Does Migration Cause Extreme Voting? *

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Abstract

The 2004 accession of 8 Eastern European countries (plus Cyprus and Malta) to the European Union (EU) was overshadowed by feared mass migration of workers from Eastern Europe due to the EU's rules on free mobility of labour. While many incumbent EU countries imposed temporary restrictions on labour mobility, the United Kingdom did not. We document that following EU accession more than 1 million people (ca. 3% of the UK working age population) migrated from Eastern Europe to the UK. Places that received large numbers of migrants from Eastern Europe saw small, but statistically significant increases in the vote shares for the UK Independence Party (UKIP) in elections to the European Parliament. We argue that these estimates are likely lower bounds of the effect of migration on overall anti-European sentiment. We show that the migration wave lowered wages at the bottom end of the wage distribution and contributed to increased pressure on public services and housing.

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1 Introduction

After decades of deepening of the political, economic and social ties between the European Union (EU) and its member countries, the referendum on the membership of the United Kingdom in the European Union held on 23 June 2016 marks a turning point in European history. Economists and political scientists rushed to interpret the referendum results and many blamed immigration, especially after the 2004 EU enlargement to Eastern Europe, as a key factor affecting voter behavior. Since free mobility of labour is a right enshrined in the DNA of the EU, analyzing how it affects vote patterns via a variety of mechanisms is of utmost importance to understand the future viability of the current institutional setup of the EU.

Yet, the merely cross sectional nature of analyses of the referendum result should be treated with some caution as concerns about omitted variables and reverse causality are inherent. This paper is the first to use quasi-experimental variation to shed light on the question to what extent immigration was a driving force behind the decision of the UK to leave the European Union. We make headway by performing a panel-level analysis using a proxy for the underlying support of the Leave campaign: the electoral support for the United Kingdom Independence Party (UKIP) in elections for the European Parliament from the late 1990s to the mid 2010s. Further, addressing concerns about causality, we exploit the 2004 EU enlargement to Eastern Europe as a natural experiment providing us with variation in the exposure of local authority districts to EU migration.[1] Our findings suggest that the strongly anti-EU party UKIP gained significant support in areas that received a lot of migrants from Eastern Europe. We show that in these places voters shifted away from the explicit pro-European parties towards the anti-EU parties. Using individual level micro-data, we show that support for British EU membership eroded by up to 20% over a short 10 year period in local authority districts that saw significant migrant inflows. The rise of UKIP in the European Parliament gave the party also more influence in domestic politics and put the two-party political system in the UK under significant strain. The challenge arising from UKIP is seen as having contributed to David Cameron being pushed by his own Conservative Party to call for a referendum in the first place.

[1] The UK consists of 382 local authority (LA) districts, with an average population of ca. 157,000. We exclude Northern Ireland and Gibraltar, and use 380 LAs in our empirical analysis.

Measuring changes in political preferences over time in the UK political system is very challenging. The underlying first-past-the-post electoral system for the British House of Commons implies that voters are strategic in casting their votes, as otherwise, their vote is ultimately lost. This implies that protest parties or single issue parties, such as UKIP, receive few votes in regular parliamentary elections for the British House of Commons. In fact, despite coming out first overall with an overall 29% vote share in the European Parliamentary elections in 2014, UKIP had not won a single seat in a regular election to the British House of Commons.[2] Another challenge for coherent empirical work is the review of electoral boundaries that affects almost every parliamentary election. This leads to gerrymandering and regular changes in the electoral boundaries and thus to the recomposition of the electorate between parliamentary elections, making it very difficult to map political preferences across space over time. Lastly, even if we had cross-walks, they would be of limited use because the first-past-the-post system bars the aggregation of votes across space, without introducing a significant amount of noise.[3]

We overcome these issues by focusing on European Parliament (EP) elections. Following the European Parliamentary Elections Act of 1999, the 1999 European parliamentary elections were the first where (also) the UK used a system of proportional representation. Even though the election results after 1999 are reported at a different level of spatial detail, the fact that a system of proportional representation is used allows a fairly safe aggregation into consistent spatial units to perform a panel analysis stretching across all four EP elections, 1999, 2004, 2009, and 2014, that we analyze. We complement this analysis with individual level micro data pertaining to electoral support for UKIP in Westminster constituency elections and support for British EU membership obtained from the 2005, 2010 and 2015 British Election Study (BES).

The second main avenue by which we make progress is by using immigration data *by country of origin* broken down across 380 British local authority districts. Free movement of labour is one of the four economic freedoms guaranteed by the EU common market: free movement of goods, services, labour and capital. With the EU accession of 10 new member countries in 2004, the United Kingdom, as opposed to many other continental European

[2]The only UKIP seat in Parliament came from a defector from the Conservative Party, who then won his re-election in the 2015 elections as a UKIP candidate, but left UKIP again in March 2017.

[3]Such cross-walks would allow us to study electoral results over time and space only for the set of constituencies whose boundaries never changed over the sample period.

countries, decided not to impose temporary restrictions on the free movement of labour. The possibility of temporary restrictions was included as part of the accession treaties because neighbouring countries, such as Germany and Austria feared significant pressures on local labour markets as a result of expected migration from Eastern Europe. We can thus use the timing of the EU accession in 2004, together with a measure of exposure to EU migration, to perform a difference-in-difference analysis. The fact that we have data for EP elections in 1999 and 2004, before the influx of migrants from Eastern Europe, allows us to present evidence in support of the underlying common-trends assumption.

While migration is expected to yield overall gains in living standard, there are likely to be distributional effects. The first main mechanism is through the labor market: low skilled migrants from the EU accession countries may add pressures on the labor market, resulting in weaker wage growth, especially in the low skill segment. Population increases put additional stress on the existing infrastructure: this is the fiscal burden channel.[4] The demand for public services, for schooling, housing and health care increases. The UK, with its easily accessible universal health care system NHS (National Health Service), while being spared spending cuts in the immediate aftermath of the financial crisis, seems to have struggled to keep up with increasing demand following stronger immigration. Similarly, the UK is known for very restrictive zoning laws and regulation, making the housing supply very inelastic not only in London, but also in the rest of the country, making home ownership – central to Britain's vision of "a country of homeowners" – less attainable.

The third contribution of this paper consists of an in-depth analysis of the presence of these mechanisms. In the first step, we document that migration from EU accession countries is associated with downward pressure on wage levels, concentrated at lower quantiles of the wage distribution. We also show that migration is associated with significant increases in the demand for benefits. This provides evidence suggesting that the two dominant channels highlighted in the literature are present in the context of this particular migration shock.

We go a step further in studying the distributional effects of the migration from EU accession countries, through newly acquired data on key socio-economic indicators across 344 English and Welsh local authorities, derived from the 2001 and 2011 census. These

[4]See for example Hainmueller and Hiscox (2010), who study the relative effect of labor market competition versus access to services on the perception of immigrants to the US.

data provide detailed tabulations that are disaggregated by *country of origin*, thus allowing us to study the effects of migration on outcomes *within* and *between* different country-of-origin groups. It is important to highlight that such an analysis is usually not possible as administrative data, e.g. on home ownership, demand for benefits, or on the labor market is not published by country-of-origin at such a regionally disaggregated level. The *between country-of-origin* group analysis allows us to study the effect that migration has on British-born individuals vs migrants from different countries-of-origin. This sheds light on the extent to which migration may affect the composition of demand for benefits or services.

Similarly, the *within country-of-origin* group analysis allows us to explore how, for example, rates of long term unemployment among British nationals were affected in areas that experienced a significant inflow from EU accession countries relative to rates of long unemployment of British nationals in areas that did not see a significant inflow in migration. This provides insights reagrding the relative performance of natives in areas affected by migration, relative to natives who were less affected by migration.

The rest of the paper is organized as follows. Section 2 discusses the existing literature and how our analysis complements and goes beyond exiting work. Section 3 provides further institutional context and describes our data sources. Section 4 explains our empirical strategy. Section 5 presents the main results on election results in EP elections in 1999, 2004, 2009 and 2014. Section 6 looks at mechanisms that potentially explain the shift in anti-EU sentiments. Section 7 concludes.

2 Literature

This paper relates to an emerging literature that explores the relationship between exposure to globalization and political outcomes. The focus of this literature is to understand the rise of parties on the extreme ends of the political spectrum.[5] Some of these papers focus on the political consequences due to increased competition stemming from trade. Dippel et al. (2015) link votes for far-right parties in Germany to trade integration with China and Eastern Europe. In the context of the US, Autor et al. (2016) argue that rising trade integration between the U.S. and China contributed to the polarization of U.S. politics. These

[5] Alesina et al. (2000) provide a theoretical rationale for the link between economic integration and political disintegration.

papers thus explicitly focus on globalisation's impact in form of exposure of countries to foreign produced products due to free flow of goods.

The effect of immigration on voting is the subject of another growing literature. It is important to understand the focus of different papers to understand our contribution. Mayda et al. (2016) look at the link between immigration to the US and voting for Democrats versus Republicans and find that Democrats generally benefit more from migration. Barone et al. (2016) look at national elections in Italy and how migration (from mainly Northern Africa) affected vote shares of Italy's center-right coalition. Both of these papers focus on established right-wing parties or coalitions and not on anti-immigration parties per se and they study mostly the impact of illegal immigration, which may be qualitatively different compared to the type of migration that is supported by an institution such as the European Union.

Some papers focus rather on refugees, whose migration is not directly linked to globalization. One example is Steinmayr (2016)'s analysis which suggests that settlement of refugees across Austria *decreased* popular support for far-right, nationalist, anti-immigration parties. Otto and Steinhardt (2014) document a positive effect of immigration on electoral support for anti-immigrant parties using variation across city districts in Hamburg. Harmon (2015), using Danish data, shows that increases in local ethnic *diversity* lead to rightward shifts in election outcomes by shifting electoral support away from traditional 'big government' left-wing parties and towards anti-immigrant nationalist parties.

The paper that is arguably closest to ours is Halla et al. (2017). They look at the rise of the Austrian far-right FPO, using municipality-level vote shares from general elections in Austria in 1979, 1983, 1990, 1994, 1999, 2002, 2013, combined with municipality-level data on the share of residents without Austrian citizenship ('immigrants') from the Austrian censuses of 1971, 1981, 1991, 2001, and 2011. Their main analysis employs fixed-effect regressions where fixed effects take care of time-constant unobserved heterogeneity between municipalities. They also estimate instrumental-variables regressions. Their dependent variable is a change in FPÖ vote shares over 20 years (or 15 years or 10 years) that is regressed on the corresponding change in the municipality-level immigrant share, which in turn is instrumented by the percent change in the predicted share of immigrants, based on distribution of immigrants in the year 1971, at the beginning of the sample period

('shift-share instrument'). Their paper finds statistically significant effects of immigration explaining roughly a tenth of the regional variation in vote changes.

Our paper complements and extends Halla et al. (2017) in several dimensions. First, we focus on the 'natural experiment' of EU Eastern Enlargement in 2004 which brought a wave of comparatively low-skilled workers from Eastern Europe into the UK labour market in a short period of time. The fact that the migration wave is directly linked to the EU's principle of free mobility of labour makes it a globalization 'experiment' that naturally links with anti-EU votes in the form of UKIP votes for the European Parliament and expressed anti-EU preferences. Second, the rise of UKIP is very closely related to the UK Referendum on leaving the EU, and thus relates to a watershed moment in the history of the EU and constitutes a prime example of backlash against globalization.[6] Third, our data allow us to look at a richer set of mechanisms linking immigration to vote patterns. In particular, we can analyze various mechanisms by country-of-origin, at a regionally highly disaggregated level. The latter is important in view of arguments that natives might compare their own well-being to that of immigrants (see e.g. Akay et al., 2014).[7]

While vote shares and voter preferences are our primary outcomes of interest, when looking at economic mechanisms – such as effects on wages and (un)employment – we connect also to a large literature on immigration and labor market outcomes (see Borjas (2014) and Card and Peri (2016) for a debate on the state of knowledge). Going beyond labor market outcomes, evidence on potential channels for Euroscepticism in the UK comes from two papers, looking at two specific outcomes. While Bell et al. (2013) study the same 'natural experiment' of EU enlargement in 2004, they concentrate on crime, but do not consider UKIP vote shares and other outcomes or channels for anti-EU sentiment, as we do. They document that migration from Eastern Europe had a small *negative* impact on property crime, but no effect on violent crime. Changes in crime rates are thus not a likely channel explaining the increase in anti-EU sentiment following the Eastern European migration shock. Giuntella et al. (2015) analyze pressure on NHS services from migration to the UK. Somewhat surprisingly, they find a reduction in NHS waiting times in areas

[6] Also the first "golden age of globalization", from 1815 to 1914, was increasingly marked by the beginnings of a "backlash" against globalization, as summarized by Findlay and O'Rourke (2008), even before the outbreak of WW I.

[7] Cavaille and Ferwerda (2016) argue that natives may envy non-natives even if there is no direct effect on them.

with high migration, but an increase in areas with inflow of UK nationals moving within the UK. Our paper also looks at effects on the provision of public services as a channel.

Turning to our main treatment variable, our measure of the EU accession shock captures a mixture of explicitly economic as well as more indirect mechanisms that have been highlighted in the political science literature. Hainmueller and Hopkins (2014), in a review piece, bring together the two main underlying literatures in political economy and political psychology, explaining the development of attitudes towards immigration among natives. They suggest that personal economic circumstances only have a second order effect on political attitudes. Rather, there appear to be systematic interaction effects as discussed in Newman (2013). The central hypothesis, on which we base our measure of exposure to migration from EU accession countries, takes into account that a large influx of an immigrant group will be perceived as more of a threat among natives in places where the immigrant group had previously been largely absent.

Finally, our paper is also related to previous work on the rise of the UK Independence Party (UKIP), mainly in political science. Whitaker and Lynch (2011) and Clarke et al. (2016) look at voting patterns for UKIP and document that, not surprisingly, Euroscepticism combined with anti-immigration sentiments is the main driving force of UKIP success. Their work, however, does not exploit the accession experiment in 2004 to identify a causal effect of migration on anti-EU sentiment.[8]

In summary, our main contributions are threefold: first, our focus is on the political economy and economic effects of the institutionalized right to migration within the EU; second, we look at the UK, the first country that voted to leave the EU and where migration has been a topic of heated debate; third, we use regionally disaggregated data by country-of-origin, unlike the previous literature.

3 Context and a First Look at the Data

In this section, we describe the historical context and present our data.

[8] In Europe more broadly, Arzheimer (2009) analyzed contextual factors explaining extreme right voting in Western Europe in the period 1980-2002.

3.1 The European Union, Globalisation and Backlash

The European Union traces its origins to the 1950s. In 1957, (West) Germany, Italy, France and the 3 Benelux countries signed the Treaty of Rome, which created the European Economic Community (EEC) and established a customs union. In Article 48, the Treaty of Rome states:

> Freedom of movement for workers shall be secured within the Community by the end of the transitional period at the latest. Such freedom of movement shall entail the abolition of any discrimination based on nationality between workers of the Member States as regards employment, remuneration and other conditions of work and employment.

Free mobility of labour is thus enshrined in the DNA of the EEC and it's current incarnation, the European Union.

The UK negotiated access to the single market during the 1960s. The process was interrupted twice due to French vetoes, but ultimately the UK joined the EEC in 1973. The February 1974 general election yielded a Labour minority government, which then won a majority in the October 1974 general election. Labour pledged in its February 1974 manifesto to renegotiate the terms of British membership in the EEC, and then to consult the public on whether Britain should stay in the EEC on the new terms, if they were acceptable to the government. A referendum on 5 June 1975 asked the electorate: "Do you think that the United Kingdom should stay in the European Community (the Common Market)?". 67.2 percent of the electorate answered 'Yes'. The 1975 referendum is described in detail in Butler and Kitzinger (1976).

The UK was instrumental in bringing about the Single Market guaranteeing the freedom of movement of goods, capital, labour, and services in the EEC. Since the 1975 Referendum, the European Economic Area has evolved into the central pillar of what became the European Union with the Maastricht Treaty of 1992. The further political and economic integration was formalized through the treaties of Amsterdam in 1997, Nice in 2001 and Lisbon in 2009.

On 1 May 2004, eight Eastern European countries (plus Cyprus and Malta) joined the European Union. Due to fears of migratory pressures into the social welfare system or

into the labor markets, many continental EU countries lobbied successfully for a phasing in of the common market's free movement of labour. Austria and Germany, for example, imposed the maximum possible transition rules to restrict free movement of labour for up to seven years from the accession date. The UK was among the few countries to permit access to its labour market to Eastern Europeans from day one.[9]

In parallel to the increasing role of the EU, opposition to further integration increased in the UK. The UK opted out of joining the single currency, the Euro. The United Kingdom Independence Party (UKIP) formed as an essentially single-issue party working towards the UK's exit from the European Union. While domestically UKIP was not successful in gaining parliamentary presence due to the UK's first-past-the-post election system, it was more successful in elections to the European Parliament (EP). The reason was twofold. First, following the European Parliamentary Elections Act of 1999, European parliamentary elections in the UK were held using a system of proportional representation. Second, being EP elections, voters' minds were likely more clearly set on European issues than in national elections. In the 2014 EP elections, UKIP came first winning 26.2% of the popular vote.

The rise of UKIP bears some resemblance to the rise of the Front National in France and the Alternative für Deutschland (AfD) in Germany. One common theme is the skepticism against globalisation in its various forms: economic integration in the European Union brings free mobility of labour and thus leads to increased competition for jobs, especially for low-skilled workers, as we will discuss in the next subsection. Even beyond the EU, migration and trade not only bring opportunities, but also risks for certain parts of the labour force. Donald Trump's presidential campaign also ran on an anti-immigration, anti-globalization platform. It comes as no surprise that, at one of his rallies, Nigel Farage, the former leader of UKIP and its most iconic figure, spoke about "a key parallel between the 2016 Presidential Elections and the Brexit vote: the plight of white blue-collar workers who may have lost their jobs in an era of globalization."[10]

[9] By registering in the "Accession State Worker Registration Scheme", immigrants were able to claim some basic benefits, such as Housing Benefit, Council Tax Benefit and Tax Credits. However, immigrants had to be employed to claim these benefits. If the worker was able to prove that they had worked legally for at least a 12-month period (without a break in employment of more than 30 days), then they gained the ability to claim social security benefits such as Jobseeker's Allowance.

