrants and refugees arriving into German cities became a reality in the summer of 2015, increases in media attention may have had less of an impact on immigration concerns.

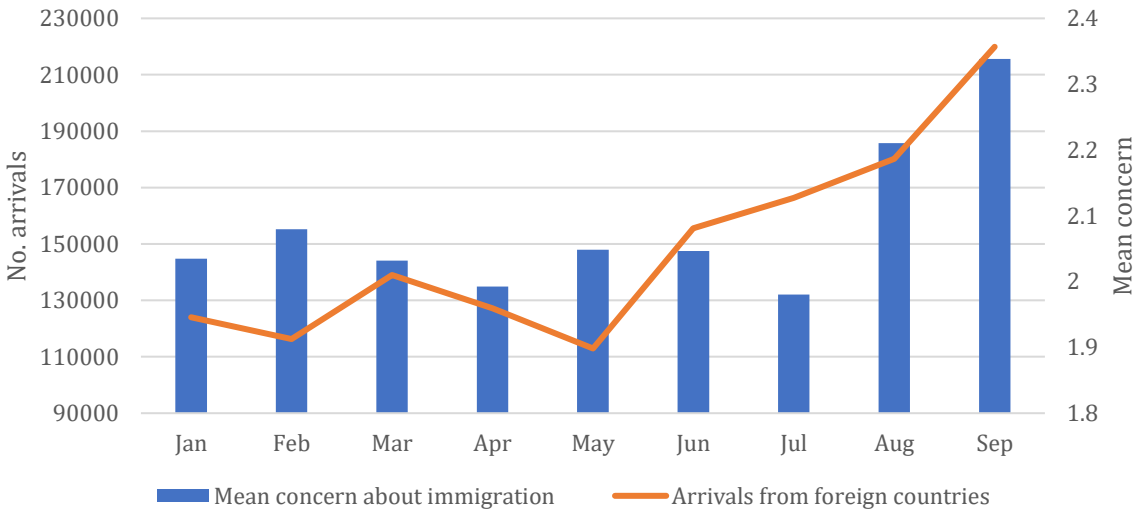
Alternatively, it could be that by the summer of 2015, concerns had already been sparked by the rise in media attention in April, meaning that the large rise in media salience had no additional impact despite average concern levels reaching their highest level in August and September (Figure 43). Boomgaarden and de Vreese (2007) find that the effect of media salience wears off over time, and long-term media exposure mellows out in tone after an event such as the assassination of Theo van Gogh in the Netherlands in 2004. It could be that this is also true for a crisis than unfolds over the course of a year, where people have already been exposed to many stories about the same thing no longer become more concerned. The difference in impact between the two time periods could also be due to the difference in impact of immigration news of different tones and content. While it is outside the scope of this study, it may be interesting for future research to analyse the tone of news before and during the peak of the migrant crisis and understand how this might have disconnected with native audiences.

Table 27: Impact of media salience on immigration concern in different periods in 2015

	Very concerned			Increase in concern		
	(1) Mar	(2) Apr-May	(3) Jun-Sep	(4) Mar	(5) Apr-May	(6) Jun-Sep
	Sources: Der Spiegel, Stern, Die Welt, taz					
Specific immigration articles	-0.025 (0.042)	0.129*** (0.046)	0.007 (0.059)	-0.035 (0.039)	0.177*** (0.045)	-0.077 (0.063)
Specific immigration keywords	-0.036 (0.051)	0.134*** (0.049)	0.010 (0.036)	-0.012 (0.049)	0.098** (0.048)	0.000 (0.038)
General immigration articles	0.012 (0.033)	0.108*** (0.033)	0.025 (0.059)	0.010 (0.031)	0.102*** (0.031)	-0.021 (0.061)
General immigration keywords	0.040 (0.058)	0.112*** (0.041)	0.018 (0.042)	0.076 (0.055)	0.078* (0.040)	-0.004 (0.044)
	Sources: Spiegel Online and Die Welt					
Archive immigration keywords	-0.036 (0.094)	0.070* (0.039)	0.046 (0.062)	0.043 (0.090)	0.057 (0.038)	0.062 (0.064)
Observations	*2,545*	*1,683*	*699*	*2,545*	*1,683*	*699*

Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Figures show coefficient for the impact of each measure of media salience over past 7 days on dependent variables representing high or increased concern about immigration. Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions. Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Figure 43: Foreign arrivals and average immigration concern, 2015



5.4.4. Robustness

To check the robustness of the results of the linear probability model, I run logit and probit versions of the model and obtain marginal effects for each measure of media salience on both the likelihood of reporting high concern and increased concern (Table 28 and Table 29) and find very similar results to the those presented in Table 24. I also estimate results controlling for unobserved monthly trends or shocks (Table 30 and Table 31) and find that while these results are considerably weaker in significance than the main results, there do still seem to be some significant effects. These results suggest that even when controlling for month of interview, media salience had a statistically significant impact on immigration concern when measured using the 'general' immigration search string to identify articles and keywords and using a time lag of 7 days, and when measured considering the number of keywords picked up from newspaper online archives.

In their 2018 study, Czymara and Dochow test for the presence of "feedback mechanisms", where aggregate immigration concern may increase interest and media attention towards immigration issues. They include, as a control variable, "a variable measuring the lagged mean concerns of respondents, covering the period of 42 to 22 days before each interview". I replicate this robustness check (Table 32) and find evidence that the effect of media salience remains significant with very little change in magnitude (considering a smaller sample of interview dates with at least 15 observations within the 42 to 22 day period before the interview to generate mean immigration concern). Like Czymara and Dochow's (2018) finding, these results indicate that feedback mechanisms are not driving the key results of this study.

Finally, I estimate the relationship between immigration concern on the day of GSOEP interviews and media salience over the *next* 21 days in order to see if media attention is driven by public concern and the main results of this study are picking up some element of reverse causality. Table 33 shows the results for the impact of media salience across the following 21 days from an individual's interview on immigration concern, controlling for media salience in the past 21 days from interview. I find little evidence of a relationship between future media salience and reported high concern about immigration to Germany, and no evidence of a relationship between future media salience and reported increased concerns. These results suggest that the main findings of this chapter are not the result of

reverse causality and offer support that the relationship between past media salience and current immigration concerns is causal.

Table 28: Marginal effects (logit) of media salience immigration concerns

	Very concerned		Increase in concern	
	(1)	(2)	(3)	(4)
Logit	Whole 2015	March onwards	Whole 2015	March onwards
Sources: Der Spiegel, Stern, Die Welt, taz				
Specific immigration articles	0.025**	0.049*	0.005	0.062**
	(0.013)	(0.026)	(0.012)	(0.026)
Specific immigration keywords	0.045***	0.039*	0.038**	0.042**
	(0.017)	(0.020)	(0.016)	(0.019)
General immigration articles	0.045***	0.051***	0.047***	0.072***
	(0.016)	(0.018)	(0.015)	(0.017)
General immigration keywords	0.057***	0.052***	0.062***	0.061***
	(0.019)	(0.020)	(0.018)	(0.019)
Sources: Spiegel Online and Die Welt				
Archive immigration keywords	0.060***	0.059***	0.073***	0.072***
	(0.018)	(0.018)	(0.017)	(0.017)
Observations	*7,512*	*4,943*	*7,512*	*4,943*

Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Figures show marginal effects of each measure of media salience over past 21 days on dependent variables representing high or increased concern about immigration. Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions. Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.10