[10] See http://www.politico.eu/article/nigel-farage-preaches-brexit-gospel-in-cleveland/, accessed 07.09.2016.

3.2 Migration to the United Kingdom

In 2004, eight Eastern European countries plus Malta and Cyprus joined the European Union.[11] The United Kingdom, along with Sweden, was one of the few countries that did not opt to impose temporary restrictions on the freedom of movement. Most continental European countries decided for a phase-in period, allowing freedom of movement only after the accession countries had been a member of the European Union for up to seven years. In 2007, Romania and Bulgaria joined the European Union. Here, the UK decided to opt into restricting their freedom of movement. While our measure of migration from Eastern Europe includes Romania and Bulgaria, their numbers barely matter in reality because of the UK's phase-in for these two countries.

The decision to open the borders in 2004 to Eastern Europeans was taken by Tony Blair's government. A central reason for opening the borders were the thriving UK economy and a misunderstanding of the consequences of the decision of other big EU countries to keep their borders closed to Eastern European workers for a transition period. A study commissioned by the Home Office (2003) computed different scenarios of expected migrant numbers under the assumption that other big EU countries, in particular Germany, would open up their borders as well, which was the proclaimed policy at the time the report was written (summer - autumn 2003). This assumption is clearly spelled out in the report. The government and commentators, however, later ignored this assumption and instead used a prediction of "only around 5,000-13,000 Eastern Europeans to arrive to the United Kingdom per year" to justify their political decision of allowing free movement of Eastern Europeans from 1 May 2004.

Migration from EU accession countries to the United Kingdom was significantly larger than the UK Government had anticipated. Figure 1 uses data from the 2011 Census only and makes use of the self-reported information on the time of arrival of migrants from different countries of birth. This data is available for England and Wales. By virtue of using the stock of residents in 2011, it does not count migrants who arrived in England and Wales before 2011 but left England and Wales before 2011 or who died before 2011. According to these figures, the stock of individuals who were born in any of the 8 Eastern

[11] The Eastern European countries were Poland, Czech Republic, Slovakia, Hungary, Slovenia along with the three Baltic states, Estonia, Latvia and Lithuania. Malta and Cyprus were the smallest accession countries in terms of population and have contributed only marginally to migration to the UK.

European accession countries that arrived up to 2003 was just around 193,180 that were mostly concentrated in the London region (46%). Around 30% of this stock consists of Eastern Europeans who migrated to the UK prior to 1981. Of this stock, the largest group were people born in Poland, who made up 42% of the stock of Eastern Europeans having arrived prior to 2004.[12] After 2004, there was a dramatic up-tick in arrivals from Eastern Europe. The number of Polish-born migrants increased by a factor of 7, while the overall number of Eastern Europeans in the UK increased by a factor of 5, up to 1,036,116 or approximately 2% of the 2001 population. Of the net inflow of 842,936, only 238,227 (28%) moved to London. This compares with a net immigration from Western European EU member countries of around 214,736, the vast majority of which is concentrated in the London region (57%).

The raw figures suggest two stylized facts: first, migration from Eastern European countries is sizable and far outstripped migration from Western European countries (for which the free movement naturally also applied). Second, the spatial distribution of migrants from Eastern European seems quite distinct compared to those from Western Europe (and even the locational preference of Eastern European migrants that have arrived prior to 2004, 46% of which moved to London).

These two stylized facts motivate our use of a simple measure of the EU 2004 Accession migration shock drawn from the 2011 and 2001 census for each of the 380 local authority districts c:

$$\text{AccessionShock}_c = \frac{\text{Accession migrants}_{c,2011} - \text{Accession migrants}_{c,2001}}{\text{EU migrants}_{c,2001}}$$

Note again that, while we include migration from Bulgaria and Romania who joined the EU in 2007, in the numerator, their numbers barely matter because the UK opted for a seven-year phase-in in their case, hence free movement of labour only applied to them from 2014.[13] This shock measure is motivated by the political science literature documenting that a given inflow of migrants has a larger effect in areas that start out with a low baseline stock

[12] Historically, the UK had a large Polish population due to the second World War. After Poland's defeat against Germany and the Soviet Union, the Polish government in exile was set up in London. The remainder of the Polish Army was fighting alongside the British army.

[13] Also note that UK statistics treat Irish migrants as a separate group because free mobility applied to them in any case already since early in the 20th century. Following this logic, in our baseline specifications, EU migrants are continental European EU migrants. Results in the whole sample are robust when including Irish migrants in the EU count.

of migrants (see Newman, 2013) and combines two important features suggested by the raw data. The numerator captures the change between the 2001 and 2011 censuses in the size of the resident population that were born in EU accession countries. Since, as indicated in Figure 1, the number of immigrants from EU accession countries prior to EU accession is essentially flat, we can think of the bulk of the variation in the numerator as stemming from the migration post 2004. We divide this by the stock of migrants from EU countries that have been members of the European Union before 2004. The ratio thus captures both the extent of and the distinctiveness in the spatial distribution of immigration from EU accession countries relative to migration from the (predominantly wealthy) Western European countries. Importantly, our results are robust to alternative normalisations, as explained in detail later in the paper.

As indicated, our AccessionShock$_c$ measure captures an 'interaction effect' well established among political scientists: a given inflow of migration interacts meaningfully with the existing stock to produce anti-migration or anti-globalization sentiment. To see this, suppose that two local authority districts A and B each have a baseline population of 100,000 inhabitants and let us assume that each receives an absolute inflow of Eastern European migrants of 3,000 individuals, or 3% of the population. Suppose that, for district A, 1% of the initial population has a migration background, while for district B, that share is 3%. While the level of the supply shock affecting the labor market is equivalent in absolute terms (3% of the resident population), our AccessionShock$_c$ measure would take a value of 1 for district B, while it takes a value of 3 for district A. That is to say, the bigger the baseline stock of immigration, the smaller is the effect that a given migration shock has on creating anti-European sentiment.[14]

This formulation also takes into account explicitly that the electorate in EP elections includes all citizens of EU member states residing in the UK. That is to say, a Polish citizen has a right to vote in the EP elections in the United Kingdom. Therefore, an increase in the number of EU migrants is also a potential increase in the electorate. EU citizens might be more pro-European by virtue of having benefited from free migration. If that was the case, we would under-estimate the effect of EU migration on voting behaviour of British voters. Yet, EU migrants to the UK are not necessarily more pro-European, as the case of Germany-

[14]We show that our results are not driven by outliers in the accession shock measure and are robust to alternative specifications.

born Gisela Stuart shows who was one of the leaders of the Leave campaign before the EU Referendum. What is even more important, though, is that only 8% EU citizens in the UK even registered to vote in the 2014 EP elections (see European Commission, 2014)[15], making it very unlikely that they influence the EP vote shares in a significant way at all.

We will also show that our results are not driven by migration from non-EU countries. This is not surprising since for non-EU migrants, free movement rules do not apply. Hence the UK can tailor its migration policies to impose stringent limits on migration from non-EU member countries. It has chosen to do so with the introduction of the then "Highly Skilled Migrant Programme" (HSMP) in 2002 prior to accession, which aimed to restrict migration to the higher skill sectors.

As indicated, the migration wave into the UK from Eastern Europe ensuing the 2004 EU expansion was not evenly distributed across space. The spatial distribution in our Accession Shock measure is presented in the left panel of Figure 2. It becomes clear that the shock is sizable: the median value across local authority districts for the Accession Shock variable is 1.05, suggesting that, the stock of EU migrants at least doubled due to migration from the EU Accession countries alone. At the top end, the 75% percentile is around 1.79, suggesting an almost tripling of the stock of EU migrants solely due to migration from EU accession countries. Secondly, the spatial distribution of the shock is quite heterogenous with coastal towns, the North East of England as well as parts of the industrial heartland in the Midlands experiencing significant shocks.

Interestingly and importantly, migrants from Eastern Europe settled in locations that were previously not attracting migrants from Western Europe. This is illustrated in the right panel of Figure 2, which presents the share of the resident population in 2001 that is coming from the then 15 EU member countries. Migrants from Western Europe tend to concentrate in London, as well as the South East and South West of England.[16] The median stock of migrants from Western Europe was just around 1% of the 2001 resident population, while the 75th percentile was just around 1.5%. Given that the flow of migration from Eastern Europe accounted for around 3% of the 2001 working age population, it becomes clear that the shock of migration from EU accession is sizeable relative to the existing stock

[15]For comparison, 22 % of EU citizens in the Republic of Ireland were registered to vote in the 2014 EP elections.

[16]All our results are robust to dropping London, as will be discussed in detail in the robustness section.

and thus, economically and socially relevant. The distinct nature of the geographic pattern of migration of Eastern Europeans (only 28% of migrants from Eastern Europe arriving after 2004 moved to London, compared with initially London absorbing more than 44% of the Eastern European migrants that arrived prior to 2004) also illustrates why a classical shift-share analysis in the spirit of Bartel (1989) and Altonji and Card (1991); Card (2001) is problematic in this case and why we do not pursue it here.

We next turn to discussing how this paper makes headway measuring anti-EU sentiment using vote shares across European Parliamentary elections.

3.3 UKIP vote share as proxy for anti-EU sentiment

Throughout the paper, we will use the UKIP vote share in the European Parliamentary elections in 1999, 2004, 2009 and 2014 as a proxy variable for anti-EU sentiment.[17] UKIP, when founded in 1991 was named the Anti-Federalist League as a single-issue Eurosceptic party. In 1993 it was renamed as UKIP and adopted a wider right-wing platform, with the UK's exit from the European Union as the explicit party goal. No other significant party in the British political system had the explicit goal of leaving the European Union as part of its party manifesto. Figure 4 plots a scatter plot of UKIPs 2014 European Parliamentary results and the share of the Leave vote in the 2016 EU referendum. The tight correlation between the UKIP vote share and the result of the referendum is obvious and has been analyzed in detail in Becker et al. (2016).

Tracking the spatially heterogenous changes in political preferences and attitudes over time in the UK is very difficult. The regular parliamentary elections are not very useful to detect changes in political attitudes for two reasons. First, the geographic unit, Westminster parliamentary constituencies, change in regular intervals as electoral boundaries are redrawn. Secondly, the first-past-the-post electoral system induces voters to vote strategically rather than cast protest votes. This explains why UKIP, despite coming out as first party in the European Parliamentary Elections in 2014, has only won a single parliamentary seat in the 2015 parliamentary election (and this seat had been originally won by a

[17] We also explored the use of Eurobarometer data to measure anti-EU sentiment. Unfortunately, the level of regional disaggregation in the Eurobarometer for the UK switched from NUTS2 level to NUTS1 level in 2004. While the UK has 40 NUTS2 regions, so potentially sufficiently many units to perform panel regressions, it only has 12 NUTS1 regions.

member of the Conservative Party that defected to UKIP).[18]

European Parliament elections are the only elections that allow for a study of the evolution of political sentiment in a panel setup and this paper is the first to do so. Since 1999, MEPs from the UK are elected based on a system of proportional representation.[19] This ensures that we can safely aggregate electoral outcomes across spatial units to construct consistent units. This is particularly important since the results for the 1999 EP election are reported at the Westminster parliamentary constituency level, while later elections are reported at the Local Authority District level, which is the spatial unit that we use throughout the paper. Appendix A.1 provides further detail on how the individual election results are matched to local authority districts over time.

The extent of and the spatial distribution of UKIP support base has changed dramatically since 1999. This is illustrated in Figure 3, which presents the UKIP vote share in the 1999 and the 2014 EP elections across local authorities. Since 1999, UKIP has gained significant support in the coastal regions, Wales and parts of the old industrial heart-land of the Midlands. Comparing the maps for the Accession Shock variable and the UKIP Vote share suggests an association between the influx of migrants from Eastern Europe following the EU accession and increases in the vote share for UKIP. The last panel in Figure 3 presents, for reference, also the Vote Leave share in the June 2016 EU Referendum. A comparison between panel B and panel C shows a tight relationship between UKIP vote share and support for the Leave campaign.

We validate the use of UKIP vote shares to capture anti-EU and anti-immigration sentiment using micro-data from the 2005, 2010 and 2015 British Election Study (BES) rounds.[20] These surveys are carried out with prospective voters from sampled wards across a (changing) sample of roughly 200 Westminster parliamentary constituencies. The sampling is not representative at the local authority district level and it is not guaranteed that the same constituencies or the same wards are sampled across different rounds, which makes it econometrically less appealing to work with this data. We have matched the ward level

[18] Interestingly, this only UKIP MP left the party again in March 2017.

[19] To be precise the European Parliamentary Elections Act in 1999 changed the electoral system from a first-past-the-post to a closed party list system in England, Scotland and Wales. The reform did not apply to Northern Ireland, which continues to use a Single Transferable Vote system. As many of the explanatory variables are not available for Northern Ireland and Northern Ireland is special in many other respects, we drop it from the analysis.

[20] See Fieldhouse et al. (2015); Whiteley and Sanders (2011); Clarke et al. (2005) for detailed descriptions of the data, the sampling methods and the questionnaires.

location information to the best matching local authority district to attribute individual respondents to individual local authority districts. The survey is usually carried out reliably around British general elections. Unfortunately, very few questions pertaining to immigration are consistently asked across the different survey rounds. Within the BES, two variables can be constructed across the 2005, 2010 and 2015 cross-sectional survey rounds: electoral support for UKIP and anti-EU preferences. From 2005 onwards, the surveys provide a separate category for whether a respondent voted for UKIP in the most recent Westminster parliamentary elections[21]. Similarly, we can construct a proxy variable for anti-EU political preferences, as each of the three surveys asked the identical question "whether you (strongly) approve or (strongly) disapprove of British EU membership" on a five point Likert scale. We use these to validate our overall findings. Appendix Table A1 shows that self-reported individual (planned) voting for UKIP in the British general elections in 2005, 2010 and 2015 is a meaningful indicator for anti-EU and anti-immigration preferences across a range of these cross sections. In particular, the analysis suggests that UKIP voters are more likely to support the view that the EU is responsible for the UK's debt levels, that the EU is a threat to British sovereignty, that Britain let in too many immigrants into the country and that immigration increases crime, is bad for the economy and for job prospects of natives.

3.4 Labour market and pressure on public services

Migration can affect political attitudes and preferences through a multitude of channels. The existing literature has highlighted the distinct effects of migration on the labor market and on pressures on infrastructure. We perform two main sets of exercises to shed light on the underlying relevance of each channel. The following paragraphs describe the data used.

3.4.1 Overall effects

Labour market The Annual Survey of Hours and Earnings provides data on hourly wages across different quantiles of the wage distribution from 2002 to 2015. This data is reported by place of residence, which is important, since especially in Southern England commuting

[21] In prior BES survey rounds UKIP votes are combined in a group called "Other"

is very common.[22]

Demand for Benefits We measure different dimensions of the demand for benefits: number of claimants of job seeker allowance, income support and incapacity benefits. Especially the job seeker allowance and incapacity benefits are said to be particularly accessible for migrants from EU accession countries and the popular debate about migration suggested that there were significant concerns about the abuse of the generosity of the British welfare system. The data is available as a balanced panel covering the period from 2000 to 2015.[23]

3.4.2 Within and between group decomposition

The analysis of broad labor market data, such as wages and the demand for benefits fail to take into account the actual *composition* of any level effects. If migrant workers are not perfect substitutes for domestic workers, the impact of migration on wages of natives could be much weaker. Similarly, the increased demand for benefits could be capturing migration into the welfare system, or could capture genuine displacement effects, whereby locals are pushed out of the labor market, into the welfare system.

In order to shed light on the underlying compositional effects, we obtained novel tabulations from the 2001 and 2011 census. For a range of socio-economic outcomes, such as household tenure and broad labor market outcomes, we can tabulate the contribution of each country of birth group to the overall total at the local authority level. That is, in each local authority district, we know how the number of long term unemployed evolved by the country of birth of the resident population between 2001 and 2011. This data is sensitive and confidentiality protection constraints required us to aggregate the micro data into four main country groups: British born, born in a continental European member country, born in an EU accession country and born in the "rest of the world".[24]

[22] Place of residence (which coincides with the location were votes are cast) is more appropriate in our context. Our results are robust, albeit estimated less precisely, when using wage data provided at the place of work (see Appendix Table A10).

[23] We obtained further data measuring house prices, crime and general indices of deprivation across the UK. We relegate most of the discussion of these data and the results to the Online Appendix A.2 and B.

[24] Clearly, country of birth is only an imperfect measure of nationality and to the extent that migrants have children in the UK, they would be counted as "British born". Given that most migrants from Eastern Europe arrived only post 2004, their UK-born children could be a maximum of 7 years old at the time of the 2011 census. This may affect our ability to estimate effects on the demand for schooling, but is unlikely to induce us to underestimate any labor market effects.

These data allow us to study how variables of interest are 'shared' between different country-of-birth group. For instance, we can study how the composition of unemployment changes between different countries of birth of the unemployed. We coin this comparison the *between group* analysis. To the extent that individuals from different countries of birth compare their own wellbeing (e.g. in the form of unemployment) to that of nationals of other countries, this analysis also sheds light on the perceived *relative well-being* of individuals from different countries of birth.

The second set of exercise is the *within group* analysis. For instace, we compute the rate of long term unemployment among British born working age population in a local authority district. We study how this share evolved in places that were affected by significant migration from the EU accession countries between 2001 and 2011. This allows us to shed light on the perceived well-being of British born residents relative to other British born residents in local authorities that were not – to the same extent – affected by the migration wave. This is interesting to the extent that British voters may compare their own fate to that of fellow Brits in other local authorities and come to conclude that they are "left behind" compared to people elsewhere.