Table 29: Marginal effects (probit) of media salience immigration concerns

	Very concerned		Increase in concern	
	(1)	(2)	(3)	(4)
Probit	Whole 2015	March onwards	Whole 2015	March onwards
Sources: Der Spiegel, Stern, Die Welt, taz				
Specific immigration articles	0.025*	0.049*	0.005	0.062**
	(0.013)	(0.026)	(0.012)	(0.026)
Specific immigration keywords	0.044***	0.039*	0.038**	0.042**
	(0.017)	(0.020)	(0.016)	(0.019)
General immigration articles	0.047***	0.051***	0.048***	0.072***
	(0.016)	(0.018)	(0.015)	(0.017)
General immigration keywords	0.057***	0.052***	0.064***	0.061***
	(0.019)	(0.020)	(0.018)	(0.019)
Sources: Spiegel Online and Die Welt				
Archive immigration keywords	0.061***	0.059***	0.076***	0.072***
	(0.018)	(0.018)	(0.017)	(0.017)
Observations	*7,512*	*4,943*	*7,512*	*4,943*

Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Figures show marginal effects of each measure of media salience over past 21 days on dependent variables representing high or increased concern about immigration. Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions. Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.10

Table 30: Impact of media salience on high immigration concern with month fixed effects

VARIABLES	Past day (1)	Past 7 days (2)	Past 14 days (3)	Past 21 days (4)	Past 28 days (5)
(Sources: Der Spiegel, Stern, Die Welt and taz)					
Issue-specific no. articles	0.004	0.032	0.012	0.034	0.026
	(0.015)	(0.027)	(0.045)	(0.052)	(0.057)
Issue-specific no. keywords	0.020	0.020	0.012	0.008	0.014
	(0.016)	(0.026)	(0.037)	(0.040)	(0.048)
General no. articles	-0.004	0.053**	0.036	0.036	0.051
	(0.014)	(0.022)	(0.028)	(0.037)	(0.048)
General no. keywords	0.017	0.049*	0.066*	0.050	0.068
	(0.019)	(0.027)	(0.039)	(0.052)	(0.067)
(Sources: Spiegel Online and Die Welt only)					
Online archives: no. keywords	0.022	0.046	0.080**	0.082*	0.087
	(0.024)	(0.032)	(0.040)	(0.048)	(0.056)

Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Interviews from March onwards. N = 4,943, R^2 between 0.122 and 0.123. Figures show coefficient for the impact of media salience over past 1-28 days on dependent variable (=1 if 'very concerned' about immigration). Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions. Month fixed effects included (base month = March). Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 31: Impact of media salience on increased immigration concern with month fixed effects

VARIABLES	Past day (1)	Past 7 days (2)	Past 14 days (3)	Past 21 days (4)	Past 28 days (5)
(Sources: Der Spiegel, Stern, Die Welt and taz)					
Issue-specific no. articles	0.021	0.022	0.034	0.066	0.020
	(0.014)	(0.027)	(0.045)	(0.052)	(0.058)
Issue-specific no. keywords	0.046***	0.020	0.008	0.010	0.016
	(0.016)	(0.026)	(0.037)	(0.038)	(0.047)
General no. articles	0.023*	0.043**	0.030	0.056	0.054
	(0.013)	(0.021)	(0.027)	(0.036)	(0.048)
General no. keywords	0.062***	0.043*	0.037	0.059	0.086
	(0.019)	(0.026)	(0.039)	(0.050)	(0.067)
(Sources: Spiegel Online and Die Welt only)					
Online archives: no. keywords	0.057**	0.049	0.078**	0.084*	0.083
	(0.024)	(0.031)	(0.038)	(0.047)	(0.056)

Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Interviews from March onwards. N = 4,943, R^2 between 0.019 and 0.021. Figures show coefficient for the impact of media salience over past 1-28 days on dependent variable (=1 if reported higher concern than in 2014). Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions. Month fixed effects included (base month = March). Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 32: Results including control for lagged aggregated immigration concern

	Very concerned		Increase in concern	
	(1)	(2)	(3)	(4)
		With lagged aggregate concern		With lagged aggregate concern
	Sources: Der Spiegel, Stern, Die Welt, taz			
Specific immigration articles	0.050*	0.057**	0.069**	0.070**
	(0.027)	(0.028)	(0.028)	(0.029)
Specific immigration keywords	0.040**	0.044**	0.047**	0.046**
	(0.020)	(0.021)	(0.021)	(0.021)
General immigration articles	0.052***	0.053***	0.079***	0.079***
	(0.019)	(0.019)	(0.019)	(0.019)
General immigration keywords	0.054***	0.057***	0.069***	0.069***
	(0.020)	(0.021)	(0.021)	(0.021)
	Sources: Spiegel Online and Die Welt			
Archive immigration keywords	0.062***	0.062***	0.081***	0.081***
	(0.019)	(0.019)	(0.020)	(0.020)

Robustness check replicated from Czymara and Dochow (2018). Including lagged mean immigration concern of respondents 21 days before media salience measure lag (42 to 22 days before interview).
Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Interviews from March onwards. N = 4,943.
Figures show coefficient for the impact of media salience over past 21 days on dependent variables representing high or increased concern about immigration. Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions.
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 33: Reverse causality check using media salience after interview date

	Issue-specific immigration articles		**General immigration articles**		**Online archives**
	(1)	(2)	(3)	(4)	(5)
VARIABLES	No. articles	No. keywords	No. articles	No. keywords	No. keywords
Dependent variable: = 1 if very concerned about immigration to Germany, 0 otherwise.					
Media salience during 21 days *after* interview	0.019	0.050**	0.029	0.035*	0.007
	(0.029)	(0.023)	(0.024)	(0.021)	(0.022)
Media salience during 21 days *before* interview	0.041	0.014	0.038*	0.032	0.057**
	(0.030)	(0.023)	(0.022)	(0.024)	(0.025)
R-squared	0.121	0.122	0.122	0.122	0.122
	(6)	(7)	(8)	(9)	(10)
VARIABLES	No. articles	No. keywords	No. articles	No. keywords	No. keywords
Dependent variable: = 1 if concern about immigration to Germany increased from 2014 to 2015, 0 otherwise					
Media salience during 21 days *after* interview	0.021	0.033	-0.001	0.012	0.001
	(0.029)	(0.023)	(0.023)	(0.021)	(0.022)
Media salience during 21 days *before* interview	0.059*	0.030	0.080***	0.062**	0.080***
	(0.031)	(0.024)	(0.022)	(0.025)	(0.026)
R-squared	0.017	0.017	0.019	0.018	0.019

Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Interviews from March onwards. N = 4,943. Figures show coefficient for the impact of media salience over *next* 21 days on dependent variables representing high or increased concern about immigration, controlling for media salience in past 21 days. Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions. Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

5.4.5. Effect heterogeneity

It may be that the impact of media salience on immigration concerns differs depending on the characteristics of respondents. I test the heterogeneity of the impact of media salience on immigration concern by analysing the effects on sub-samples of GSOEP respondents based on their interest in politics, political party support, education level, employment status, region (former east or west German states) and distance from a city centre (as a proxy for living in an urban or rural area). I consider both dependent variables (high concern and increased concern about immigration to Germany), and while I find heterogeneity in the results of both outcomes, impacts on the likelihood of being 'very concerned' about immigration to Germany show more heterogeneity. The impact of media salience (using immigration keywords from online archives as the most robust measure in the main analysis) on the likelihood of reporting the highest level of immigration concern and the likelihood of reporting any increase in immigration concern for different sub-groups are presented in Table 34 and Table 35.

The political engagement or interest of respondents may alter media's influence on immigration concerns. On one hand politically engaged respondents may be more tuned in or sensitive to news or discussion on political topics such as immigration and react more strongly to higher media salience. On the other hand it could be that those without political interest are less likely to already have firm views about the topic, and are therefore more susceptible to media salience. Table 34 presents results for different levels of political engagement. I find that the likelihood of reporting high concern about immigration is only significantly increased by media salience for those who are not interested in politics or do not support a political party. However, impacts on the likelihood of any increase in concern are more homogenous across different levels of political engagement. Before the migrant crisis, political unengaged groups were already more likely to report mid- to high-concern levels (see Table 36) so it is perhaps unsurprising that media salience only stimulated increases in high concern about immigration for these groups, while politically engaged groups were affected more in terms of general increases in concern (including from no concern to some concern).

We may expect supporters of more right-wing (or anti-immigration) political parties to be more greatly influence by media salience, however these supporters may already have strong levels of immigration concern that cannot be further influenced by the media. It could be more likely that supporters of moderate or centrist parties are more easily

concerned by increases in media reporting on immigration. Table 34 shows that the only supporters of a political party to show any significant impacts are supporters of the Green party (high concern) and the SPD (increased concern). The Green party are generally an immigrant-sympathetic party, however, before the migrant crisis only 4.8% of Green supporters reported high concern, compared to 27% for all respondents, and while this did increase in 2015 (to 8.3%), in reality very small changes in concern may have been picked up by the model. However, it is interesting that supporters of the mainstream centre-left SPD, who were serving alongside the centre-right CDU / CSU in a 'grand coalition' government at the time, were influenced by the media while supporters of the CDU / CSU appear to be unaffected. It is possible that these results reflect the media's role in swaying voters on the left towards more anti-immigrant views and more populist right-wing movements.

Location may also affect the influence of media salience on immigration concern. The former East and West regions of Germany have different experiences and histories with immigration, where former East German states have a lower proportion of foreigners in the general population and a shorter history of incoming migrants. In addition, those living in cities are likely to have had more real-life experience of the immigrants and refugees entering Germany during the migrant crisis than those in more suburban or rural areas. This direct experience may make it harder for the media to influence attitudes, or alternatively enflame existing anxieties about immigration.

Socioeconomic characteristics such as education and employment status may also alter the results. Recent evidence shows that people with 'socio-economic vulnerabilities' such as low levels of education or a history of unemployment are more likely to have their views on EU integration influenced by social media (Fortunato and Pecoraro, 2020). It is possible the same is true for media salience during the migrant crisis on immigration concerns, and those who are more economically vulnerable could be more greatly influenced. Lower education levels are a common determinant of anti-immigration views, and in this case lower levels of education may indicate lower education about immigration and international issues, which could make respondents with low levels of education more susceptible to media salience. Being unemployed has also been linked to higher anxieties about immigration, partly due to the threat of labour market and other resource competition, and therefore we may expect unemployed respondents to be more sensitive to increases in news about immigration during the

migrant crisis. However, labour market competition would also apply to employed respondents who may be further influenced by media reports from their relatively stable position.

Table 35 shows further evidence of heterogeneity for the likelihood of reporting high concern levels when considering region, distance from a city centre, education, and employment status. I find higher and more strongly statistically significant effects for: respondents living in the West; those within 10-25km of a city centre; those with lower education levels; and respondents currently in employment. Meanwhile, impacts on the likelihood of any increase in concern about immigration are much more homogenous across sub-groups. Some of these results are in line with expectations (e.g. lower education levels), while others are less expected (e.g. currently in employment).

Many of these findings suggest the presence of stronger effects of media salience for those who were perhaps less directly affected by the migrant crisis, or those with less knowledge about the crisis. For example, media salience increased the likelihood of reporting high concern for respondents who had no interest in politics and supported no political party, for those living in Western Germany but not in Eastern Germany[25]; and for those living outside of cities, but not for city dwellers who would have been in closer proximity to actual refugees and refugee camps. While many Germans would have been directly affected by the migrant crisis, the media may have played more of a role amongst those without direct exposure to immigrants or refugees.

It is possible that the large arrival of immigrants in 2015 was taken advantage of by the media, creating a "crisis" mentality which translated uncertainty about the arrival of immigrants into feelings of threat and hostility, particularly for those without much direct exposure to immigrants (Esses et al., 2013). McClaren et al. (2018) argue that when individuals have no personal experience of immigration, the media has increased agenda-setting power, and Schaub et al. (2020) find that local exposure to refugees in Germany during the crisis actually softened views on immigration (on both the left and the right) rather than enflaming them. However, this is only true for the likelihood of reporting the highest level of concern, and when considering the likelihood of reporting an increased

[25] While refugees were distributed across different states and cities based on population and economy size, more anti-immigrant and far-right attacks were associated with the East (Bennhold and Eddy, 2015)

concern level, I find that effects were felt more evenly across multiple different groups of German citizens.

Table 34: Effect heterogeneity by political engagement and support

	Impact of media salience (online archive keywords)				
	Dep var: high concern		Dep var: increased concern		
Sub-samples	β	*c*	β	*c*	*N*
No / not much political interest	0.084***	*0.958****	0.064**	*0.132*	*2,682*
	(0.026)	*(0.150)*	(0.026)	*(0.139)*	
Strong / very strong political interest	0.030	*0.746****	0.097***	*0.399***	*2,256*
	(0.027)	*(0.163)*	(0.030)	*(0.158)*	
No party preference / don't know	0.105***	*0.900****	0.110***	*0.342***	*2,311*
	(0.027)	*(0.160)*	(0.029)	*(0.145)*	
Has party preference	0.025	*0.863****	0.057**	*0.204*	*2,632*
	(0.025)	*(0.157)*	(0.026)	*(0.148)*	
Party supported					
CDU / CSU	0.023	*0.628***	0.054	*0.074*	*1,105*
	(0.044)	*(0.310)*	(0.044)	*(0.263)*	
SPD	0.069	*1.101****	0.134***	*0.049*	*773*
	(0.052)	*(0.339)*	(0.051)	*(0.265)*	
Greens	0.086**	*0.162*	0.091	*0.598*	*328*
	(0.044)	*(0.322)*	(0.079)	*(0.476)*	
The Left	0.025	*1.004**	-0.040	*-0.160*	*189*
	(0.174)	*(0.606)*	(0.123)	*(0.505)*	
FDP (incl. mixed)	-0.173	*1.854**	-0.157	*0.473*	*68*
	(0.145)	*(0.943)*	(0.161)	*(1.248)*	
Radical right (incl. mixed)	-0.728	*-0.128*	-0.249	*2.095***	*58*
	(0.552)	*(1.148)*	(0.565)	*(0.866)*	

Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Interviews from March onwards. Figures show coefficient for the impact of media salience (measured by no. immigration keywords in online archives) over past 21 days on dependent variables representing high or increased concern about immigration. Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions. Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 35: Heterogeneity by region/area, education, and employment status