Throughout, we focus on four different tabulations that allow us to capture both the labor market effects as well as the pressures on public services. In particular, we exploit a tabulation of socio-economic class of occupations, an industry of employment tabulation, tenure type, and a disability status tabulation. The tabulation of industry and socio-economic status allows us to study the evolution of the manufacturing sector and routine occupations. In addition, we can study the self-reported rates of long term unemployment as well as tabulations of number of individuals who report to have never worked. These, in addition to the classification of number of individuals with some disability serve as proxy measures for the effect that migration has on the composition of the demand for benefits. Lastly, we also explore access to the housing market, by studying in particular, the composition of the demand for social housing and private rental housing.[25]

[25] In the appendix B, we also explore other margins such as crime, overall house prices as well as overall deprivation indices. We relegate this analysis to the appendix as here, we can not provide a decomposition by the respective country of birth group.

3.5 Other baseline socio-economic characteristics

The empirical analysis will detail a simple matching strategy to construct 'best matches' for local authorities that were subject to accession shock in the upper quartile of the distribution. The matching regression will take advantage of a range of socio-economic characteristics that we obtain at the baseline, in particular the baseline distribution of skills, the size of different industries, baseline median wages, availability of rental housing and historical anti-EU sentiment proxied by the 1975 EU referendum result.

4 Empirical strategy

This section details three different empirical strategies we pursue.

The first one is a simple difference-in-difference design that uses as treatment the Accession Shock variable that we defined above. The empirical specification will take the form

$$y_{crt} = \alpha_c + \beta_{rt} + \gamma \times Post_t \times \text{AccessionShock}_c + \epsilon_{crt} \quad (1)$$

where α_c captures local authority district fixed effects and β_{rt} captures region by year fixed effects. The local authority district fixed effects absorb any location specific underlying fixed political preferences or sentiment. The time fixed effects are specific by NUTS1 region. There are twelve total regions across the United Kingdom: 10 in England, including a separate region for London, and one each for Wales and Scotland.[26]

Our main dependent variable, y_{crt}, proxying for anti-globalisation sentiment is the log value of the share of votes for the UKIP party in the four European Parliamentary elections.[27] We expect the sign of the coefficient estimate on the difference-in-difference interaction, γ, to be positive, $\gamma > 0$. The estimate captures the local average treatment effect of Eastern European migration on political attitudes against globalisation. The central concern for the causal interpretation of the estimate γ is that migration might be endogenous to underlying political preferences. For example, if migrants avoid to move to areas with pre-existing anti-immigration preferences, then this is likely to downward bias the true causal effect. Similarly, there are other potential concerns about the endogeneity of the choice of

[26] Table A4 shows that the overall results are robust to using alternative sets of time fixed effects.

[27] Appendix Table A5 highlight that we obtain very similar results when using the level of the vote share or if we weight the regressions by the population.

residence of migrants to other variables, whose changes over time may be contributing to the growth in EU skepticism.

We address these concerns in two complementary ways. First, we present evidence in support of the underlying common trends assumption by showing that the UKIP vote share only started to co-move systematically with the migration measure in the EP elections of 2009 and 2014. This is reassuring, since we can consider the prior EP elections, those held in 1999 and 2004 as being pre-treatment.[28]

Second, we improve on the basic difference-in-differences design by performing a propensity-score matched difference-in-difference exercise. Our AccessionShock$_c$ measure captures an interaction effect, suggesting that a given inflow of migration interacts with the existing stock to produce migration sentiment. Our measure could however be *distorted* in case the initial stock of EU residents is very low.[29] The propensity score matched difference-in-difference addresses this concern concern, as long as we adequately match on *baseline levels of migration*, especially the size of the EU resident population prior to accession.

Since all local authorities received sizable inflows of migrants from the 8 Eastern European accession countries, there is no natural distinction into a treated and a control group. For the matching, we therefore deliberately concentrate on the local authorities that received accession shocks in the upper quartile of the distribution of AccessionShock$_c$ and designate them as treated observations. We construct matched pairs of local authority districts that are observationally equivalent prior to EU accession. In other words, for every local authority in the upper quartile of the accession shock distribution, we search for another local authority in the other three quartiles to find a control unit that, based on baseline characteristics, is observationally equivalent. Since the treated group is drawn from the upper quartile of the accession shock distribution, we do not expect results to be identical to those from the standard difference-in-differences exercise, unless treatment effects are constant across quartiles of treatment intensity. But we consider this exercise to be complementary: while it zooms into only one part of the distribution of treatment inten-

[28]The 2004 EU Parliament elections were held between 10 and 13 June 2004, just 6 weeks *after* the accession of Eastern European countries on 1 May 2004, so while formally taking place after accession, we still be consider it before the large influx of Eastern European migrants.

[29]Suppose for example a place has just 100 EU residents in 2001 and experiences an inflow of 1000 EU accession country migrants. This would result in an AccessionShock$_c$ measure of 10, even if the shock relative to the size of the labour market may be small.

sities (a potential downside), it makes further headway in ensuring comparability between local authorities subject to large versus small accession shocks.

We proceed in two steps. In the first step, we use machine learning to inform which set of cross sectional covariates robustly predicts our AccessionShock$_c$ measure. Best subset selection solves the following non-convex and combinatorial optimization problem:

$$min_{\beta} \underbrace{\sum_{c=1}^{C} (\text{AccessionShock}_c - \beta_0 - \sum_{j=1}^{p} x_{cj}\beta_j)^2}_{\text{Residual Sum of Squares}} \text{ subject to } \sum_{j=1}^{p} \mathbf{I}(\beta_j \neq 0) \leq s \tag{2}$$

Where p is the set of regressors of which a subset s is chosen to maximize overall model fit. The result is a sequence of models $\mathcal{M}_0, ..., \mathcal{M}_s, .., \mathcal{M}_p$, where the overall optimal model $\mathcal{M}_{s*}$ is chosen by using either Cross validation or some degree of freedom adjusted measure of goodness of fit, such as the Akaike Information Criterion (AIC). Throughout, we use the AIC to decide upon the overall optimal model $\mathcal{M}_{s*}$ robustly predicting the variation in the Accession Shock measure. This approach is akin to the approach described in Belloni et al. (2012) and Chernozhukov et al. (2015) for IV estimation, using Lasso to inform variable selection in the first stage. [30]

In the second stage, we use the statistically optimal statistical model $\mathcal{M}_{s*}$ that best explains the cross sectional variation in the AccessionShock$_c$ measure to perform propensity score matching (see Dehejia and Wahba, 2002). We identify matched pairs as those local authority districts whose absolute difference in propensity score is less than 0.05. In other words, we do nearest-neighbour matching with a caliper of 0.05. Propensity scores were estimated with probit regressions using a large number of geographic and economic inputs measured prior to the EU accession. Online Appendix Table A2 contains the results of the matching regression. The regressors selected by best subset selection include the initial share of the population born in non-EU member countries as of 2001 and the EU migrants from continental European EU member countries as of 2001. The inclusion of these characteristics ensures that our matched pairs have similar baseline levels of EU versus migration levels, thus alleviating the concern that the Accession shock measure between treated and control units is inflated. The matching regression also highlights that EU accession mi-

[30] It is important to highlight that Lasso solves a constrained version of the optimization problem that best subset selection solves. The statistically optimal approach of Best subset selection is feasible in our context given that we have relatively few regressors in a relatively small sample.

grants were less likely to move to local authority districts classified as being part of an urban agglomeration, were more likely to move to areas where the local labour force had low educational attainment (below 4 GCSEs), where median wages were lower compared to the rest of the UK and where there was a significant share of social housing. This suggests that places with particularly poor fundamentals experienced significant exposure to the migration shock. Online Appendix Table A3 highlights that the matching exercise does not exclusively compare districts in the third to those in the fourth quartile of the Accession Shock empirical distribution. Rather, the control group includes districts from all quartiles of the Accession Shock.

5 Results

We present the main results and show that the result is robust to many alternative ways of exploring the underlying data.

5.1 Main Results

Table 1 presents the basic results from the difference-in-difference analysis. In Panel A, the dependent variable is the log value of the share of UKIP votes. Appendix Table A4 and A5 highlight that our results are robust to choice of empirical model and functional form: we obtain very similar results when using the level of the vote share or if we weight the regressions by the population. We also perform estimation of a fuzzy difference-in-difference Wald estimator according to de Chaisemartin and D'Haultfoeuille (2015), which explicitly takes into account the fact that treatment intensity varies. The results we obtain are very similar and presented in Online Appendix Table A6.

Throughout, both in the unmatched panel analysis (columns 1 - 3) and in the matched panel analysis (columns 4 - 6) the coefficient on the difference-in-difference interaction is positive and significant, suggesting that a local authority district that saw a significant influx of migration from Eastern Europe saw a significant increase in UKIP vote shares after 2004. The point estimate suggests that the median local authority district, with an accession shock measure of 1.06 (i.e. an influx of Eastern Europeans of similar size to the stock of continental Europeans in 2001), experienced an almost 1.7% increase in the UKIP

vote share, in the top decile of the accession shock the effect is equivalent to a 4% increase in the UKIP vote share. The 95% confidence interval across the different specifications suggests an average effect on UKIP vote share ranging between 1.1% - 5.0%, or an effect ranging between 0.4 - 0.9 percentage points.[31]

In Panel B and C, we look at the results for the Conservative Party and for the Labour Party, the UK's largest parties in terms of representation in the Westminster Parliament. While results estimated on the whole sample indicate losses of the Conservative Party in areas with a larger influx of Eastern Europeans (relative to the stock of continental EU migrants), those go away in the matched sample. Symmetrically, the Labour Party makes gains in areas with a larger influx of Eastern Europeans, but again those results go away in the matched sample.

In Panel D, we present the results for the explicitly pro-European Liberal Democrat party. The Liberal Democrat party was formed in 1988 through the merger between the Liberal Party and the Social Democratic Party. In the UK political system it is commonly associated to be on the left side of the political spectrum. The effects on support for the pro-European Liberal Democratic Party are strongly negative, suggesting that the Liberal Democrats lost votes in places that experienced a significant inflow of migration from EU accession countries.

Finally, in Panel E, we look at voter turnout which is higher in the unmatched sample in areas with larger inflows of Eastern Europeans, but again results go away in the matched sample.

The take-away from this analysis is that the only two parties whose vote share is differentially affected by migration from Eastern Europe are UKIP and the Liberal Democrats. Importantly, while results for these two parties are statistically significant both the unmatched in the matched samples and across different geographic subsamples, the effect sizes are rather small.

In Table 2, we show that the accession shock only started to affect the vote shares of UKIP and the Liberal Democrats after the 2004 EP elections, which assures us that the

[31] A regression between UKIP vote share and the share of Leave votes in the 2016 EU referendum suggests a coefficient near 1, indicating that a 1 percentage point increase in the UKIP vote share in the 2014 EP elections resulted in an increase in the vote leave share by 1 percentage point. Taking these at face value would suggest that the already narrow EU referendum result could have been much narrower in case the UK would have opted for a phasing in of free movement as the rest of the EU member countries did in 2004. Yet, the results also indicate that even a restriction of free movement would not have overturned the referendum results.

difference-in-difference approach (even in the unmatched sample) meets the important criterion of absence of pre-trends.

There are, however, two potential concerns about the specific way we measure exposure to migration due to EU accession. We address these in the next section.

5.2 Robustness to Accession Exposure Measure

We first entertain a simple robustness check exercise, showing that our results are not driven by a set of local authorities that were specific outliers. This is particularly relevant as we already indicated that there may be concerns about the accession shock measure as we specify it to being distorted especially for places that have a low baseline level of EU migration as of 2001. Second, our accession shock measure captures migration from all EU accession countries post 2004, including Bulgaria and Romania, who joined the EU in 2007, but where the UK imposed restrictions on migration during a 7-year phase-in period. In order to account for that, we zoom in on immigration stemming from the Polish group of migrants, which was the single biggest group of migrants in the post 2004 migration wave. Lastly, we also present results based on a horse race between migration from different source countries to show that the effects are not confounding the effects of migration from elsewhere.

These three exercises can be found in Table 4. Panel A restricts the analysis to those local authority districts where migration from Eastern Europe increased population by at least 1%, i.e. where it was particularly large. As expected, the point estimates slightly increase.

Panel B focuses on the Accession shock due to migration from Poland alone. Since Polish migration accounted for nearly two thirds of the inflow from EU accession countries we capture in the data, we should be able to estimate the effect solely based on that large sub-population. We obtain very similar results both in the unmatched and the matched panel, albeit the coefficients are estimated with less precision.

Panel C explores whether a similar systematic pattern emerges for migration from non-EU accession countries, by exploring flows from old continental European EU member countries and flows from non-EU countries (mostly South Asia) after 2004. Throughout, interactions post 2004 for the other migration measures are broadly inconclusive. This is

not too surprising since for nationals from continental European EU member countries and other foreigners, EU accession in 2004 did not change the migration rules that applied to them: for nationals from old EU member countries, free movement applied before and after 2004, while migration rules for non-EU countries did not markedly change in that period. Overall, we find a statistically significant effect of migration from Eastern Europe on UKIP vote shares, but not from migration from other countries of origin.

In the next section, we present result using an entirely different measure of the accession shock which is more in line with the economics literature using migration waves to study the effect of labour supply shocks on wages.

5.3 Alternative Measures of Accession Exposure

As indicated, one concern with the main analysis is the non-linearity implied by defining the Accession Shock measure explicitly relative to the baseline level of continental European EU migration (which is also subject to free movement). The intuition for that measure is that there is a direct 'interaction effect': a similarly sized absolute inflow of migration has a differential effect on political attitudes in an environment that has, in the past, absorbed larger numbers of migrants, as compared to a place that has limited previous experience with migration. This measure of exposure, while in line with the political science literature (see Newman, 2013 and the review by Hainmueller and Hopkins, 2014), may be seen as going against the two competing mechanisms generally discussed in the economics literature: fiscal burden versus skill biased labor market effects.

We discuss an alternative method that embraces the more conventional way of measuring labour supply shocks. In particular, we redefine our Accession shock measure as capturing the population growth in a local authority district c that is due to migration from EU accession countries, that is we measure:

$$\text{Accession}_c = \frac{\text{EU accession migrants}_{c,2011} - \text{EU accession migrants}_{c,2001}}{\text{Population}_{c,2001}}$$

Instead of explicitly normalizing by the initial stock of continental European EU migrants, we normalize by total population in the base year. But to account for the fact that some regions have more previous experience with migrants, we flexibly control for baseline levels of migration interacted with a set of year fixed effects, to allow places with different

baseline migrant stocks to evolve differentially in terms of their political preferences. To be precise, for each of the three different populations:

$s \in \{\text{EU countries}, \text{EU Accession countries}, \text{All Other Countries}\}$, we compute the respective initial stock relative to the 2001 population as

$$\text{Initial Stock}_{s,c,2001} = \frac{\text{Migrant Population}_{s,c,2001}}{\text{Population}_{c,2001}}$$

and then flexibly control for these initial shares by interacting with a set of year fixed effects.

This specification is not entirely isomorphic to our preferred specification, since the effect of migration from EU accession countries post 2004 is not interacting with the intial migrant stock, but is more in line with capturing a labour supply shock to the local labour market. The specification we estimate is:

$$y_{crt} = \alpha_c + \beta_{rt} + \gamma \times Post_t \times \text{Accession}_c + \sum_s \sum_t \eta_{s,t} \times Year_t \times \text{Initial stock}_{s,c,2001} + \epsilon_{crt} \quad (3)$$

As indicated, this specification allows for differential trends in the dependent variable by different baseline levels of (different) foreign populations.[32] Throughout, we obtain quantitatively very similar results as long as London is dropped in the main panel analysis. The results from the matched panel are robust to including London, which is not surprising as in the matching exercise, we de-facto control for initial migration levels. Greater London, accounting for 33 out of the 380 local authority districts is an outlier with a significantly larger initial migrant stock. The distribution of initial migrant stock is shifted pronouncedly to the right: the London borough with the lowest stock of EU migrants in 2001 (as a percentage of total population) has a continental European EU migrant share that is twice as large compared to the non-London local authority district with the lowest level of continental European EU migration. Similarly at the upper end of the distribution, the London Borough with the largest stock of continental European EU migrants in 2001

[32] We can also do a horse race with the inflows of the two other groups of people (continental European and Elsewhere) interacted with a post 2004 dummy. Since the baseline stock is a strong predictor for continental European EU and Elsewhere migrant inflows, this will result in the estimate on these interactions to be insignificant and imprecise.

has three times as many migrants as the Local Authority district outside of London with the highest share of continental European EU migrants. The average continental European EU migrant stock for London boroughs is three times the average stock across the rest of the UK.

The results using that strategy are presented in Appendix Tables A12- A16. Throughout, we obtain very similar results, both qualitatively and quantitatively.

In the next section, we highlight that we obtain very similar results when studying individual level data from the British Election Study.

5.4 Individual level data from the British Election Study

We construct two variables measuring support for UKIP and support in favour of leaving the European Union from the 2005, 2010 and 2015 British Election Study. Each of these three cross-sections provides individual respondent's voting decisions or intentions for UKIP in the most recent Westminster parliamentary elections, as well as a proxy variable for anti-EU preferences provided by responses to the question "whether you (strongly) approve or (strongly) disapprove of British EU membership" on a five point Likert scale.

Our estimating specification is very similar to our main specification 1 with two exceptions. First, given that the earliest BES study took place in 2005, we define 2005 as the 'pre-treatment' year and thus estimate a difference in difference specification across these three repeated cross sections. Second, since the data are individual level responses, we also control for respondent's age and the age squared, an indicator for whether they have any qualifications, gender and interactions between the qualifications dummy and the age variable. Lastly, given the limited coverage of local authority districts across the three BES survey rounds, we can not perform the matched-panel estimation as we would loose too many observations.