	Impact of media salience (online archive keywords)				
	Dep var: high concern		Dep var: increased concern		
Sub-samples	β	*c*	β	c	N
West	0.070***	*0.914****	0.084***	*0.317****	*3,621*
	(0.022)	*(0.127)*	(0.023)	*(0.119)*	
East	0.036	*0.681****	0.063*	*-0.003*	*1,322*
	(0.036)	*(0.213)*	(0.037)	*(0.197)*	
Distance from city centre					
< 10km	0.026	*0.798****	0.059*	*0.317**	*1,672*
	(0.028)	*(0.189)*	(0.032)	*(0.167)*	
10-24km	0.128***	*1.147****	0.079**	*0.285*	*1,437*
	(0.039)	*(0.208)*	(0.038)	*(0.191)*	
25-39km	0.066	*0.524*	0.085	*-0.167*	*755*
	(0.052)	*(0.318)*	(0.056)	*(0.260)*	
40km+	0.075*	*0.851****	0.128***	*0.354*	*1,043*
	(0.041)	*(0.241)*	(0.043)	*(0.245)*	
Education level					
Up to lower secondary	-0.017	*1.024***	-0.019	*0.379*	*359*
	(0.074)	*(0.403)*	(0.054)	*(0.325)*	
Middle vocational	0.094***	*0.757****	0.059**	*0.316***	*2,484*
	(0.028)	*(0.154)*	(0.029)	*(0.139)*	
Higher vocational	0.054	*0.206*	0.158***	*0.083*	*733*
	(0.046)	*(0.293)*	(0.051)	*(0.254)*	
Higher education	0.048	*0.275*	0.102***	*0.599***	*1,367*
	(0.031)	*(0.202)*	(0.036)	*(0.277)*	
Employment status					
Employed	0.069***	*0.986****	0.109***	*0.322***	*3,006*
	(0.022)	*(0.139)*	(0.025)	*(0.127)*	
Not working	0.083	*1.117****	0.114*	*0.013*	*583*
	(0.058)	*(0.314)*	(0.063)	*(0.279)*	
Retired	0.048	*0.636****	-0.029	*0.018*	*1,305*
	(0.043)	*(0.225)*	(0.037)	*(0.212)*	

Lexis Nexis, Spiegel Online, Die Welt, GSOEP, Destatis. Interviews from March onwards. Figures show coefficient for the impact of media salience (measured by no. immigration keywords in online archives) over past 21 days on dependent variables representing high or increased concern about immigration. Controls for monthly migration inflows, education level, sex, age, satisfaction with household income, employment status, state, and concerns about economic development and own financial situation included in all regressions. Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 36: Proportion of political engagement sub-groups at each immigration concern level, 2014-2015

	Concern about immigration to Germany								
	2014					**2015**			
	None	Some	High	N	Increase 14-15	None	Some	High	N
Interest in politics (in 2014)									
Strong / very strong	37.7%	39.6%	22.7%	3,849	23.1%	30.5%	41.8%	27.7%	3,849
Not much / not at all	25.3%	44.1%	30.6%	4,452	23.5%	19.9%	43.9%	36.2%	4,452
Party support (in 2014)									
None / don't know	26.2%	43.3%	30.6%	3,832	24.1%	20.1%	43.8%	36.1%	3,832
CDU / CSU	25.9%	45.8%	28.3%	1,889	23.4%	21.0%	44.3%	34.8%	1,889
SPD	37.1%	41.3%	21.5%	1,314	22.1%	31.0%	43.8%	25.3%	1,314
Greens, Alliance90	64.6%	30.6%	4.8%	540	23.7%	52.2%	39.4%	8.3%	540
The Left	36.6%	35.8%	27.6%	344	23.8%	28.8%	37.5%	33.7%	344
FDP (incl. mixed)	53.5%	26.8%	19.7%	127	28.3%	38.6%	31.5%	29.9%	127
Other / mixed (ideologically unclear)	34.4%	41.4%	24.2%	157	15.3%	34.4%	40.1%	25.5%	157
Radical right (incl. mixed)	2.9%	31.7%	65.4%	104	11.5%	4.8%	26.9%	68.3%	104
All respondents	31.1%	42.0%	27.0%	8,307	23.3%	24.8%	42.9%	32.3%	8,307

GSOEP, 2014-2015. Interviews from March onwards.

Table 37: Proportion of socio-economic sub-groups at each immigration concern level, 2014-2015

	Concern about immigration to Germany								
	2014					**2015**			
	None	Some	High	N	Increase 14-15	None	Some	High	N
West Germany	32.6%	41.5%	26.0%	5,946	22.4%	26.8%	43.5%	29.7%	5,963
East Germany	27.2%	43.2%	29.5%	2,361	25.7%	19.7%	41.6%	38.7%	2,367
Distance from city centre									
<10km	32.3%	39.0%	28.8%	2,845	21.4%	26.9%	40.3%	32.8%	2,854
10-24km	30.7%	41.8%	27.6%	2,300	24.0%	24.2%	42.7%	33.1%	2,304
25-39km	28.9%	44.6%	26.5%	1,256	21.7%	24.0%	44.3%	31.7%	1,262
40km+	31.2%	45.0%	23.7%	1,853	26.3%	22.9%	46.0%	31.0%	1,857
Education level									
Up to elementary	18.8%	41.5%	39.7%	624	23.1%	16.0%	40.1%	43.9%	619
Mid-vocational	21.2%	45.4%	33.4%	4,096	23.0%	16.7%	43.6%	39.7%	4,060
High-vocational	33.6%	43.7%	22.7%	1,155	23.6%	27.1%	45.6%	27.3%	1,175
Higher education	50.7%	35.1%	14.2%	2,326	23.9%	39.9%	41.3%	18.8%	2,375
Employment status									
Employed	34.9%	40.1%	25.0%	4,756	23.4%	28.1%	41.5%	30.4%	4,701
Not working	27.7%	41.9%	30.3%	1,183	24.2%	22.2%	40.9%	36.9%	1,093
Retired	24.1%	46.5%	29.4%	2,258	23.0%	19.3%	46.8%	33.9%	2,448
All respondents	31.1%	42.0%	27.0%	8,307	23.4%	24.8%	42.9%	32.3%	8,330

GSOEP, 2014-2015. Interviews from March onwards.

5.5. Conclusion

This chapter has aimed to understand whether media salience played a significant role in the rise in concerns about immigration to Germany during the migrant crisis, amidst a severe migration shock and abnormally high media reporting on immigration. Using several measures of media salience compiled using Lexis Nexis and computer-assisted analysis alongside individual-level survey data (GSOEP), a linear probability model is estimated which provides evidence that across 2015 as a whole, higher media reporting had a significant and positive impact on immigration concerns. I show that these effects are greater when media salience is measured using the number of immigration-related keywords found in articles and headlines than the articles themselves, suggesting that the language selected by media outlets may have an influence over public concerns above the selection of articles to publish based on current events.

However, the media salience data presented in this chapter shows that the main rise and peak of media attention to immigration occurred *after* most GSOEP interviews had been conducted in 2015. Further analysis into the impact of media salience on immigration concerns within the different stages of the 2015 migrant crisis shows that while a significant effect is found between April and May, when migrant boat sinking incidents were being reported, no such effect is found between June and September, where the main rise and peak of media attention and the peak of the crisis itself occurred.

These results contribute to the literature on the impact of media salience on attitudes to immigration by showing that the influence of media salience can be diminished in times of crisis. While the results of this chapter are in line with long-term estimates from 2001-2015 (Czymara and Dochow, 2018) when considering interviews throughout 2015, restricting the analysis to the peak of the migrant crisis and media attention towards it provides no evidence of an impact of media salience on immigration concerns. One possible explanation for this result is that the unusual circumstances of the migrant crisis led to Germans having more personal experience of immigration, migrants, and refugees, and therefore being less susceptible to media influence.