The results from this analysis are presented in Table 3. Panel A highlights that EU accession migration is strongly associated with an increase in anti-EU sentiment with individual disapproving of British EU membership. The point estimate suggests a significantly larger effect compared to the results pertaining to UKIP voting in EP elections presented in the previous section, suggesting that we indeed estimate a lower bound. The coefficient suggests that the median local authority district that saw an Accession Shock measure of

around 1, experienced an increase in anti-EU sentiment by 15 - 20%. The results pertaining to UKIP voting in Westminster parliamentary elections presented in Panel B are estimated more imprecisely. This is not surprising, given that votes for UKIP in the Westminster elections are ultimately lost protest votes across most constituencies due to the first-past-the-post electoral system.

Nevertheless, if we take the estimates at face value, the point estimate is nearly identical to our estimates pertaining to UKIP votes in EP elections presented in the previous section. The point estimate suggests that vote shares for UKIP in Westminster parliamentary elections more than doubled relative to a (very low) baseline mean.

This analysis suggests that the results of how immigration affected support for UKIP across European parliamentary elections may be a lower bound estimate. Nevertheless, this analysis needs to be taken with a grain of salt. First, it is not clear whether disapproving EU membership maps one to one into votes to Leave the EU in the EU referendum. Second, the survey is not representative across local authority districts, which naturally distorts the estimated effect due to sample selection.

In the next step, we explore potential mechanisms.

6 Mechanisms

One way to look at mechanisms would be to 'control' for measures of proposed channels as right-hand side regressors in our main regressions and to see whether we can 'explain away' the effect of migration from Eastern Europe. However, two reasons lead us not to pursue this avenue. First, EP election results are available in only four years: 1999, 2004, 2009 and 2014. Other outcome variables are available in more and/or not all years, so bringing together data from different sets of years is by no means trivial and subject to a range of assumptions. Second, and more importantly, mediation analysis is far from trivial (see Heckman and Pinto (2015) and Green et al., 2010) when one wants to have clean causal evidence that the purported channels are *the ones* explaining the causal effect going from the treatment (migration shock) to the main outcome (UKIP vote shares). We therefore look at various purported channels as outcome variables and present evidence in support of the underlying common trend assumption, which we consider as a cleaner exercise.

6.1 Labour Market

We first explore the effect of our main Accession shock measure on wages across different quantiles of the wage distribution. We use data from the Annual Survey of Hours and Earnings reported at the local authority district of residence from 2002 to 2015. The results are presented in Table 5. Throughout, we see that Accession shock migration is correlated with lower wages. The effect is concentrated in the lower quantiles of the wage distribution, with the point estimate for the effect for the 10th percentile being twice as large as that for the effect on the median hourly wage.[33]

While the size of the effects are statistically significant, they are not as economically significant as one might expect. The coefficient suggest that the average local authority district, with an EU accession shock measure of 1.45, sees a reduction in median hourly wages by 0.75%.[34] This suggest while the incidence of the shock is concentrated at the lower end of the wage distribution, it seems implausible to assume that migration from EU accession countries putting pressure on wages is the sole explanation for growing anti-immigration sentiment. Online Appendix Figure A4 presents evidence in support of the parallel trends assumption when studying wage variables.

The wage effects are in line with Dustmann et al. (2013) who, using migration to the UK between 1997 and 2005, find a pattern of effects whereby immigration depresses wages below the 20th percentile of the wage distribution.

We next explore the effect of EU accession migration on crude proxies for the overall demand on the welfare state.

6.2 Demand for Benefits

A commonly held belief among British voters is that migration into the UK welfare system is particularly widespread. A study commissioned by the European Commission evaluated the impact of "non-active" EU migrants on the social security systems of host countries. The report estimates that there are 600,000 non-active adult EU migrants living in the UK in 2012, of which an estimated 112,000 were job-seekers. The UK is a striking outlier in these

[33] See Figure A4 for an analysis of pre-trends of all variables in this section.

[34] As indicated, using the more direct measure of the labor supply shock, we obtain a very similar effect as evidenced in Table A13. There, the effect of EU accession migration on median wages for the average local authority district is just around 0.67%.

statistics in two extreme ways. One the one hand, the data suggests that across the EU, the unemployment rate of EU migrants in the UK is the lowest (standing at 7.5%). On the other hand, the UK has the largest percentage of EU migrant job-seekers who have never worked in their (host) country of residence, standing over one third 37% (compared to 16% in France and 18% in Germany) in 2012.[35] This suggest that migration brings clear benefits to the UK economy, due to the low unemployment rates among this group. However, it also suggests that there are potentially cases of abuse facilitated by the ease of access to benefits, which may be poised to be leveraged by populists to create a negative image of migration.

We explore the extent to which there are significant changes to the demand for types of benefits as measured by the number of benefits claimants per capita. In particular, we look at the log number of claimants for job seekers allowance per capita, the log number of claimants of income support and the log number of claimants for incapacity benefits. This data is available as a balanced panel for the period from 2000 to 2015 across local authority districts in the whole of the United Kingdom. Especially access to the job seekers allowance is particularly easy and may thus be picking up in places that see significant migration at least in the short run. The results are presented in Table 6. Online Appendix Figure A4 presents evidence in support of the parallel trends assumption.

The results suggest that local authority districts that saw significant immigration from EU accession countries relative to the baseline stock of EU migrants, experience a marked uptick in the demand for job seeker allowance and incapacity benefits. The effects suggest that for a local authority district with an average migration shock measure of 1.45, the demand for job seekers allowance has increased by around 4.5%.

The effect for the demand for incapacity benefits is slightly weaker but in a similar ballpark.[36] Throughout, the results suggest that places that experienced an Accession shock saw an increased demand for benefits that are particularly accessible to migrants from EU countries.

In the Online Appendix B we explore further margins. In particular, our results suggest that migration from EU accession countries is associated with higher shares of households

[35] See http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=1980, accessed 06.09.2016.

[36] Again, the result are robust to using the alternative strategy using the direct labor supply shock measure as evidenced in Online Appendix Table A15.

living in rental housing, weakly higher levels of house prices, increased relative "deprivation" and no effects on crime levels (see Bell et al., 2013).

The preceeding analysis suggests that there are significant effects of migration that may operate both through the labor market channel as well as through the fiscal pressure channel. The question to what extent natives are affected by the migrant inflow is an open question, but may help contribute to understanding how migration may have affected the rise of UKIP. The next section discusses the main results performing that decomposition.

6.3 Within and between group decomposition

6.3.1 Between group decomposition

We first explore the results pertaining to the *between group* analysis in Table 7.[37] We separate the analysis between labor market outcomes (Panels A–D) and proxies for the demand for services and housing (Panels E–H). Column (1) and (6) present the total change in the level of the respective dependent variable, while columns (2)–(5) and (7)–(10) present the effects of migration on the percentage shares that different country groups contribute to the overall level. The last panel at the bottom of the table presents the change in the overall population shares in the different samples.

Labor market Panel A, column (1), suggests that migration from Eastern Europe is associated with a marked increase in working age individual's classifying themselves as long term unemployed. The overall level of long-term unemployment is low at just 1.09% in 2001. The low figure is due to using the working age population as overall base for this census tabulation. The increase suggests that the number of long term unemployed increased by, on average, 3.5 - 9.75% in the unmatched and matched samples respectively.[38]

This increase is not equally shared across country of birth groups. The *share* of British nationals among the long term unemployed actually *decreases*, while the share of nationals from EU accession countries increases - suggesting that the increase in level of unemployed is mainly driven by migrants from Eastern Europe. For the average local authority district,

[37] For the outcome variables in this section, which are defined by country of origin, we include Irish migrants with the other ("old" EU) migrants under EU15 migration to make sure population shares of British-born and foreign-born migrants add up to 100%. For consistency with our main analysis, our Accession shock measure continues to be defined as before.

[38] The effect of migration on levels (totals) by country of birth group are presented in Appendix Table A9.

their contribution to the overall level of long term unemployed almost doubles relative to 2001, starting from a very low base. However, the vast majority of long term unemployed are still accounted for by British nationals making up more than 90% of the total stock of long term unemployed. The shares of unemployed from the continental EU and from non-EU countries (RoW) barely changes.

In panel B, we explore how migration affected changes in overall classification of individuals in working age population that consider themselves to have never worked. This is a further indicator that may capture migration into the welfare system. It is important to highlight that this measure does not include full-time students, and thus, genuinely captures the share among the working age population that is not participating in the labor market. The picture that emerges is very similar. Migration from eastern Europe is associated with a marked increase in the levels of individuals who classify themselves as having never worked. This increase is driven mainly by people born in the EU accession countries: again, their share contribution to the total nearly doubles, though British citizens still account for the vast majority.

Panel C and D attempt to address the question to what extent migrants from Eastern Europe are affecting labor market outcomes in different types of occupations or sectors. This sheds light on the relative incidence of the migration shock among British residents. Panel C suggests that the overall share of all routine occupations that are carried out by migrants from Eastern Europe grew by a factor of 4.5 relative to the baseline in districts that received a median EU accession migration shock. The results suggest that there are significant distributional consequences that the migration wave from Eastern Europe could have had at the lower end of the skill distribution, which are somewhat masked when studying the overall evolution of quantiles of the earnings distribution.

Panel D considers employment in the manufacturing sector as another window into studying the likely skill-biased nature of the migration wave from Eastern Europe. The results suggest that between 2001 and 2 011, the manufacturing sector has grown strongly in terms of employment in places that saw significant migration from Eastern Europe. The overall contribution of EU accession country citizens to the total number of manufacturing sector employees has expanded dramatically by a factor 6.7, suggesting that migrants from Eastern Europe are likely to have had a particularly strong impact on the labor market in

this sector.

We next turn to proxies for the demand for housing and services.

Services & Housing Demand Migration may put significant strain on the housing market and the welfare system. The first set of exercises using overall proxies for benefits demand suggested that Themigration into the welfare system may be a concern due to the significant growth in the benefit claimants in areas that saw significant migration from Eastern Europe after 2004. Similarly, access to housing especially with very inelastic supply may significantly drive up prices and rental rates, making home ownership less attainable.

In Panel E of Table 7, we capture the evolution of levels of individuals who consider themselves as having a "limiting long-term illness".[39] The results suggest that places that received a lot of migrants from Eastern Europe see a marked increase in the level of individuals who may be eligible for incapacity benefits. On average, the increase is between 1.54 - 2.34 % in the unmatched and matched samples respectively. This estimate using self-declared census data maps well into what was documented in Table 6 Panel C, where we looked at annual data on incapacity benefit recipients (which represents the benefits category most likely to be accessed by individuals with long term disabilities). This increase is mostly driven by migrants from Eastern Europe. Their share among the total of individuals with limiting long term illness increases by between 45.4% - 55.2% in the unmatched and matched samples respectively, giving further suggestive evidence that migration may have put strain on the welfare system.

We next turn to the housing market, which due to structurally inelastic housing supply is particularly relevant in the UK context. In Online Appendix Table A11 we document that migration is associated with moderate increases in housing prices for UK-typical "semi-detached" housing units. Panels F - H of Table 7 explore the level effect and the composition of rental- and social housing demand. The results pertaining to social housing in Panel F suggests that places that received a lot of migration from Eastern Europe saw a moderate increase in the total number of individuals living in social rented housing in the matched panel. The increase is proportionally of a similar magnitude to the overall

[39]The questions asked in the 2001 and 2011 census are not identical. In 2001, the census asked individuals to tick a box if they consider themselves as having a "limiting long-term illness", while in 2011 the census asked individuals to tick a box if they consider themselves having long term health problems that "limits day-to-day activities".

population growth. Results from the unmatched panel suggests that social rented housing supply remained static, which is not too surprising given the very little social housing construction in the UK. The decomposition of the demand by country of birth group suggest that demand for social housing stemming from migrants from Eastern Europe increased dramatically. Relative to the mean in 2001, the point estimates in column (2) and column (8) suggest that the share of Eastern Europeans living in social housing increased by between 81.1 - 189.3 % in the unmatched and matched sample. This suggest that social housing, the allocation of which is typically decided at the local authority level, is becoming less accessible for British nationals vis-a-vis migrants from Eastern Europe.

Panel G explores the effect on overall private rental housing demand. This demand increased in local authorities that saw significant migration from Eastern Europe. The level increase is dramatic: the demand for rented housing increased by around 8.3 - 10.1% in the matched and unmatched sample for the local authority receiving an average migration shock post 2004. This increase is mostly absorbed for by migrants from Eastern Europe, whose share in the overall private rented housing market increased by a factor between 9.5 - 14.12, starting at a very low base. The overall increase in the level of rented housing demand is thus predominantly driven by migrants from Eastern Europe. As the private rental market booms, fewer houses are made available to buyers. This is highlighted in Panel H, suggesting that overall home ownership stagnated of increased only very moderately. This suggests that migration is associated with significant pressure on the housing market, making Margaret Thatcher's vision of Britain being a country of home owners less and less attainable.

While these results suggest that migration is associated with significant changes in the composition of the labor market and dramatic changes in the composition of the demand for public services and the housing market, individual British voters may evaluate the extent to which they feel immigration has affected their lives due to labor market competition or competition over public goods and resources by comparing their groups' performance in places that were subject to a migration shock with their group's performance in places that were much less affected by migration. We turn to this analysis next.

6.3.2 Within group decomposition

British voters may feel more inclined to vote for extreme parties, if they perceive that migration reduced their relative standing relative to other British nationals in areas that did not receive similar amounts of migration but are otherwise comparable. We explore the same margins as in the previous section but now focus on the relative performance of a group across local authority districts. These results are presented in Table 8. For the variables pertaining to unemployment, labor market participation and routine jobs variables, we normalize by group totals with the total number of working age residents by the respective country groups. For Manufacturing employment, we normalize by the total country group specific employment figures. For example for UK nationals, the share of UK working age residents who classify themselves as long term unemployed is 0.98% at baseline in 2001, while this figure stands at 1.29% for Eastern European residents. Similarly, among the working Eastern European residents, the share working in Manufacturing stood at 14.22% in 2001 relative to 15.42% among British residents. The share of Eastern European residents working in routine occupations is also weakly lower at baseline relative to British born residents.

We first present the results of the analysis pertaining to the labor market effects. In Panel A, we explore the share of unemployed by country of birth group among the resident working age population from that particular country of birth group. The results suggest that long term unemployment among British nationals has become more widespread in places that see a significant influx of migrants from Eastern Europe. The point estimates suggest that, on average, the long term unemployment rate among British nationals increased by 12.84-17.46% in the matched and unmatched samples, relative to the baseline mean. This suggests that British nationals may perceive to be significantly worse off in places that received a lot of migrants from Eastern Europe, relative to British nationals elsewhere.

We also find evidence suggesting that the share of British nationals among the British working age population, who consider themselves as having never worked. Interestingly, places that receive a lot of migrants from Eastern Europe see a marked decrease in the share of Eastern European migrants that classify as having never worked relative to Eastern Europeans elsewhere. This is likely to reflect a composition effect, as the initial stock of

migrants born in Eastern Europe is older.

We also see that there are significant increases in the share of Eastern Europeans working in manufacturing sectors and in routine occupations in places that received a migration shock. The share of Eastern Europeans working in manufacturing or in routine jobs increases by between 10 - 20%. Again, this effect is likely to be due to a composition effect: the initial stock of Eastern European residents that arrived in the UK prior to free movement was much more likely to be more highly qualified and/ or older.

Turning to access to services and the housing market, the results in Table 8 suggest that, at least in the overall sample (but not the matched sample), the share of British nationals among all British born residents living in private rented housing increases significantly, while the share living in social housing decreased slightly relative to local authority districts that saw less migration from Eastern Europe.

However, the overall results – with the exception of the rates of long term unemployment – do not suggest that British residents are relatively markedly worse off in places that experienced significant migration from eastern Europe, relative to British residents living in other local authority districts. This is a somewhat surprising finding, but is not inconsistent with voters evaluating their subjective well-being relative to what they observe happening within their own local authority district as opposed to comparing themselves with British residents elsewhere.

Altogether, the results presented here document that migration from Eastern Europe has put (mild) pressures on the labor market and on the welfare system as well as the housing market in places that received significant migration. The increase in demand for services is mostly attributable to the actual migrants, and not driven by dramatic displacement of British nationals into the welfare system, suggesting that narratives around "migrants taking away British' worker's" jobs are not borne out in the data.

What seems to be the case however, is that migration may not have been supported for by accommodating fiscal policies, such as support for housing construction and general improvements in the ability of the public services to cope with increased demand for services. Remember that in the wake of the financial crisis, the British government set out on a period of fiscal austerity with dramatic effects on public spending. Increased demand for public services was met with austerity. While this did not erode the *relative* rates of access

to the welfare system by British nationals living in areas more affected by migration from Eastern Europe, increased competition over increasingly difficult-to-access services due to increased demand levels, may be attributed to overall reduced development.

7 Conclusion

Free movement of labor is an important ingredient to ensure the functioning of a single market, especially a single currency union in which all adjustments to balance of payments differences need to be absorbed by movement of factors and factor prices since the exchange rates are fixed. As such, on efficiency grounds, free movement is central. However, this paper suggests that there are complex socio-economic interactions that may create backlash against one specific dimension of globalization: free movement of labour.

Our results indicate that migration from EU accession countries contributed to the rise of UKIP, an anti-immigration and anti-EU party. The results are strongest when we work with a measure that relates the Accession flow with the initial baseline stock of migrants, suggesting that there is a more complex dynamic at play that goes beyond simple economic mechanisms in the labour market. This is in line with a large literature in political science exploring the underlying drivers of anti-immigration sentiments and attitudes. The migration shock following EU accession was biased towards the lower end of the income distribution and migrants flowed to areas that had seen previously little exposure to migration from EU countries. Further we document that there are effects on other margins that have been articulated in the debates about the cost and benefits from migration. The estimated effects are, however, relatively small.

Our results pertaining to the support for UKIP in EP elections suggest a numerically small effect of migration on the electorate's support for UKIP's anti-EU political platform. This contrasts with the dominance of the immigration topic in the public debate in the run up to the British EU referendum, suggesting a disconnect with experienced migration and their dynamics at the local level.

Our estimates may be seen as precisely estimated lower bounds for the overall effect of immigration on the erosion of support for the EU's globalisation experiment, which may only be imperfectly captured by electoral support for UKIP. The analysis of – albeit imperfect – micro-data points in that direction, suggesting a markedly larger effect, indicating

that migration may have contributed to an up to 20% increase in disapproval of British EU membership among the British electorate in the span of just 10 years.

Given the (weak) evidence in support of explicitly economic mechanisms, a further analysis of individual (panel) level data may yield important insights into the deeper socio-psychological mechanisms through which migration may have contributed to sizeable swings in public opinion over such short time periods.

Our results for the UK might carry lessons for other EU countries during future accession rounds: austerity during a phase of large influx of migrants might cause a backlash. Two possible responses seem worth considering: phasing in of free movement of labor to smooth out the inflow of workers and/or supporting the inflow of migrants with corresponding expansion of public services to accommodate population growth.

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Figures and Tables for the Main Text

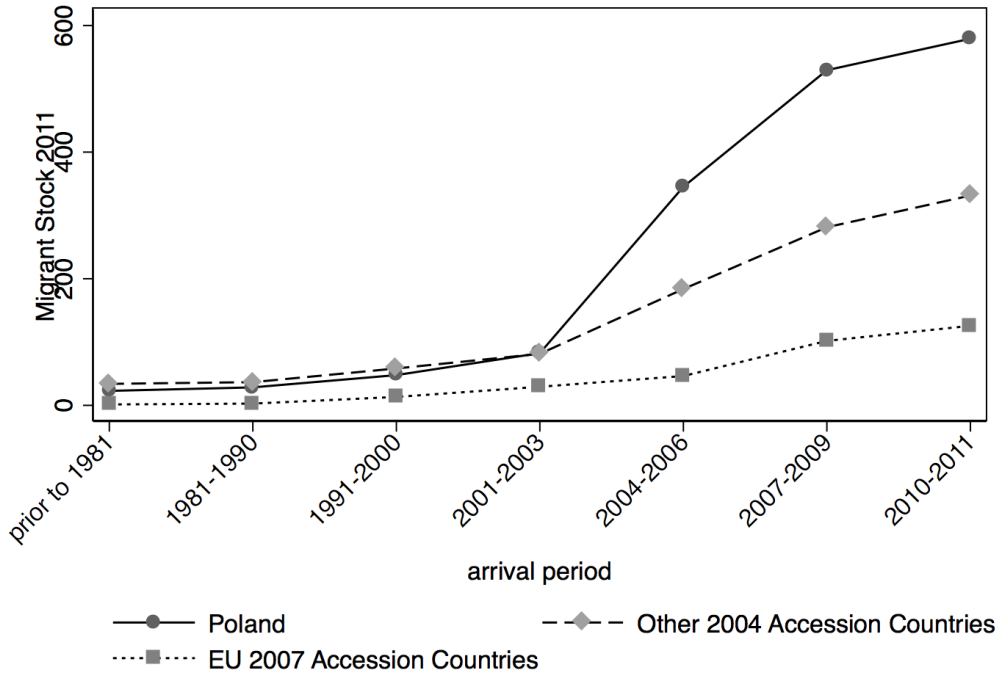
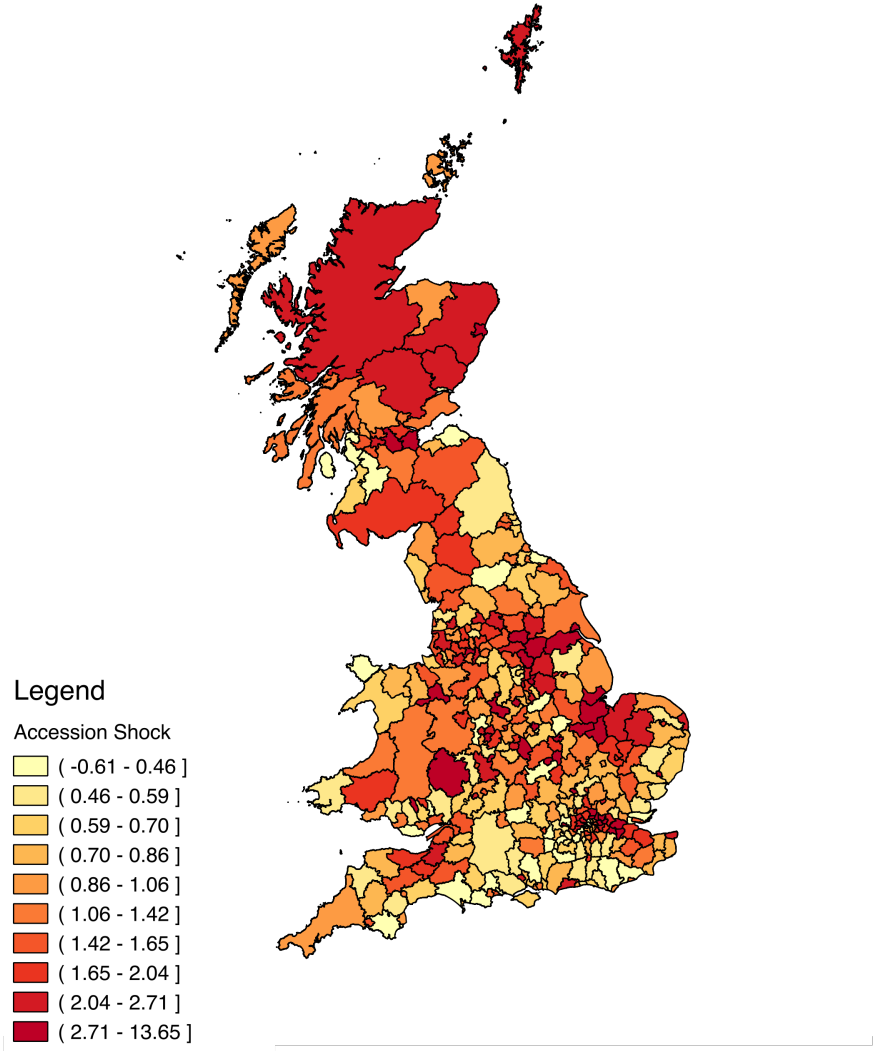


Figure 1: This figure presents the year of arrival for the stock of migrants as of the census date in 2011. It is quite clear that there was a significant influx of migrants from the 2004 accession countries, mostly driven by individuals from Poland.

Panel A: Accession Shock



Panel B: Stock of EU Migrants 2001

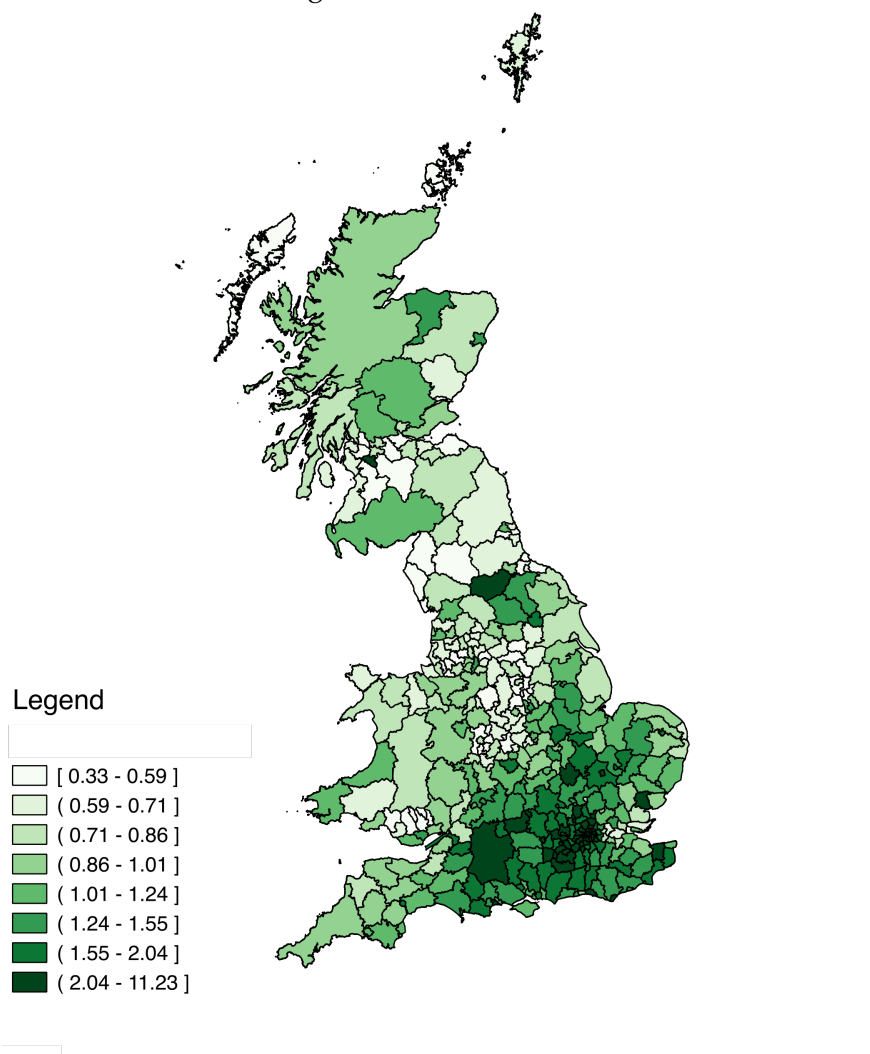
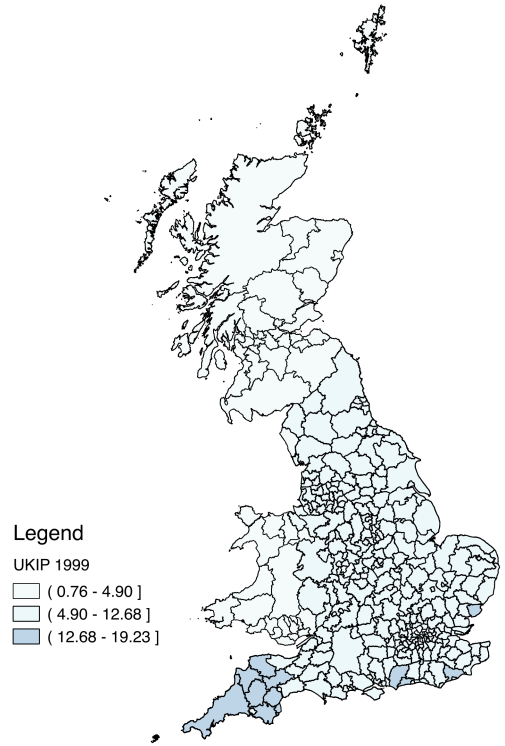
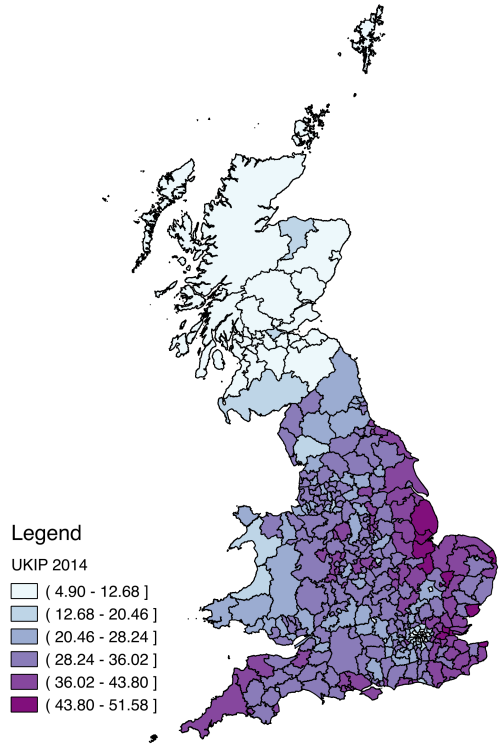


Figure 2: This map displays the spatial distribution of the EU Accession Migration shock across the UK (left panel), and presents the stock of the UK resident population that was born in continental European EU member countries that were member in 2001 (right panel). The underlying data is 2001 and 2011 census measuring the resident population in a local authority by the country of birth.

Panel A: UKIP vote in 1999



Panel B: UKIP Vote in 2014



Panel C: Referendum % Vote leave

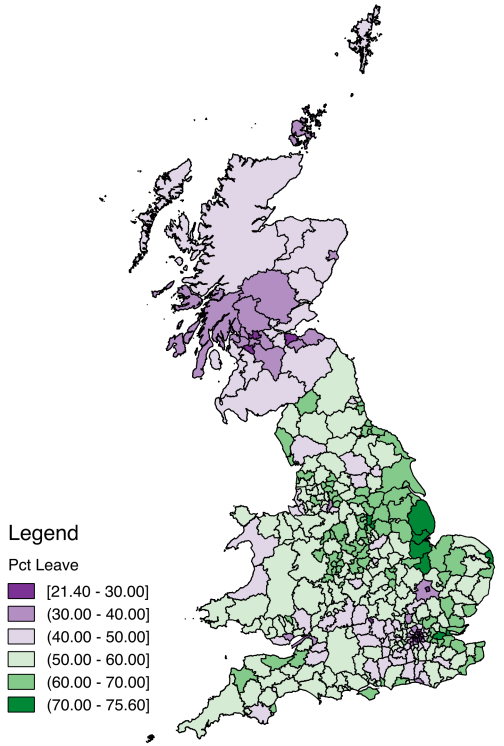


Figure 3: This map displays the UKIP vote share in the European Parliamentary elections in 1999 and 2014 (left and center), as well as the share of the electorate that voted leave in the 2016 EU referendum across local authority districts (right).

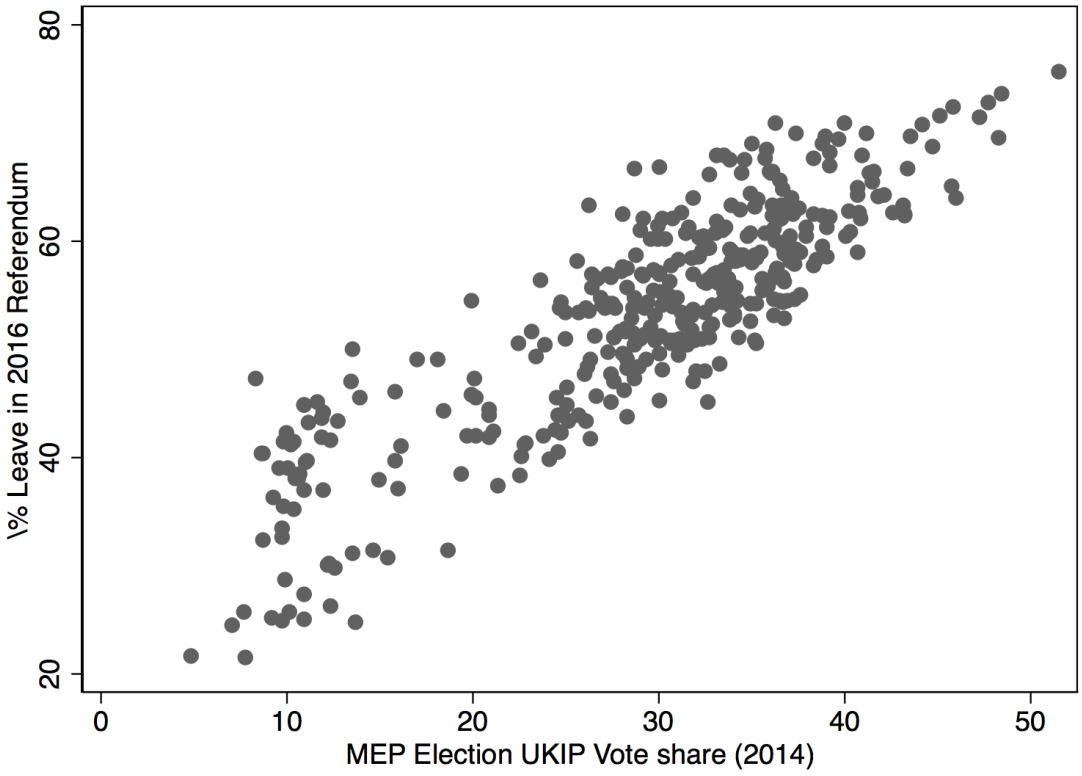


Figure 4: Figure presents the UKIP Vote shares in the 2014 European Parliamentary elections and the share of leave votes by local government authority district.

Table 1: The Impact of Migration from EU Accession countries on the UKIP Vote Share in EP Elections.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Anti EU UKIP						
After 2004 × Accession Shock	0.017***	0.016***	0.023***	0.014**	0.013**	0.012**
	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Other parties						
Panel B: Conservative Party						
After 2004 × Accession Shock	-0.021***	-0.023***	-0.021***	-0.001	-0.002	-0.002
	(0.006)	(0.007)	(0.006)	(0.004)	(0.004)	(0.004)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Panel C: Labour Party						
After 2004 × Accession Shock	0.027*	0.030*	0.026	-0.008	-0.007	-0.006
	(0.014)	(0.017)	(0.018)	(0.013)	(0.016)	(0.016)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Panel D: Pro-EU Liberal Democrats						
After 2004 × Accession Shock	-0.045***	-0.054***	-0.043***	-0.007	-0.017*	-0.017*
	(0.013)	(0.015)	(0.013)	(0.012)	(0.010)	(0.010)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Turnout						
Panel E: Turnout						
After 2004 × Accession Shock	0.011***	0.011***	0.010**	0.001	0.002	0.002
	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The dependent variable is the log value of the respective party's vote share in the EP elections from 1999 to 2014 in panels A-D. In Panel E, it is log(voter turnout) in the EP elections. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2: Parallel Trends Check of the impact on Migration from EU Accession countries on EP Election outcomes.