Effect heterogeneity analysis supports this explanation, showing that greater exposure to media salience increased the likelihood of reporting high concern about immigration

during the migrant crisis amongst respondents who may have been less familiar with the issues surrounding the migrant crisis or less exposed to migrant inflows. Meanwhile, the impact of media salience on the likelihood of *increasing* concern about immigration was relatively homogenous across different sub-groups. These results provide some support for the idea that it is those with relatively little exposure to or knowledge about the migrant crisis who are most susceptible to media influence (Esses et al., 2013; McLaren et al., 2018), but the impacts of the media during the migrant crisis were felt across the German population represented by the sample of respondents used in this study.

One limitation of the approach used in this chapter is that GSOEP interviews are much more heavily skewed towards the beginning of the year with lower numbers in September at the peak of the migrant crisis, for example. It is possible that this study underestimates the impact of the migrant crisis on the strength of media effects on immigration concern. However, there is a more encouraging number of interviews during the summer of 2015, when numbers of migrants and refugees arriving into Germany was growing and the crisis was well underway, so at least some sense of the growing migrant crisis should be measured in this chapter.

Another limitation is that the relatively simple concept of "immigration to Germany", which generally appears to capture anti-immigrant sentiments, may not capture the more complex and mixed attitudes towards refugees and immigrants during the unique time period of the migrant crisis. Holzberg et al. (2018) note that in the German discourse during the refugee crisis, refugees were judged based on their "deservingness" or worth, and considered both "threatening and victimised, burdensome and enriching". Even the use of the terms the 'migrant' and 'refugee' became distinct in their connotations during the migrant crisis (Vollmer and Karakayali, 2018). Holmes and Castañeda (2016) argue that the use of the term migrant crisis "delegitimises calls for protection" while refugee crisis "reinforces them".

The findings presented in this chapter have implications on the power the media have over increasing public anxieties about issues during a crisis, especially given the aftermath of the migrant crisis, where support for radical right-wing parties such as the AfD rose dramatically. Indeed, Arzheimer and Berning (2019) find that an increase in the importance of attitudes to immigration was a key driver of support for the AfD. The results imply that during the peak of the migrant crisis media outlets were not

necessarily able to increase immigration concerns above the levels they had reached based on previous media events or the genuine impacts of an ongoing migrant crisis.

Chapter 6: Conclusion

This thesis has presented evidence on the impact of responses to economic and demographic crises from governments and the media on attitudes to immigration, anxieties, and hostility toward minorities. Using difference-in-differences analysis on panel data sets, I have shown that austerity and welfare cuts have causal impacts on levels of racially or religiously motivated crime and general concerns about immigration. I have also presented evidence using original media salience data that while media attention toward immigration played a role in increasing concerns about immigration during the 2015 migrant crisis, there is no evidence to suggest that the rise in media attention led to increases in concerns at the peak of the crisis.

In chapter three, the impact of a 2005 reform and cut to unemployment benefits in Germany on individuals' concerns about immigration is explored. Using individual-level panel data (GSOEP), difference-in-differences analysis including individual and year fixed effects shows that being directly affected by the Hartz IV reform (i.e. living in a household with at least one adult who was long-term unemployed throughout 2003-2005) caused increases in concerns about immigration to Germany. These results provide significant evidence that restrictive reforms to the welfare state can increase natives worries about immigration, and may provide support for welfare strain theories of economic self-interest where individuals who need the welfare system the most are more opposed to immigration over fears immigrants will put strain on the system (Facchini and Mayda, 2009, 2012; Hainmueller and Hiscox, 2010; Huber and Oberdabernig, 2016).

These findings present causal evidence that personal financial shocks increase negative immigration attitudes, and support descriptive evidence that other forms of personal financial shocks increase negative immigration attitudes (Braakmann et al., 2017). This evidence also contributes to a broader literature on whether economic conditions, such as economic downturns and unemployment rates, impact attitudes to immigration. The evidence contradicts studies which show that strain or downturns have no impact on hostility or violence toward foreigners (Krueger and Pischke, 1997; Green et al., 1998) and supports studies which find that higher unemployment rates or economic downturns cause increases in hostility toward immigrants and foreigners (Medoff, 1999; Falk et al., 2011; Gang et al., 2013; Kwak and Wallace, 2018; Anderson et al., 2020). I show that

economic strain can have indirect impacts on attitudes and hostility toward immigrants and foreigners through cuts to benefits caused by high unemployment in the case of chapter three, and a large national debt following the 2008 financial crisis in chapter four.

In chapter four, I attempt to understand how the austerity programme in the UK impacted hostility and prejudice toward minorities. To measure this, I use police recorded racially or religiously motivated (RRM) crimes for each Community Safety Partnership (CSP) area in England and Wales (Home Office, 2018b), and data on the estimated financial losses per working age adult in each local authority area from welfare reforms associated with the austerity programme (Beatty and Fothergill, 2013). To estimate the impact of greater austerity losses on hostility between ethnic groups I use a difference-in-differences model with a continuously-varying treatment intensity consisting of scaled total loss (£) per working age adult from four welfare reforms implemented in April 2013, including CSP and year fixed effects. The findings show significant evidence that the austerity programme caused an increase in RRM crime, while similar results are not found for other types of crime, suggesting the effect is unique to prejudice-driven in hate crimes. I also find no evidence that this hostility is driven by individual benefit recipients, as individual-level data (Understanding Society, European Social Survey) shows no evidence that benefit recipients became more anti-immigration or generally angry or dissatisfied as a result of the welfare reforms.

This chapter contributes to a varied body of research on the impact of the UK's austerity programme (Harris, 2014; Barnes et al., 2016; Loopstra et al., 2016; Edmiston, 2017; Lambie-Mumford and Green, 2017; Cummins, 2018), and shows that in addition to worsening health, education and social outcomes, austerity also played a role in increasing hostility and divisions between groups as evidenced by the increase in RRM crimes. Furthermore, these results suggest that financial shocks are able to worsen attitudes to immigrants or minorities at the local level as well as the individual level, and provide support for realistic group conflict explanations of rising hate crime and hostility toward minority out-groups, where scarcity of resources lead to perceived competition between groups, and increase prejudice and hostility between certain in-groups and out-groups (White, 1977; Bobo, 1983; Craig, 2002; Hall, 2013). While chapter three shows that scarcity of resources at the individual level can increase worries about immigration, chapter four shows that increases in the scarcity of resources in local areas where the

population are worse hit by large-scale benefit reforms can lead to greater rises in racially or religiously motivated hate crimes than in areas less affected by the reforms.

Chapter five moves away from the impact of welfare policy on attitudes to immigration and investigates the influence of media attention during a genuine migrant crisis on concerns about immigration. Following previous work which finds evidence that greater media salience of immigration causes increases in immigration concerns and other anti-immigration attitudes (Boomgaarden and Vliegenthart, 2007, 2009; Fitzgerald et al., 2012; van Klingeren et al., 2015; Czymara and Dochow, 2018; Thesen, 2018; Benesch et al., 2019), this chapter presents a contribution by focusing on the relationship between media salience and immigration concerns during an extraordinary period of high immigration in Germany, the 2015 migrant crisis. I form a dataset which combines GSOEP individual survey responses on concern level about immigration to Germany with the number of articles mentioning immigration and the total number of times immigration is mentioned in the 21 days leading up to a respondent's interview date in 2015.