	Whole sample			
	(1) UKIP	(2) LD	(3) UKIP	(4) LD
Election year 1999 x Accession Shock	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)
Election year 2004 x Accession Shock	0.007	-0.005	0.007	-0.009
	(0.005)	(0.007)	(0.008)	(0.010)
Election year 2009 x Accession Shock	0.014**	-0.026***	0.012	-0.012
	(0.006)	(0.010)	(0.009)	(0.018)
Election year 2014 x Accession Shock	0.027***	-0.069***	0.023**	-0.011
	(0.008)	(0.020)	(0.009)	(0.016)
LGA Districts	380	380	104	104
Observations	1520	1520	416	416
Sample	All	All	All	All
LGA District FE	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The dependent variable is the log value of the UKIP Vote share in the European Parliamentary elections from 1999 to 2014. Columns (2) restricts the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3: Impact of migration on individual level anti-EU sentiment and UKIP voting in general elections

	(1)	(2)	(3)
Panel A: (Strongly) Disapprove of British EU membership			
After 2005 x Accession Shock	0.047***	0.067***	0.057***
	(0.016)	(0.019)	(0.018)
Baseline mean of DV	.31	.34	.34
LGA Districts	269	225	197
Respondents	9784	6626	5914
Panel B: (Will) vote UKIP general election			
After 2005 x Accession Shock	0.012	0.017	0.030*
	(0.008)	(0.015)	(0.015)
Baseline mean of DV	.01	.02	.02
LGA Districts	268	224	196
Respondents	7487	5087	4547
Sample	All	England	Not London
Respondent controls	Yes	Yes	Yes
LGA District FE	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes

Notes: Table reports results from a OLS regressions on variables obtained from the 2005, 2010 and 2015 British Election Study. The years in which data is available for respective question is presented in parenthesis. All regressions control for respondent age, gender, an indicator of whether the respondent has no formal qualifications, a quadratic in age and an interaction with the education indicator and age. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4: Robustness of the Impact of Migration from EU Accession countries on the UKIP Vote Share in EP Elections.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Migration above 1% of 2001 population						
After 2004 × Accession Shock	0.021***	0.019***	0.030***	0.021***	0.018***	0.016***
	(0.007)	(0.007)	(0.008)	(0.006)	(0.006)	(0.006)
LGA Districts	228	206	173	77	65	56
Observations	912	824	692	308	260	224
Panel B: Only Polish migration						
After 2004 × Polish migration shock	0.027***	0.024***	0.030***	0.024*	0.023*	0.022
	(0.008)	(0.009)	(0.009)	(0.013)	(0.014)	(0.014)
LGA Districts	380	326	293	108	88	81
Observations	1520	1304	1172	432	352	324
Panel C: Controlling for other migration						
After 2004 × Accession Shock	0.022***	0.024***	0.027***	0.017**	0.019**	0.005
	(0.006)	(0.006)	(0.008)	(0.009)	(0.008)	(0.011)
After 2004 × Continental EU Shock	-0.063	-0.093	-0.031	-0.052	-0.095	0.100
	(0.055)	(0.067)	(0.087)	(0.065)	(0.066)	(0.111)
After 2004 × Elsewhere shock	0.000	-0.001	-0.003	0.010	0.008	-0.003
	(0.005)	(0.005)	(0.006)	(0.009)	(0.008)	(0.009)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The dependent variable is the log value of the UKIP Vote share in the EP elections from 1999 to 2014. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5: Effect of Migration from EU Accession affecting lower end of wage distribution.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Median Hourly Pay						
After 2004 × Accession Shock	-0.001	-0.002	-0.002	-0.001	-0.002	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
LGA Districts	379	325	292	103	83	74
Observations	5227	4480	4030	1437	1162	1036
Panel B: 25th Percentile Hourly Pay						
After 2004 × Accession Shock	-0.005***	-0.006***	-0.005**	-0.004**	-0.004*	-0.003*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
LGA Districts	379	325	292	103	83	74
Observations	5244	4493	4040	1439	1162	1036
Panel C: 10th Percentile Hourly Pay						
After 2004 × Accession Shock	-0.005***	-0.006***	-0.005***	-0.005***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
LGA Districts	378	325	292	102	83	74
Observations	5167	4449	3999	1428	1162	1036
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The dependent variable is the log of hourly wages in the respective percentile of the earnings distribution in a local authority from the Annual Survey of Hours and Earnings. The data set is a balanced panel of hourly wages by location of residence from 2002 to 2014 across different quantiles. A few observations are missing as the Office of National Statistics deemed the statistics not precise enough. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6: Effect of Migration from EU Accession on demand for benefits.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Jobseeker Allowance Claimants						
After 2004 × Accession Shock	0.029***	0.032***	0.027***	0.033***	0.033***	0.033***
	(0.005)	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)
LGA Districts	380	326	293	104	84	75
Observations	6080	5216	4688	1664	1344	1200
Panel B: Income Support Benefits Claimants						
After 2004 × Accession Shock	0.005	0.006	0.001	0.003	0.004	0.003
	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
LGA Districts	380	326	293	104	84	75
Observations	6067	5203	4675	1651	1331	1187
Panel C: Incapacity Benefit Claimants						
After 2004 × Accession Shock	0.019***	0.023***	0.030***	0.021**	0.026**	0.026**
	(0.005)	(0.005)	(0.007)	(0.009)	(0.011)	(0.012)
LGA Districts	380	326	293	104	84	75
Observations	6080	5216	4688	1664	1344	1200
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The dependent variable inn Panel A is the log of the annual average number of job seeker allowance claimant counts from the ONS from 1999 to 2015. The data in panel B and panel C are an annual panel obtained from the Department for Work and Pensions Longitudinal Study (WPLS) covering 1999 to 2015. The dependent variable in panel B is the log number of claimants of income support benefits claimants. The dependent variable in Panel C is the log total number of incapacity benefit claimants. Panel Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 7: Effects of migration from EU Accession countries: Between country-of-origin groups.

	Whole sample					Matched sample				
		Share of country group of total in %					Share of country group of total in %			
	log(Total)	UK	Accession	EU15	RoW	log(Total)	UK	Accession	EU15	RoW
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Labor Market										
Panel A: Unemployed										
After 2004 × Accession Shock	2.426***	-0.531***	0.400***	-0.003	0.135	4.599***	-0.423***	0.430***	0.060	-0.066
	(0.900)	(0.129)	(0.040)	(0.037)	(0.132)	(0.761)	(0.126)	(0.056)	(0.036)	(0.087)
Mean of DV in 2001	1.09	89.52	.47	2.12	7.9	1.2	90.71	.43	1.8	7.06
Panel B: Never worked										
After 2004 × Accession Shock	2.289***	-0.836***	0.641***	0.097***	0.097	1.183**	-0.697***	0.633***	0.001	0.064
	(0.613)	(0.148)	(0.052)	(0.027)	(0.151)	(0.540)	(0.149)	(0.069)	(0.030)	(0.124)
Mean of DV in 2001	2.93	80.05	.74	2.1	17.11	3.08	81.22	.62	1.74	16.42
Panel C: Routine Jobs										
After 2004 × Accession Shock	1.563***	-2.185***	1.822***	0.047	0.316**	1.177***	-2.160***	2.001***	0.078***	0.081
	(0.333)	(0.161)	(0.137)	(0.030)	(0.127)	(0.434)	(0.272)	(0.211)	(0.029)	(0.111)
Mean of DV in 2001	21.1	91.61	.4	2.24	5.75	23.53	92.88	.33	1.83	4.96
Panel D: Manufacturing										
After 2004 × Accession Shock	3.448***	-2.608***	2.415***	-0.055	0.247***	4.859***	-2.937***	2.746***	0.141***	0.051
	(0.613)	(0.190)	(0.168)	(0.067)	(0.083)	(0.583)	(0.233)	(0.201)	(0.031)	(0.068)
Mean of DV in 2001	10.21	92.55	.36	1.95	5.14	10.87	93.55	.32	1.67	4.47
Services & Housing Demand										
Panel E: Disability										
After 2004 × Accession Shock	1.056***	-0.510***	0.171***	0.016	0.324***	1.053***	-0.195***	0.151***	0.025	0.019
	(0.178)	(0.119)	(0.017)	(0.015)	(0.116)	(0.243)	(0.071)	(0.019)	(0.020)	(0.066)
Mean of DV in 2001	150.4	92.11	.55	2.46	4.88	157.2	93.05	.46	2.22	4.27
Panel F: Living in social rented housing										
After 2004 × Accession Shock	-0.169	-0.778***	0.335***	0.091***	0.352***	0.659**	-0.646***	0.390***	0.108***	0.147
	(0.363)	(0.133)	(0.042)	(0.018)	(0.109)	(0.325)	(0.230)	(0.121)	(0.018)	(0.125)
Mean of DV in 2001	26.38	94.27	.27	1.71	3.76	29.31	95.05	.22	1.49	3.24
Panel G: Living in private rented housing										
After 2004 × Accession Shock	6.749***	-3.272***	3.065***	0.020	0.186	4.307***	-3.321***	3.217***	0.117***	-0.013
	(1.161)	(0.186)	(0.183)	(0.050)	(0.133)	(0.985)	(0.277)	(0.209)	(0.030)	(0.151)
Mean of DV in 2001	15.95	86.66	.47	3.4	9.47	16.18	88.36	.43	2.84	8.37
Panel H: Home ownership										
After 2004 × Accession Shock	-0.094	-0.547***	0.203***	-0.039*	0.383***	0.282*	-0.269***	0.188***	0.010	0.071
	(0.187)	(0.128)	(0.021)	(0.021)	(0.130)	(0.145)	(0.073)	(0.016)	(0.011)	(0.074)
Mean of DV in 2001	105.4	93.26	.37	1.89	4.48	109.1	94.06	.33	1.67	3.94
Overall population										
After 2004 × Accession Shock	1.055***	-1.197***	0.789***	-0.004	0.412***	1.052***	-0.930***	0.784***	0.048***	0.098
	(0.178)	(0.139)	(0.051)	(0.021)	(0.139)	(0.244)	(0.146)	(0.061)	(0.011)	(0.112)
Mean of DV in 2001	150.4	92.42	.37	2.08	5.13	157.2	93.44	.33	1.79	4.45
LGA Districts	344	344	344	344	344	91	91	91	91	91
Observations	688	688	688	688	688	182	182	182	182	182
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 8: Effects of migration from EU Accession countries: Within country-of-origin groups.

	Whole sample					Matched sample				
		Share within country group in %					Share within country group in %			
	log(Total) (1)	UK (2)	Accession (3)	EU15 (4)	RoW (5)	log(Total) (6)	UK (7)	Accession (8)	EU15 (9)	RoW (10)
Labor Market										
Panel A: Unemployed										
After 2004 × Accession Shock	2.426***	0.118***	-0.142*	0.084***	0.022	4.599***	0.068***	-0.004	0.027	-0.027
	(0.900)	(0.019)	(0.080)	(0.024)	(0.020)	(0.761)	(0.013)	(0.100)	(0.034)	(0.033)
Mean of DV in 2001	1.09	.98	1.29	.97	1.14	1.2	1.08	1.78	1.06	1.31
Panel B: Never worked										
After 2004 × Accession Shock	2.289***	0.118***	-0.345***	0.082*	-0.156***	1.183**	0.026*	-0.584***	-0.074*	-0.105
	(0.613)	(0.030)	(0.107)	(0.048)	(0.060)	(0.540)	(0.015)	(0.180)	(0.041)	(0.083)
Mean of DV in 2001	2.93	2.05	4.06	2.25	7.21	3.08	2.26	4.2	2.37	8.06
Panel C: Routine Jobs										
After 2004 × Accession Shock	1.563***	0.001	2.634***	0.811***	-0.012	1.177***	-0.118*	1.767**	0.849***	0.420**
	(0.333)	(0.051)	(0.568)	(0.166)	(0.199)	(0.434)	(0.066)	(0.730)	(0.237)	(0.185)
Mean of DV in 2001	21.1	23.5	22.52	21.94	17.83	23.53	25.71	23.85	23.65	19.32
Panel D: Manufacturing										
After 2004 × Accession Shock	3.448***	-0.176	1.202***	0.467*	-0.274	4.859***	0.092	1.127*	1.091***	0.384*
	(0.613)	(0.122)	(0.448)	(0.252)	(0.308)	(0.583)	(0.114)	(0.652)	(0.296)	(0.220)
Mean of DV in 2001	10.21	15.42	14.22	13.98	13.16	10.87	16.46	14.77	15.12	13.83
Services & Housing Demand										
Panel E: Disability										
After 2004 × Accession Shock	1.056***	-0.063	-1.640***	-0.541***	-0.342***	1.053***	0.036	-0.410	-0.681*	-0.168
	(0.178)	(0.055)	(0.566)	(0.189)	(0.093)	(0.243)	(0.065)	(0.620)	(0.395)	(0.112)
Mean of DV in 2001	150.4	17.87	25.51	21.37	15.54	157.2	18.87	26.5	23.27	16.51
Panel F: Living in social rented housing										
After 2004 × Accession Shock	-0.169	-0.168*	-0.337	0.355**	0.074	0.659**	-0.005	0.027	0.643***	0.292**
	(0.363)	(0.091)	(0.235)	(0.173)	(0.189)	(0.325)	(0.048)	(0.433)	(0.137)	(0.124)
Mean of DV in 2001	26.38	16.51	12.66	13.96	10.65	29.31	17.87	13.12	15.16	11.64
Panel G: Living in private rented housing										
After 2004 × Accession Shock	6.749***	0.316**	3.264***	1.497***	0.498**	4.307***	-0.012	1.495	1.417***	0.084
	(1.161)	(0.127)	(0.860)	(0.201)	(0.239)	(0.985)	(0.106)	(0.911)	(0.300)	(0.269)
Mean of DV in 2001	15.95	9.64	13.84	17.18	21.03	16.18	9.34	13.49	15.84	20.35
Panel H: Home ownership										
After 2004 × Accession Shock	-0.094	-0.147	-2.927***	-1.852***	-0.572*	0.282*	0.018	-1.522	-2.060***	-0.375
	(0.187)	(0.101)	(0.841)	(0.257)	(0.292)	(0.145)	(0.088)	(1.112)	(0.364)	(0.311)
Mean of DV in 2001	105.4	73.85	73.5	68.86	68.32	109.1	72.78	73.38	69	68.01
Overall population										
After 2004 × Accession Shock	1.055***	-1.197***	0.789***	-0.004	0.412***	1.052***	-0.930***	0.784***	0.048***	0.098
	(0.178)	(0.139)	(0.051)	(0.021)	(0.139)	(0.244)	(0.146)	(0.061)	(0.011)	(0.112)
Mean of DV in 2001	150.4	92.42	.37	2.08	5.13	157.2	93.44	.33	1.79	4.45
LGA Districts	344	344	344	344	344	91	91	91	91	91
Observations	688	688	688	688	688	182	182	182	182	182
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Appendix to "Does Migration Cause Extreme Voting?

For Online Publication

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April 23, 2017

A Data Appendix

A.1 Matching the EP Election results from 1999 to 2014

Since 1999, EPs are elected based on a system of proportional representation. Electoral data is reported by the UK Electoral Commission at a "Counting Area" level. In 1999, the EP election results were reported disaggregated by the then valid 650 parliamentary constituencies, which had been in force until 2005. From 2004 onwards, results are reported by Local Authority District, of which there are 380 across the United Kingdom.

This means that we can map the electoral outcomes across the EP elections from 2004 onwards quite smoothly at the level of local authority districts. For the 1999 election, we need to map the then parliamentary constituencies to the 380 local authority districts. The result for 1999, given that it is reported at the parliamentary constituency level is more detailed. However, not all parliamentary constituencies dissolve perfectly into the 380 local authority districts. Figure A1 illustrates this using the example of the Local Authority district Wiltshire in the South West of the country (indicated by the solid thick boundary). The local authority district fully absorbs the constituencies of Salisbury, Westbury, Devizes and Wiltshire North (shaded, boundaries indicated by thin black lines). However, it also intersects partly with the constituency Swindon North (dark grey). In order to assign vote shares for the authority district Wiltshire, we take advantage of the fact that the building blocks for constituencies are wards and we have detailed population figures at the ward level from the 2001 census. Across the UK in 2001, there were around 10,000 wards with about 5,000 inhabitants in each. We compute the number of votes for the Wiltshire local authority district as the sum of the votes from the fully absorbed constituencies and add the

population weighted votes for the ward of the Swindon North constituency that intersects with the Wiltshire local authority district.

We proceed in this fashion throughout. This naturally introduces some measurement error, but is the only way feasible to create a balanced panel at the local authority level.

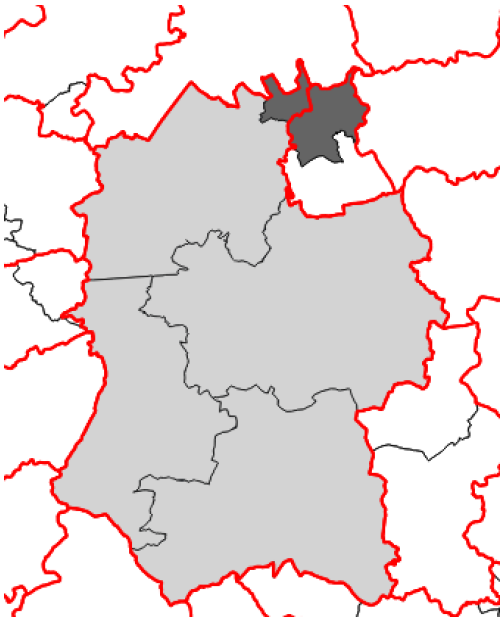

Figure A1: Figure presents method used to match the 1999 EP election results, provided at the Westminster constituency level to the results presented at the Local Authority districts of later EP elections.

A.2 Additional Data on socio-economic outcomes

Housing We study house prices for terraced houses (the most common type of property) across local authority districts in the UK from 1997 to 2013. In addition, we look at the share of households who live in rental housing.

Crime In popular debates, issues concerning increases in crimes, in particular, burglaries and other related property crimes were commonly attributed to migration from Eastern Europe. Attitudes against migration due to free movement can be influenced by such perceived associations. It is impossible to measure beliefs about this association at any spatial detail, but so long as we are willing to assume that (recorded) crime data has any

significant correlation with beliefs, we can use this data as a proxy. We use available data from 2002-2014 across the 342 local authority districts for England and Wales to explore whether there is a relationship between different types of crime.

B Additional Results

B.1 Crime

Migration is often assumed to affect crime. In the context of the UK, Bell et al. (2013) document that the migration wave from EU accession countries is correlated with a small *reduction* in levels of crime. They rely on a shift-share identification strategy. We already discussed previously that, while a shift-share strategy may provide a relevant instrument for migration from EU accession countries, it is not clear whether it adequately captures the underlying skill composition of the inflowing migrants that arrive after EU accession. In particular, the initial stock of Polish residents in 2001 that arrived prior to EU accession mainly consisted of migrants who are in pension age (having lived in the UK since the second world war as remnants of the Polish Free Army that fought the Nazis alongside the British), or consists of migrants who have entered the UK since 1991 for graduate studies or under high skilled migration visas. This means that, while the instrument is relevant, when interpreted as a local average treatment effect (see Angrist and Imbens (1994)), it may be relevant only in predicting the part of the inflow of Polish migrants that can be thought of as being high skilled, whose inflows may well be associated with lower levels of crime.

When studying a range of crime outcomes for England and Wales across Local Authority districts (rather than Police Force Areas used in Bell et al. (2013)) in Table A7, we find that migration from EU accession countries as captured by our measure is *not* correlated with crime across broad categories capturing property crime, violent crimes or crimes against public order in any systematic way.[1]

[1]Using the measure of the Accession shock variable that is more in line with the classic labour economics literature we find very similar results, see Appendix Table A14.

B.2 Access to the Housing Market

Housing in the UK is an extremely contentious political topic, with housing conditions being generally quite poor and access to housing due to restrictive zoning laws being quite limited. The UK housing market, inside and outside London has seen accelerating house prices and high rental prices, while at the same time being accompanied by a withdrawal of the state from social housing projects provided by the local councils. Migration is commonly associated with increased house prices and restrictive access, which results in larger shares of households finding themselves in rental housing as opposed to owner occupied housing.

We work with two different data sets. For the whole of the UK, we compare the changes in the share of households within a local authority district that live in rental housing from a private landlord obtained from the 2001 and 2011 Census. In 2001, on average only 8% of households lived in rental housing. This share has increased to 13% by 2011. The second variable, a measure of house prices is only available for England and Wales. We obtain annual time series of the price of the median terraced house sold within a local authority district between 1997 and 2013. The results are presented in Table A11. The estimated effects in Panel A suggest that in local authority districts with a large inflow of migrants from Accession countries, the share of households living in rental housing increased significantly. The point estimate suggests that the share of households living in rental housing increased by 0.6 - 1.1 percentage point.

Panel B explores the effect on house prices. The point estimates across the matched and unmatched panel are positive throughout but are only statistically significant in the unmatched panel. The point estimates there suggest that median sales prices for terraced houses increased by between 1- 1.5%.

C Appendix Figures and Tables

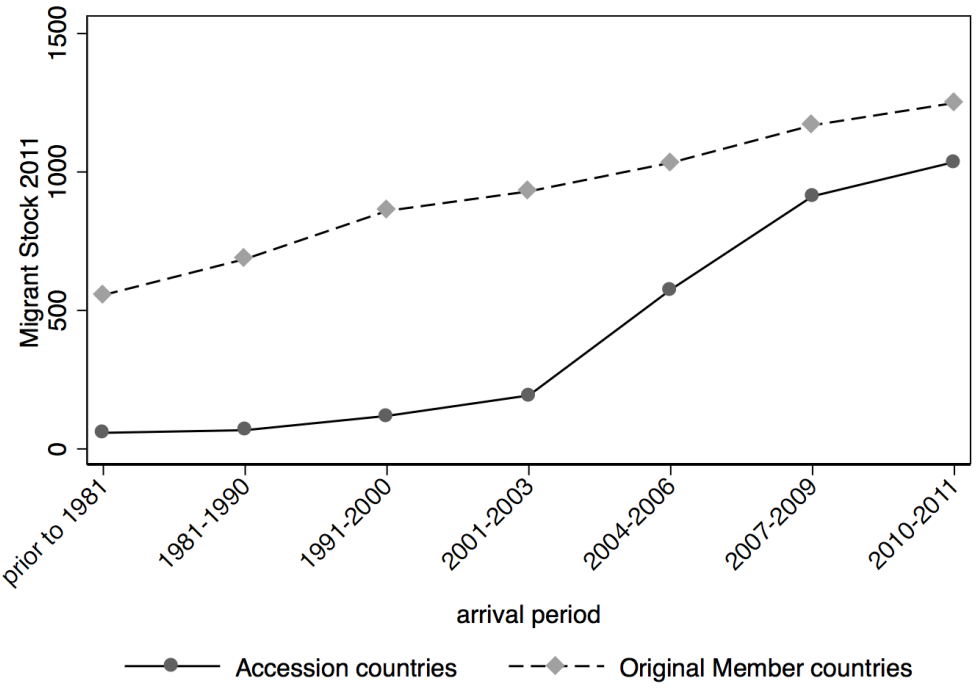

Figure A2: This figure presents the year of arrival for the stock of migrants as of the census date in 2011 split by whether the country of birth of a migrant is part of the EU member states as of 2001 or whether it is part of the 10 EU accession countries that joined the EU after 2004.

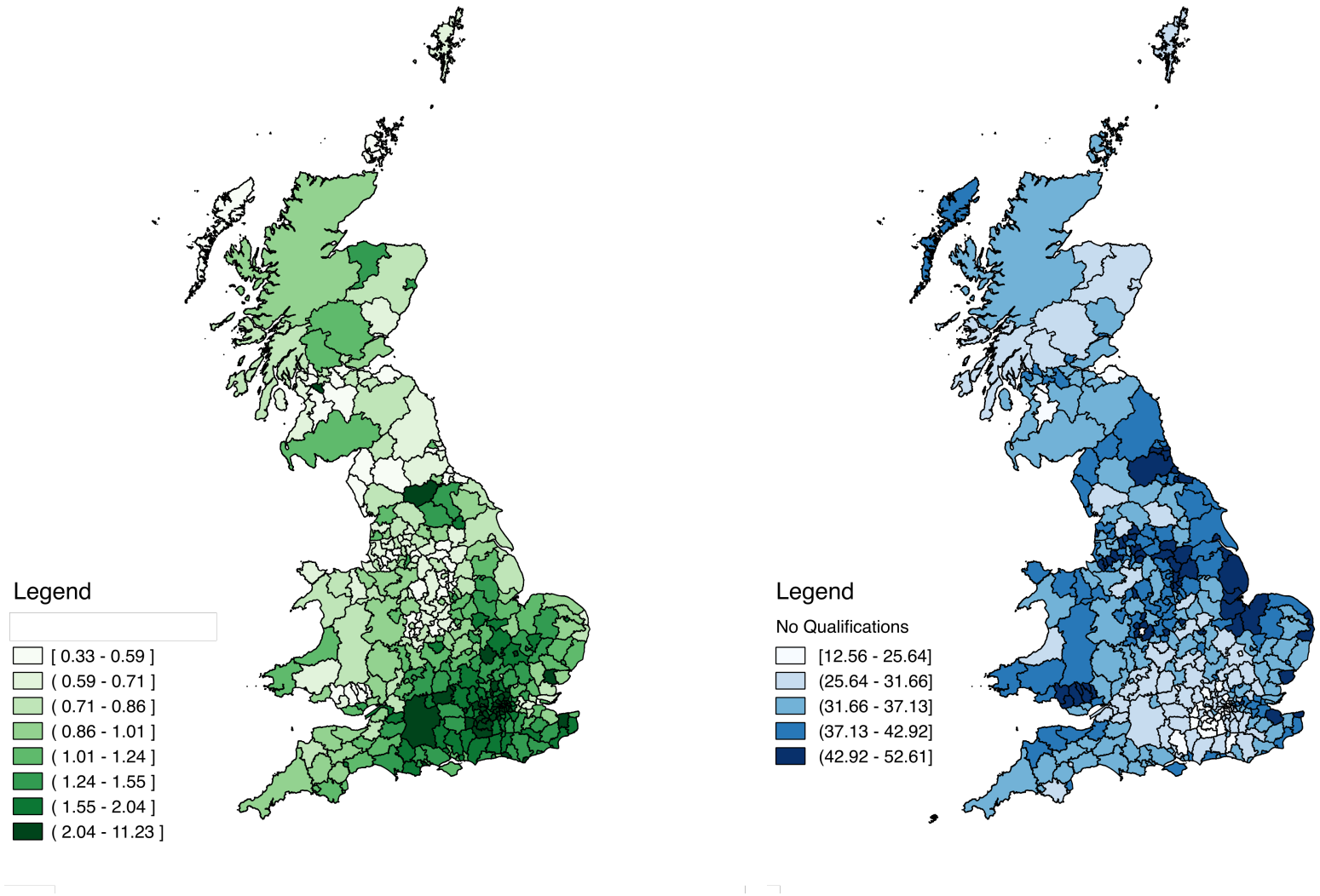

Figure A3: This map of the resident population of individuals born in EU member countries that were member of the European Union in 2001 (left panel). The right panel presents the share of the workforce with low educational attainment in 2001.

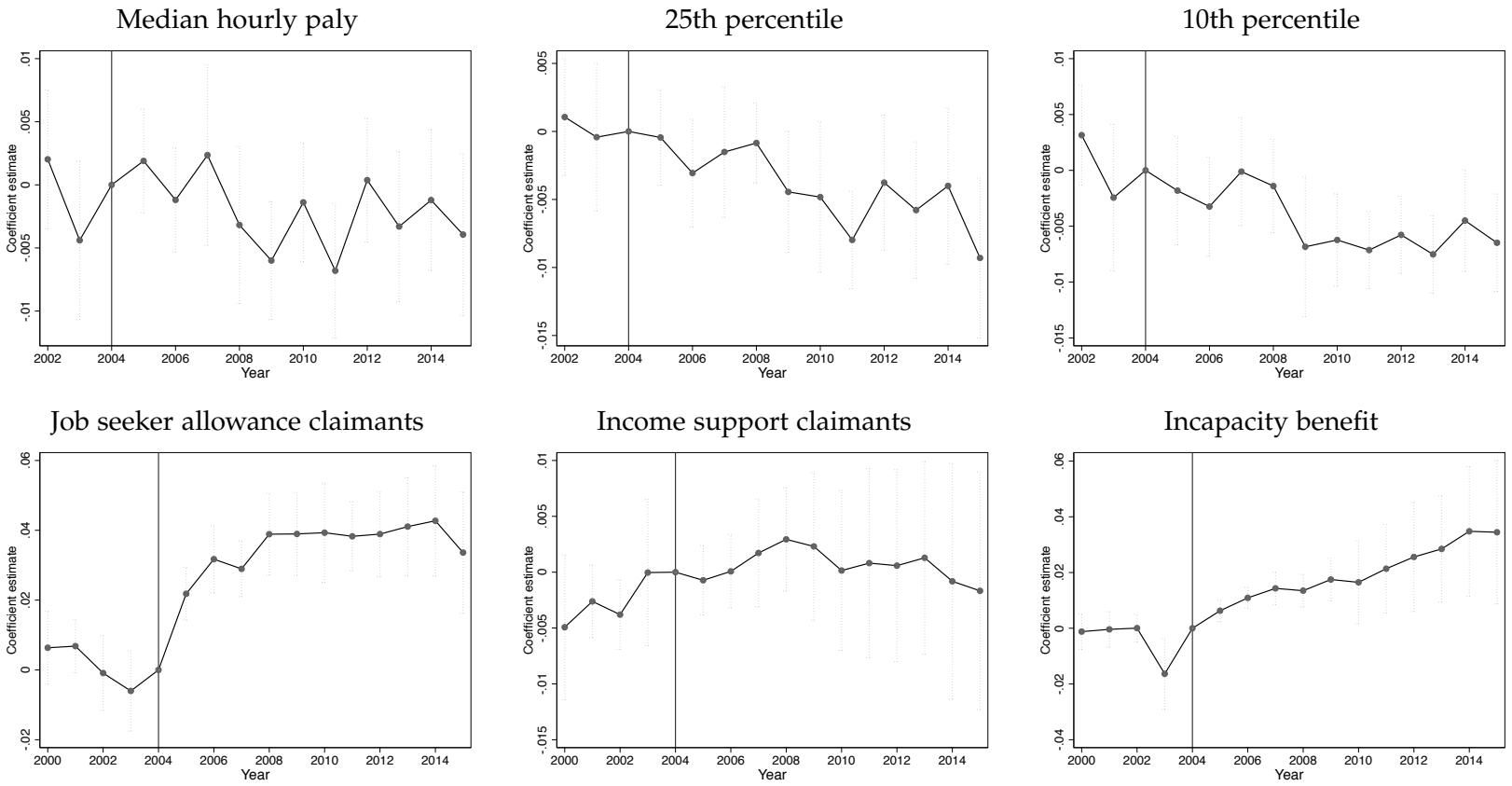

Figure A4: Figure presents evidence in support of common trends assumption for other main outcome variables of interest: effects on wages as well as demand for benefits. The figures present estimated coefficients from a specification interacting the Accession Shock variable with year dummies, controlling for local authority and region by year fixed effects. 10% confidence bands are indicated as dashed lines.

Table A1: Validation of UKIP vote as measure of anti-EU and anti immigration sentiment

	(1)	(2)	(3)
Panel A: (Strongly) disapprove of British EU membership [2005, 2010, 2015]			
(Will) vote for UKIP	0.450***	0.457***	0.460***
	(0.030)	(0.031)	(0.033)
Mean of DV	.331	.345	.352
LGA Districts	270	226	198
Respondents	7295	4958	4440
Panel B: (Strongly) agree EU is responsible for UK debt [2015]			
(Will) vote for UKIP	0.138***	0.142***	0.158***
	(0.034)	(0.036)	(0.037)
Mean of DV	.265	.276	.286
LGA Districts	209	181	155
Respondents	2019	1718	1519
Panel C: (Strongly) disagree that EU threat to British sovereignty is exaggerated [2005]			
(Will) vote for UKIP	0.324***	0.312***	0.253**
	(0.080)	(0.101)	(0.117)
Mean of DV	.31	.327	.326
LGA Districts	104	69	59
Respondents	4296	2454	2204
Panel C: Immigration is not good for economy [2005, 2010]			
(Will) vote for UKIP	0.396***	0.356**	0.355*
	(0.147)	(0.172)	(0.184)
Mean of DV	3.03	3.04	3.07
LGA Districts	191	147	128
Respondents	4702	2975	2689
Panel C: Immigrants take jobs from natives [2005, 2010]			
(Will) vote for UKIP	0.447***	0.453**	0.382**
	(0.151)	(0.189)	(0.175)
Mean of DV	3.03	3.06	3.08
LGA Districts	190	146	127
Respondents	5096	3104	2795
Panel D: Yes, too many immigrants have been let into this country [2015]			
(Will) vote for UKIP	0.255***	0.258***	0.254***
	(0.016)	(0.016)	(0.015)
Mean of DV	.73	.731	.751
LGA Districts	209	181	155
Respondents	2019	1718	1519
Panel E: (Strongly) agree immigrants increase crime rates [2005, 2010]			
(Will) vote for UKIP	0.293***	0.275***	0.260***
	(0.061)	(0.071)	(0.075)
Mean of DV	.44	.462	.468
LGA Districts	191	147	128
Respondents	4690	2963	2677
Sample	All	England	Not London
Respondent controls	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes

Notes: Table reports results from a OLS regressions on variables obtained from the 2005, 2010 and 2015 British Election Study. The years in which data is available for respective question is presented in parenthesis. All regressions control for respondent age, gender, an indicator of whether the respondent has no formal qualifications, a quadratic in age and an interaction with the education indicator and age. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A2: Matching Regression.