Using a Linear Probability Model, I find that during the migrant crisis year of 2015, media salience did influence immigration concerns. However, when the main rise and peak of media attention towards the migrant crisis (and the actual crisis itself) is isolated (June to September), no evidence of a significant impact is found. It is possible that the effects are crowded out by genuine personal experience or interaction with migrants and refugees as they begin to arrive into Germany, since previous research shows that media attention is particularly effective on the immigration attitudes of those with little personal experience of it (Esses et al., 2013; McLaren et al., 2018). On the other hand, it may be that Germans became fatigued with immigration news by the time media attention peaked, meaning the large increase in the number of articles about immigration and the frequency that an immigration-related word was mentioned during this period had little effect on simultaneously rising immigration concerns.

The evidence presented in this thesis has shed light on how responses to crises can affect attitudes to immigration. Chapter three and four show that immigration and immigrants can be blamed for more complex economic or political issues which cause natives to 'lose out', for example through benefits cuts. Chapter five shows that media salience does have an impact on immigration concerns during a genuine migration shock, but the role it plays may be limited by personal experience and interaction with migrants and refugees, or by information fatigue. A general implication of this evidence is that misinformation or a lack

of information can lead to attitudes to immigration being swayed more easily by factors other than genuine migration inflows.

In chapters three and four, welfare reforms which were not caused by immigration led to increases in anxiety and hostility toward migrants and minorities. On one hand, this may be because natives are led to believe that immigration is the true cause of their change in circumstances. On the other hand, it could be that personal financial shocks and strain lead to individuals and communities becoming more defensive of their resources and opportunities to the perceived threat of immigration. These are perceptions which may be easily manipulated by public figures and the media should it suit their interests. In chapter five the results suggest that while individual immigration concerns were increased by additional media attention in April and May before the peak of the crisis, once the crisis was in full swing and the reality of hundreds of thousands of refugees being settled in their country sank in, the media was unable to significantly sway immigration concerns. In all three cases, a lack of good quality information appears to drive the impacts on immigration concerns and hostility.

The findings presented in chapters three and four could be used by future policy makers when designing and implementing changes to welfare policy, specifically when cutting benefits. Given the recent implications of prejudiced or anti-immigration views (e.g. Brexit or the rise of radical right-wing parties), it is important to consider the ramifications of policy on intergroup tensions and distastes for immigration. Another possible application of this research is in the justification of promoting high quality education and public information on immigration and immigrants. In periods where there is no mass influx of immigrants, the research presented in this thesis shows that natives may misinterpret hardships which in reality are caused by economic conditions as being caused by immigration. To improve intergroup relations and reduce prejudice and hate crime, and to reduce public anxieties about immigration and enable policy makers to implement optimal immigration policy, this research may be used to justify an investment in better education and information about immigration.

Clearly, there are very real negative outcomes when a significant proportion of native populations hold anti-immigrant views or are worried about immigration. In the UK, racially or religiously motivated hate crimes recorded by the police increased by 133% between 2011/12 and 2018/19 (Home Office, 2019). Across the world right-wing populist parties and movements have been gaining traction as evidenced by the Brexit

vote in the UK, the election of Donald Trump in the US, and the rise of AfD in Germany based on anti-immigration agendas. In this context, the evidence presented in this thesis and the topic of attitudes to immigration in general hold significant relevance and importance to how we progress as a society through times of crisis and uncertainty.

Chapter 7: Appendices

7.1. Appendix to Chapter 3

7.1.1. Question on individual concerns in the SOEP survey

This appendix presents English translations of a section of questions in the SOEP survey which are used to measure attitudes in chapter 3 of this thesis.

Table 38: Questions on individual concern in SOEP

How concerned are you about the following issues?	Very concerned	Somewhat concerned	Not concerned at all
The economy in general	☐	☐	☐
Your own economic situation	☐	☐	☐
Your own provision for old age	☐	☐	☐
Your health	☐	☐	☐
Environmental protection	☐	☐	☐
The impacts of climate change	☐	☐	☐
Maintaining peace	☐	☐	☐
Crime in Germany	☐	☐	☐
Social cohesion in society	☐	☐	☐
Immigration to Germany	☐	☐	☐
Hostility towards foreigners or minorities in Germany	☐	☐	☐
If you are employed: Your job security	☐	☐	☐

Source: https://paneldata.org/soep-core/inst/soep-core-2016-pe/148

7.1.2. Evidence to support use of dependent variable as measure of anti-immigration attitudes.

This appendix provides correlations between the dependent variable of this chapter (degrees of concern about immigration to Germany) and other variables which can help indicate how well this variable measures anti-immigration sentiments. Table 39 presents Spearman correlation coefficients which indicate that the dependent variable is indeed measuring anti-immigration attitudes. Higher immigration concern is strongly correlated with right-leaning politics and a lack of trust in others. It is also correlated with feelings of dissatisfaction or lack of influence, and not having any friends from other countries. Table 40 also supports the use of the immigration concern variable as the outcome in this chapter, as it shows correlation with personality questions linked to neuroticism and conscientiousness, both of which have been found to be associated with anti-immigration attitudes (Gallego and Pardos-Prado, 2014).

Finally, Table 41 shows that while immigration concern has been positively correlated with concerns about all other issues respondents were asked about before, during and after the Hartz IV reform, the strongest correlation is with concerns about crime in Germany, which has previously been linked to higher immigration concern (Couttenier et al., 2019). This table also shows that some of the correlations between immigration concern and other concerns have increased over time, however while the link between concerns about immigration and hostility to foreigners have risen since the early 2000s, correlation to concerns about crime remained the greatest by far.

Table 39: Correlations between dependent variable and other opinions.

Correlations with immigration concern question	Survey year	Spearman (ρ)
Personal beliefs, satisfaction, political leaning		
Compared to other people, I have not achieved what I deserve	2005	0.1394*
If a person is socially or politically active, he/she can have an effect on social conditions	2005	-0.1076*
Satisfaction with life at present (0: low, 10: high)	2005	-0.1157*
Political leaning (0: completely left, 10: completely right)	2005	0.2103*
Proximity to foreigners		
Has close friend from outside of Germany or different country to respondent	2001	-0.0778*
Trust and opinions of others		
On the whole, you can trust people	2003	-0.1742*
Nowadays, can't trust anyone	2003	0.2111*
Caution towards strangers	2003	0.1569*

Figures show pairwise correlation coefficients for each variable against responses for the immigration concern question (1: very concerned, 0: somewhat concerned, -1: not at all concerned)

* $p < 0.01$

Table 40: Correlations between dependent variable and personality traits

Correlations with immigration concern question	Survey year	Spearman (ρ)
Big five personality traits		
Agreeableness (factor score)	**2005**	**-0.0047**
Agreeableness: Sometimes a bit rude/coarse with others (reversed)	2005	*-0.0363**
Agreeableness: Forgiving	2005	*-0.0081*
Agreeableness: Considerate and kind to others	2005	*0.0360**
Openness (factor score)	**2005**	**0.0045**
Openness: Original, comes up with new ideas	2005	*0.0228*
Openness: Values artistic, aesthetic experiences	2005	*-0.0349**
Openness: Imaginative	2005	*0.0159*
Extraversion (factor score)	**2005**	**0.0615***
Extraversion: Communicative, talkative	2005	*0.0487**
Extraversion: Outgoing, sociable	2005	*0.0825**
Extraversion: Reserved (reversed)	2005	*-0.0094*
Conscientiousness (factor score)	**2005**	**0.1226***
Conscientiousness: A thorough worker	2005	*0.1149**
Conscientiousness: Somewhat lazy (reversed)	2005	*0.1120**
Conscientiousness: Effective & efficient in completing tasks	2005	*0.0827**
Neuroticism (factor score)	**2005**	**0.0959***
Neuroticism: A worrier	2005	*0.1750**
Neuroticism: Somewhat nervous	2005	*0.0684**
Neuroticism: Relaxed, able to deal with stress (reversed)	2005	*-0.0129*

Figures show pairwise correlation coefficients for each variable against responses for the immigration concern question (1: very concerned, 0: somewhat concerned, -1: not at all concerned)

* $p < 0.01$

Table 41: Correlations between dependent variable and concerns about other issues

	Immigration to Germany		
	2000-2002	2003-2005	2006-2008
Hostility to foreigners	0.123*	0.222*	0.278*
Crime	0.415*	0.478*	0.512*
Economic development	0.271*	0.283*	0.341*
Finances	0.195*	0.211*	0.230*
Environment	0.118*	0.145*	0.142*
Job Security	0.176*	0.165*	0.194*
Peace	0.170*	0.120*	0.236*
Health	0.148*	0.162*	0.172*

Figures show Spearman correlation coefficients between degree of concern about immigration and degree of concerns about other topics reported by respondents using GSOEP data for pre-Hartz IV (2000-2002), Hartz IV (2003-2005), and post-Hartz IV periods (2006-2008).

* $p < 0.01$

7.2. Appendix to Chapter 4

7.2.1. Supporting data

Table 42: No. benefit claimants in local authorities, 2013 and 2016.

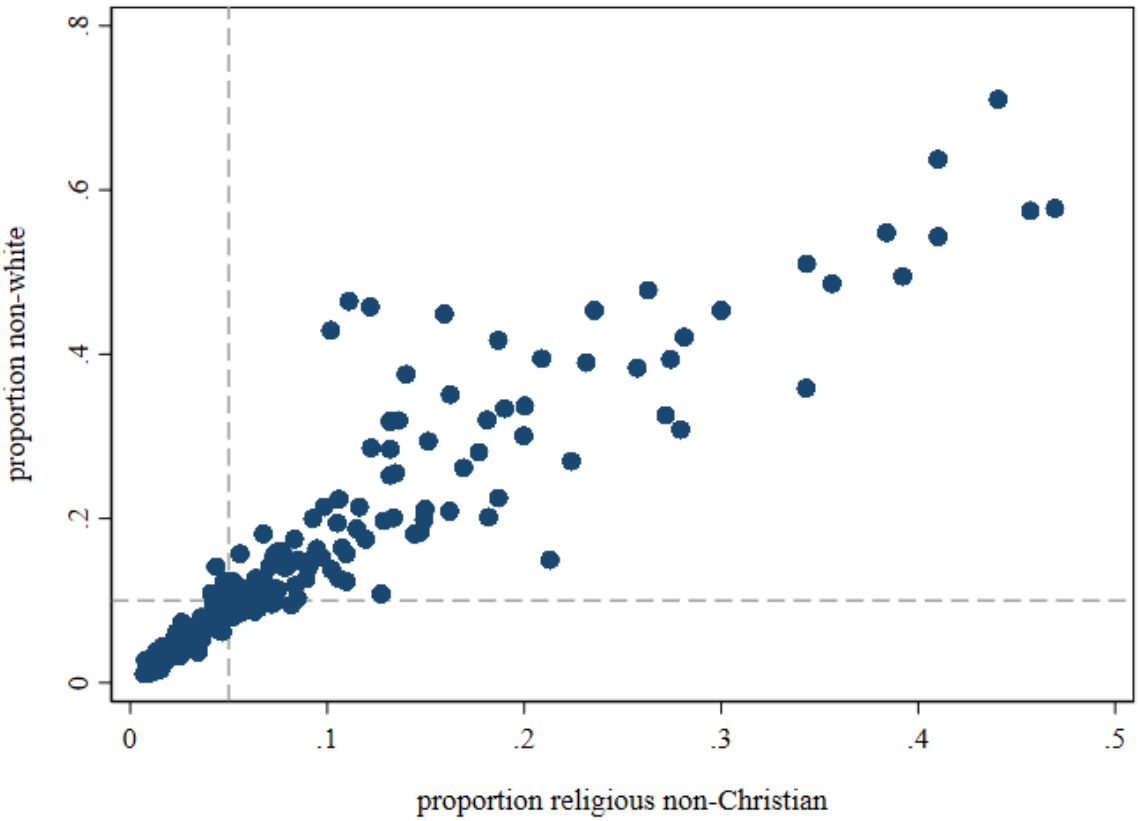
	2013 (quarterly average)		2016 (quarterly average)	
	Top 20 LAs	No. claimants	Top 20 LAs	No. claimants
1	Birmingham	256,071	Birmingham	228,748
2	Leeds	144,677	Leeds	127,058
3	Liverpool	137,696	Liverpool	116,362
4	Manchester	136,645	Manchester	115,205
5	County Durham	108,958	County Durham	98,098
6	Sheffield	107,390	Sheffield	98,069
7	Bradford	102,301	Bradford	89,558
8	Cornwall	89,203	Cornwall	79,675
9	Bristol, City of	85,904	Bristol, City of	72,534
10	Nottingham	78,855	Nottingham	68,912
11	Kirklees	74,416	Hackney	64,969
12	Sandwell	73,771	Kirklees	64,855
13	Lambeth	73,331	Sandwell	64,713
14	Leicester	73,076	Kingston upon Hull, City of	63,298
15	Kingston upon Hull, City of	72,986	Leicester	62,808
16	Hackney	72,302	Lambeth	62,449
17	Southwark	70,337	Cardiff	61,010
18	Wirral	70,095	Sunderland	60,867
19	Newham	70,078	Wirral	60,218
20	Croydon	69,176	Newham	59,632
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
327	Uttlesford	6,655	Brentwood	5,892
328	Surrey Heath	6,612	Surrey Heath	5,873
329	West Devon	6,470	Uttlesford	5,792
330	Harborough	6,453	Epsom and Ewell	5,677
331	Epsom and Ewell	6,381	Harborough	5,669
332	South Northamptonshire	6,234	South Northamptonshire	5,548
333	Christchurch	5,790	Christchurch	5,295
334	Oadby and Wigston	5,750	Hart	5,147
335	Hart	5,655	Oadby and Wigston	4,935
336	Ryedale	5,491	West Somerset	4,877
337	West Somerset	5,442	South Bucks	4,792
338	South Bucks	5,351	Ryedale	4,737
339	Craven	5,286	Purbeck	4,668
340	Purbeck	5,078	Craven	4,488
341	Melton	5,065	Melton	4,359
342	Eden	4,855	Eden	4,234
343	Ribble Valley	4,737	Ribble Valley	4,079
344	Richmondshire	4,622	Richmondshire	3,901
345	Rutland	2,910	Rutland	2,574
346	City of London	1,350	City of London	1,198

Local authorities ranked by numbers of DWP and housing benefit claimants (quarterly averages). 2013 compared to 2016. Sources: Department of Work and Pensions, 2018; ONS, 2018.