	Accession Shock	
	(1)	(2)
Urban District	-0.750**	-0.789**
	(0.363)	(0.317)
Share of resident population born in continental European EU as of 2001	-77.892***	-55.256***
	(29.023)	(20.993)
Share of population born in Non EU as of 2001	28.655***	18.781***
	(5.301)	(3.068)
Median Hourly Wage	-0.286***	-0.355***
	(0.107)	(0.090)
Deprivation Index (2001)	-0.166	
	(0.140)	
Agriculture employment share (2001)	5.705	
	(7.209)	
Mining employment share (2001)	46.743***	48.795***
	(17.652)	(14.040)
Manufacturing employment share (2001)	-5.368	
	(3.485)	
Finance employment share (2001)	-8.074	
	(6.237)	
Transport employment share (2001)	6.363	16.031***
	(5.329)	(4.576)
Resident Population 16-64 share Qualification 4+ (2001)	-17.542**	
	(8.438)	
Share of population aged 64plus (2001)	-6.084	
	(5.962)	
Share of Households living in Council rented housing (2001)	7.927***	5.389***
	(2.649)	(1.492)
Share of Households living in private rental housing (2001)	6.295	
	(6.311)	
Share of Households living in mortgaged house (2001)	1.211	
	(4.256)	
Leave Share 1975 Referendum	-0.873	
	(2.862)	
Share of resident population with low qualifications (2001)	-0.343	5.829***
	(6.788)	(2.039)
Region dummies:		
E12000001	0.000	0.000
	(.)	(.)
E12000002	0.372	
	(0.496)	
E12000003	0.255	
	(0.480)	
E12000004	0.255	
	(0.472)	
E12000005	0.771	0.357
	(0.521)	(0.328)
E12000006	0.177	
	(0.534)	
E12000007	-0.380	
	(0.863)	
E12000008	0.238	
	(0.549)	
E12000009	-0.383	
	(0.552)	
N92000002	0.000	
	(.)	
S92000003	-0.548	-1.023***
	(0.684)	(0.372)
W92000004	0.000	-0.534
	(.)	(0.382)
Constant	4.868	-2.568*
	(5.816)	(1.531)
N	368	368
Country Dummies		

Notes: Table reports results from a the matching specification. The dependent variable is a dummy indicating whether a local authority district experienced an Accession shock in the upper quartile. Column (1) presents all cross sectional characteristics, while column (2) restricts the set of regressors to be those that are identified using best subset selection. Robust standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A3: **Treatment by Quartiles**

	Quartiles				
Treatment	1	2	3	4	Total
Untreated	10	16	26	0	52
Treated	0	0	0	52	52
Total	10	16	26	52	104

Table A4: Impact of Migration from EU accession countries on UKIP vote share: robustness to alternative specifications

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Local Authority and Year FE						
After 2004 × Accession Shock	0.012	0.015*	0.028**	0.013	0.012	0.010
	(0.010)	(0.009)	(0.011)	(0.017)	(0.013)	(0.012)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Panel B: Local Authority and Country by Year FE						
After 2004 × Accession Shock	0.016*	0.015*	0.028**	0.013	0.012	0.010
	(0.009)	(0.009)	(0.011)	(0.012)	(0.013)	(0.012)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Panel C: Local Authority and Region by Year FE						
After 2004 × Accession Shock	0.017***	0.016***	0.023***	0.014**	0.013**	0.012**
	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Sample	All	England	Not London	All	England	Not London

Notes: Table reports results from a panel OLS regressions. The dependent variable throughout is the log value of the UKIP Vote share in the EP elections from 1999 to 2014. Panel A, Panel B and Panel C use different time fixed effects. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5: Impact of Migration from EU accession countries on UKIP vote share: weighting and levels

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: log(UKIP vote share) unweighted						
After 2004 × Accession Shock	0.017***	0.016***	0.023***	0.014**	0.013**	0.012**
	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Panel B: log(UKIP vote share) weighted						
After 2004 × Accession Shock	0.015**	0.014**	0.026***	0.015	0.012	0.010
	(0.007)	(0.007)	(0.006)	(0.009)	(0.009)	(0.009)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Panel C: UKIP vote share unweighted						
After 2004 × Accession Shock	0.004***	0.004***	0.005***	0.004**	0.004**	0.004*
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Panel D: UKIP vote share weighted						
After 2004 × Accession Shock	0.003**	0.003*	0.004**	0.003	0.003	0.002
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
LGA Districts	380	326	293	104	84	75
Observations	1520	1304	1172	416	336	300
Sample	All	England	Not London	All	England	Not London

Notes: Table reports results from a panel OLS regressions. The dependent variable is the logged value (Panel A and B) or the level of the UKIP vote share (Panel A and B) in the EP elections from 1999 to 2014. Panel B and D weigh the the regressions by the British resident population as per the 2001 census. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A6: The Impact of Migration from EU Accession countries on the UKIP Vote Share in EP Elections: Fuzzy Difference in Difference Wald Estimator according to de Chaisemartin and D'Haultfoeuille (2015)

	Whole sample		
	(1)	(2)	(3)
Panel A: Non treated lowest 10%			
After 2004 x Accession Shock	.0136	.0153	.0233
	(.0164)	(.0206)	(.0204)
Panel B: Non treated lowest 15%			
After 2004 x Accession Shock	.0277*	.0363**	.0368**
	(.0152)	(.0171)	(.0175)
Panel C: Non treated lowest 20%			
After 2004 x Accession Shock	.0289*	.0369**	.0365**
	(.0149)	(.0163)	(.0168)
Sample	All	England	Not London
LGA District FE	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes

Notes: Table reports results from a Fuzzy Difference in Difference Wald Estimator according to de Chaisemartin and D'Haultfoeuille (2015). The dependent variable is the log value of the UKIP Vote share in the EP elections in 1999, 2004, 2009 and 2014. The estimation method requires specification of a group of places that have limited treatment. The table presents results when assigning the counties with the lowest 10, 15 and 20% Accession Shock to serve as this group. Standard errors clustered at the Local Authority District level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A7: Migration from EU Accession and crimes.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Violent Crime per capita						
After 2004 × Accession Shock	0.007	0.007	0.006	0.008	0.006	0.006
	(0.005)	(0.005)	(0.006)	(0.008)	(0.009)	(0.009)
LGA Districts	342	320	287	90	83	74
Observations	4469	4161	3699	1209	1111	985
Panel B: Public order crimes per capita						
After 2004 × Accession Shock	0.005	0.003	0.001	0.012	0.003	0.002
	(0.009)	(0.009)	(0.011)	(0.013)	(0.015)	(0.015)
LGA Districts	342	320	287	90	83	74
Observations	4469	4161	3699	1209	1111	985
Panel C: Property crimes per capita						
After 2004 × Accession Shock	0.003	0.002	-0.001	0.007	0.005	0.005
	(0.006)	(0.007)	(0.009)	(0.012)	(0.013)	(0.013)
LGA Districts	342	320	287	90	83	74
Observations	4469	4161	3699	1209	1111	985
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The dependent variable is given in the respective panel headings and available for England and Wales as an unbalanced panel from 2002 to 2015. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A8: Migration from EU Accession and the housing market.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Households living in rented housing						
After 2004 × Accession Shock	0.007***	0.008***	0.008***	0.004***	0.004***	0.004***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)
LGA Districts	380	326	293	104	84	75
Observations	760	652	586	208	168	150
Panel B: log(Median Terraced House Price)						
After 2004 × Accession Shock	0.008***	0.008***	0.012***	0.003	0.002	0.002
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
LGA Districts	341	319	287	89	82	73
Observations	5106	4776	4296	1326	1221	1086
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The measure in Panel A is from the 2001 and 2011 census for England, Scotland and Wales. In Panel B, house prices are a balanced panel from 1997 to 2013 for England and Wales. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A9: Effect of Migration from EU Accession countries on group levels on labor market outcomes, demand for services and housing.

	Whole sample					Matched sample				
		log(Total by country of birth)					log(Total by country of birth)			
	log(Total) (1)	UK (2)	Accession (3)	EU15 (4)	RoW (5)	log(Total) (6)	UK (7)	Accession (8)	EU15 (9)	RoW (10)
Labor Market										
Panel A: Unemployed										
After 2004 × Accession Shock	0.024***	0.018*	0.328***	0.038	0.021	0.046***	0.041***	0.389***	0.081***	0.017
	(0.009)	(0.009)	(0.047)	(0.023)	(0.017)	(0.008)	(0.008)	(0.101)	(0.026)	(0.018)
Mean of DV in 2001 [in 1000s]	1.09	.93	.01	.03	.12	1.2	1.06	.01	.02	.12
Panel B: Never worked										
After 2004 × Accession Shock	0.023***	0.010*	0.356***	0.060***	0.026**	0.012**	0.003	0.169***	0.025	0.017
	(0.006)	(0.005)	(0.059)	(0.015)	(0.011)	(0.005)	(0.005)	(0.051)	(0.017)	(0.011)
Mean of DV in 2001 [in 1000s]	2.93	1.96	.03	.06	.88	3.08	2.21	.02	.06	.79
Panel C: Routine Jobs										
After 2004 × Accession Shock	0.016***	-0.004	0.387***	0.058***	0.042***	0.012***	-0.004	0.300***	0.076***	0.051***
	(0.003)	(0.003)	(0.054)	(0.013)	(0.009)	(0.004)	(0.003)	(0.077)	(0.015)	(0.010)
Mean of DV in 2001 [in 1000s]	21.1	20.26	.08	.47	1.43	23.53	22.77	.08	.45	1.3
Panel D: Manufacturing										
After 2004 × Accession Shock	0.034***	0.000	0.409***	0.062***	0.070***	0.049***	0.011*	0.309***	0.128***	0.081***
	(0.006)	(0.005)	(0.059)	(0.023)	(0.012)	(0.006)	(0.006)	(0.083)	(0.024)	(0.010)
Mean of DV in 2001 [in 1000s]	10.21	9.47	.03	.18	.54	10.87	10.2	.03	.17	.47
Services & Housing demand										
Panel E: Disability										
After 2004 × Accession Shock	0.011***	-0.008**	0.186***	0.008	0.026***	0.011***	0.002	0.183***	0.022*	0.017**
	(0.002)	(0.003)	(0.011)	(0.009)	(0.007)	(0.002)	(0.003)	(0.015)	(0.013)	(0.008)
Mean of DV in 2001 [in 1000s]	150.4	24.98	.16	.69	1.59	157.2	27.39	.15	.68	1.44
Panel F: Living in social rented housing										
After 2004 × Accession Shock	-0.002	-0.011***	0.298***	0.060***	0.053***	0.007**	-0.000	0.282***	0.092***	0.061***
	(0.004)	(0.004)	(0.038)	(0.014)	(0.013)	(0.003)	(0.003)	(0.081)	(0.013)	(0.017)
Mean of DV in 2001 [in 1000s]	26.38	23.99	.09	.53	1.77	29.31	27.11	.08	.47	1.65
Panel G: Living in private housing										
After 2004 × Accession Shock	0.067***	0.019*	0.364***	0.098***	0.063***	0.043***	-0.004	0.259***	0.106***	0.025
	(0.012)	(0.011)	(0.061)	(0.013)	(0.018)	(0.010)	(0.008)	(0.079)	(0.021)	(0.019)
Mean of DV in 2001 [in 1000s]	15.95	13.05	.1	.69	2.11	16.18	13.72	.09	.55	1.81
Panel H: Home ownership										
After 2004 × Accession Shock	-0.001	-0.008**	0.214***	-0.002	0.036***	0.003*	0.000	0.204***	0.015**	0.026***
	(0.002)	(0.003)	(0.016)	(0.007)	(0.009)	(0.001)	(0.002)	(0.021)	(0.006)	(0.006)
Mean of DV in 2001 [in 1000s]	105.4	97.72	.41	1.98	5.26	109.1	101.9	.4	1.91	4.88
LGA Districts	344	344	344	344	344	91	91	91	91	91
Observations	688	688	688	688	688	182	182	182	182	182
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A10: Robustness to working with hourly pay at the workplace level: Effect of Migration from EU Accession affecting lower end of wage distribution.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Median Hourly Pay						
After 2004 × Accession Shock	0.002	0.003	0.003	0.001	0.002	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
LGA Districts	378	324	291	103	83	74
Observations	5969	5117	4589	1640	1328	1184
Panel B: 25th Percentile Hourly Pay						
After 2004 × Accession Shock	-0.001	-0.000	-0.000	-0.001	-0.001	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
LGA Districts	379	325	292	103	83	74
Observations	5991	5131	4603	1644	1328	1184
Panel C: 10th Percentile Hourly Pay						
After 2004 × Accession Shock	-0.002	-0.002	-0.003*	-0.004**	-0.003*	-0.004**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
LGA Districts	379	325	292	103	83	74
Observations	5795	4989	4461	1611	1309	1165
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The data set is a balanced panel of hourly wages by location of work from 1999 to 2014 across different quantiles. A few observations are missing as the Office of National Statistics deemed the statistics not precise enough. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A11: Migration from EU Accession and the housing market.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Households living in rented housing						
After 2004 × Accession Shock	0.007***	0.008***	0.008***	0.004***	0.004***	0.004***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)
LGA Districts	380	326	293	104	84	75
Observations	760	652	586	208	168	150
Panel B: log(Median Terraced House Price)						
After 2004 × Accession Shock	0.008***	0.008***	0.012***	0.003	0.002	0.002
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
LGA Districts	341	319	287	89	82	73
Observations	5106	4776	4296	1326	1221	1086
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The measure in Panel A is from the 2001 and 2011 census for England, Scotland and Wales. In Panel B, house prices are a balanced panel from 1997 to 2013 for England and Wales. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A12: Alternative Exposure Measure: The Impact of Migration from EU Accession countries on the UKIP Vote Share in EP Elections.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Anti EU UKIP						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	0.918*	0.935*	2.263***	1.871**	1.617**	1.617**
	(0.488)	(0.480)	(0.522)	(0.813)	(0.753)	(0.753)
LGA Districts	380	326	293	72	60	60
Observations	1520	1304	1172	288	240	240
Turnout						
Panel B: Turnout						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	0.396	0.291	0.452	-0.032	-0.153	-0.153
	(0.262)	(0.251)	(0.294)	(0.272)	(0.290)	(0.290)
LGA Districts	380	326	293	72	60	60
Observations	1520	1304	1172	288	240	240
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The dependent variable is the log value of the UKIP Vote share in the EP elections from 1999 to 2014 in Panel A. Panel C has fewer observations as the British Nationalist Party vote share was not separately reported in 1999 and is also missing for Wales in 2004. All regressions include baseline population shares for EU , Non-EU and EU Accession countries flexibly interacted with year fixed effects. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.2. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A13: Alternative Exposure Measure: Effect of Migration from EU Accession affecting lower end of wage distribution.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Median Hourly Pay						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	-0.170	-0.157	-0.048	-0.350	-0.357	-0.357
	(0.146)	(0.155)	(0.170)	(0.314)	(0.339)	(0.339)
LGA Districts	379	325	292	72	60	60
Observations	5227	4480	4030	1002	834	834
Panel B: 25th Percentile Hourly Pay						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	-0.456***	-0.472***	-0.329*	-0.479	-0.527	-0.527
	(0.162)	(0.175)	(0.178)	(0.341)	(0.380)	(0.380)
LGA Districts	379	325	292	72	60	60
Observations	5244	4493	4040	1002	834	834
Panel C: 10th Percentile Hourly Pay						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	-0.363**	-0.423***	-0.349**	-0.564**	-0.758***	-0.758***
	(0.145)	(0.146)	(0.176)	(0.268)	(0.253)	(0.253)
LGA Districts	378	325	292	72	60	60
Observations	5167	4449	3999	1002	834	834
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. All regressions include baseline population shares for EU , Non-EU and EU Accession countries flexibly interacted with year fixed effects. The data set is a balanced panel of hourly wages by location of residence from 2002 to 2014 across different quantiles. A few observations are missing as the Office of National Statistics deemed the statistics not precise enough. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.2. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A14: Alternative Exposure Measure: Migration from EU Accession and crimes.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Violent Crime per capita						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	0.382	0.389	0.254	0.756	0.755	0.755
	(0.549)	(0.552)	(0.707)	(0.771)	(0.772)	(0.772)
LGA Districts	342	320	287	61	58	58
Observations	4469	4161	3699	820	778	778
Panel B: Public order crimes per capita						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	-0.367	-0.541	-0.697	1.693	1.583	1.583
	(0.988)	(0.994)	(1.257)	(1.079)	(1.087)	(1.087)
LGA Districts	342	320	287	61	58	58
Observations	4469	4161	3699	820	778	778
Panel C: Property crimes per capita						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	0.541	0.478	0.454	0.737	0.628	0.628
	(0.608)	(0.618)	(0.772)	(1.327)	(1.382)	(1.382)
LGA Districts	342	320	287	61	58	58
Observations	4469	4161	3699	820	778	778
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The dependent variable is given in the respective panel headings and available for England and Wales as an unbalanced panel from 2002 to 2015. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A15: Alternative Exposure Measure: Effect of Migration from EU Accession on demand for benefits.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Jobseeker Allowance Claimants						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	2.534***	2.898***	2.891***	2.262**	2.600***	2.600***
	(0.511)	(0.510)	(0.582)	(0.881)	(0.899)	(0.899)
LGA Districts	380	326	293	72	60	60
Observations	6080	5216	4688	1152	960	960
Panel B: Income Support Benefits Claimants						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	0.454	0.455	0.255	0.090	0.407	0.407
	(0.377)	(0.395)	(0.380)	(0.673)	(0.657)	(0.657)
LGA Districts	380	326	293	72	60	60
Observations	6067	5203	4675	1152	960	960
Panel C: Incapacity Benefit Claimants						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	1.935***	2.193***	2.714***	1.349***	1.366***	1.366***
	(0.347)	(0.373)	(0.502)	(0.407)	(0.340)	(0.340)
LGA Districts	380	326	293	72	60	60
Observations	6080	5216	4688	1152	960	960
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The data set is a balanced panel of hourly wages by location of residence from 2002 to 2014 across different quantiles. A few observations are missing as the Office of National Statistics deemed the statistics not precise enough. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.05. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A16: Alternative Exposure Measure: Migration from EU Accession and the housing market.

	Whole sample			Matched sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Households living in rented housing						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	0.606***	0.617***	0.760***	0.332***	0.286***	0.286***
	(0.095)	(0.101)	(0.140)	(0.079)	(0.064)	(0.064)
LGA Districts	380	326	293	72	60	60
Observations	760	652	586	144	120	120
Panel B: log(Median Terraced House Price)						
Post 2004 $\times\Delta$ EU Accession/Initial Pop	0.184	0.185	0.929***	0.611*	0.571	0.571
	(0.285)	(0.287)	(0.311)	(0.366)	(0.350)	(0.350)
LGA Districts	341	319	287	63	60	60
Observations	5106	4776	4296	945	900	900
Sample	All	England	Not London	All	England	Not London
LGA District FE	Yes	Yes	Yes	Yes	Yes	Yes
Region x Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table reports results from a panel OLS regressions. The measure in Panel A is from the 2001 and 2011 census for England, Scotland and Wales. In Panel B, house prices are a balanced panel from 1997 to 2013 for England and Wales. All regressions include baseline population shares for EU , Non-EU and EU Accession countries flexibly interacted with year fixed effects. Columns (4) - (6) restrict the analysis to matched pairs of observations whose propensity score difference predicting the upper quartile of the accession shock measure is less than 0.2. Standard errors clustered at the Local Government Authority District Level are presented in parentheses, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.