Table 43: No. of CSP areas in each Police Force Area

Region	Police Force Area	No. CSP areas
East	Bedfordshire	3
	Cambridgeshire	6
	Essex	14
	Hertfordshire	10
	Norfolk	7
	Suffolk	4
East Midlands	Derbyshire	9
	Leicestershire	9
	Lincolnshire	7
	Northamptonshire	6
	Nottinghamshire	6
London	London, City of	1
	Metropolitan Police	32
North East	Cleveland	4
	Durham	2
	Northumbria	6
North West	Cheshire	4
	Cumbria	6
	Greater Manchester	10
	Lancashire	14
	Merseyside	5
South East	Hampshire	12
	Kent	12
	Surrey	11
	Sussex	13
	Thames Valley	16
South West	Avon and Somerset	5
	Devon & Cornwall	7
	Dorset	3
	Gloucestershire	6
	Wiltshire	2
Wales	Dyfed-Powys	4
	Gwent	5
	North Wales	6
	South Wales	7
West Midlands	Staffordshire	9
	Warwickshire	4
	West Mercia	5
	West Midlands	7
Yorkshire and the Humber	Humberside	4
	North Yorkshire	2
	South Yorkshire	4
	West Yorkshire	5

Figure 44: Proportion ethnic and religious minorities in each CSP area



ONS. Shows proportion of residents who are non-white and proportion who are religious but not Christian for each CSP area. Cut off lines displayed for non-white population = 10% and religious non-Christian population = 5%.

7.3. Appendix to Chapter 5

7.3.1. Further justification for dependent variable

Table 44: Correlations with dependent variable before and during 2015

	Worried about immigration			
	2010-2014		2015	
Correlation coefficients	Wave	Spearman (ρ)	Wave	Spearman (ρ)
Personal beliefs, satisfaction, political leaning				
Compared to others, have not achieved what I deserve (1: Does not apply - 7: Applies fully)	2010	0.1805*	2015	0.1569*
If socially / politically active, can have effect on social conditions (1: Does not apply - 7: Applies fully)	2010	-0.1602*	2015	-0.2075*
Satisfaction with life at present (0: low - 10: high)	2014	-0.1322*	2015	-0.1331*
Other worries (1: very concerned, 0: somewhat concerned, -1: not at all concerned)				
Worried about job security	2014	0.1936*	2015	0.1759*
Worried about hostility to foreigners	2014	0.2112*	2015	0.1471*
Worried about crime in Germany	2014	0.6001*	2015	0.5484*
Worried about maintaining peace	2014	0.1982*	2015	0.1958*
Worried about environmental protection	2014	0.1146*	2015	0.1194*
Worried about the economy in general	2014	0.2319*	2015	0.2933*
Worried about your own economic situation	2014	0.1503*	2015	0.2339*

GSOEP. Figures show pairwise correlation coefficients for each variable against responses for the immigration concern question (1: very concerned, 0: somewhat concerned, -1: not at all concerned)

* $p < 0.01$

Table 45: Further correlations between dependent variable and other opinions or concerns

		Worried about immigration			
Correlation coefficients	Wave	Spearman (ρ)	Kendall rank (τ_a)	Kendall rank (τ_b)	Polychoric (ρ)
Personal beliefs, satisfaction, political leaning					
Compared to others, have not achieved what I deserve	2010	0.1805*	0.1111*	0.1517*	0.2072
If socially / politically active, can have effect on social conditions	2010	-0.1602*	-0.0989*	-0.1355*	-0.1788
Satisfaction with life at present (0: low, 10: high)	2014	-0.1322*	-0.0808*	-0.1119*	-0.1520
Political leaning (0: completely left, 10: completely right)	2014	0.2313*	0.1396*	0.1968*	0.2571
Proximity to foreigners					
Has close friend from outside of Germany or different country to respondent	2011	-0.0455*	-0.0101*	-0.0428*	-0.1065
Foreigners living in residential area (1: All, 6: None)	2014	0.0281	0.0158	0.0245	0.0387
Trust and opinions of others					
On the whole, you can trust people	2013	-0.2446*	-0.1323*	-0.2250*	-0.3115
Nowadays, can't trust anyone	2013	0.2679*	0.1524*	0.2419*	0.3267
Caution towards strangers	2013	0.2307*	0.1318*	0.2095*	0.2802
Other worries					
Worried about job security	2014	0.1936*	0.1051*	0.1791*	0.2687
Worried about hostility to foreigners	2014	0.2112*	0.1187*	0.1951*	0.2698
Worried about crime in Germany	2014	0.6001*	0.3565*	0.5588*	0.7205
Worried about maintaining peace	2014	0.1982*	0.1133*	0.1805*	0.2502
Worried about environmental protection	2014	0.1146*	0.0632*	0.1050*	0.1495
Worried about the economy in general	2014	0.2319*	0.0902*	0.2192*	0.3872
Worried about your own economic situation	2014	0.1503*	0.0639*	0.1421*	0.2383
Worried about social cohesion in society	2015	0.3014*	0.1655*	0.2793*	0.3862

Figures show pairwise correlation coefficients for each variable against responses for the immigration concern question (1: very concerned, 0: somewhat concerned, -1: not at all concerned)

* $p < 0.01$ (spearman and kendall coefficients only)

Table 46: Further correlations between dependent variable and big five personality questions

		Worried about immigration			
Correlation coefficients	Wave	Spearman (ρ)	Kendall rank (τ_a)	Kendall rank (τ_b)	Polychoric (ρ)
Big five personality traits					
Agreeableness (factor score)	**2013**	**0.0151**	0.0094	0.0118	0.0060
Agreeableness: Sometimes a bit rude/coarse with others (reversed)	*2013*	*-0.0389**	-0.0239*	-0.0328*	-0.0486
Agreeableness: Forgiving	*2013*	*0.0100*	0.0060	0.0085	0.0091
Agreeableness: Considerate and kind to others	*2013*	*0.0635**	0.0373*	0.0556*	0.0690
Openness (factor score)	**2013**	**-0.0233**	-0.0147	-0.0184	-0.0273
Openness: Original, comes up with new ideas	*2013*	*0.0124*	0.0073	0.0103	0.0181
Openness: Values artistic, aesthetic experiences	*2013*	*-0.0773**	-0.0478*	-0.0646*	-0.0899
Openness: Imaginative	*2013*	*0.0018*	0.0010	0.0014	-0.0003
Extraversion (factor score)	**2013**	**0.0414***	0.0259*	0.0325*	0.0499
Extraversion: Communicative, talkative	*2013*	*0.0471**	0.0285*	0.0405*	0.0569
Extraversion: Outgoing, sociable	*2013*	*0.0785**	0.0480*	0.0669*	0.0912
Extraversion: Reserved (reversed)	*2013*	*-0.0621**	-0.0382*	-0.0524*	-0.0662
Conscientiousness (factor score)	**2013**	**0.1407***	0.0874*	0.1116*	0.1398
Conscientiousness: A thorough worker	*2013*	*0.1173**	0.0678*	0.1046*	0.1394
Conscientiousness: Somewhat lazy (reversed)	*2013*	*0.1447**	0.0870*	0.1245*	0.1673
Conscientiousness: Effective & efficient in completing tasks	*2013*	*0.0977**	0.0576*	0.0854*	0.1108
Neuroticism (factor score)	**2013**	**0.1346***	0.0841*	0.1051*	0.1522
Neuroticism: A worrier	*2013*	*0.2289**	0.1415*	0.1929*	0.2636
Neuroticism: Somewhat nervous	*2013*	*0.0934**	0.0576*	0.0785*	0.1089
Neuroticism: Relaxed, able to deal with stress (reversed)	*2013*	*-0.0011*	-0.0006	-0.0008	0.0002

Figures show pairwise correlation coefficients for each variable against responses for the immigration concern question (1: very concerned, 0: somewhat concerned, -1: not at all concerned)

* $p < 0.01$ (spearman and kendall coefficients only)

7.3.2. Identification supporting data

Figure 45: Quarterly[26] distribution of respondents by socio-economic characteristics (2011-2015)

[26] Fourth quarter of each year is omitted due to low numbers of interviews.

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