The Effects of Welfare Restrictions on the Labour Supply of EU Immigrants in the UK

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Abstract

As the debate on immigration policies grows, the economic literature has focused on the behaviour of immigrants, including their impact on the welfare system. In this analysis, I use a difference-in-difference setting to investigate the effect of stricter immigration policies in terms of benefit claims and of the labour supply of a newly immigrated workforce. I analyse the case of the European 2004 Accession (A8) countries and the temporary limitations in the eligibility to welfare assistance that immigrants from these countries faced until April 2011 in the UK. I find that under the stricter regime A8 immigrants claim less benefits and are more likely to be in employment. Results are consistent with the hypothesis that, if denied welfare support, immigrants may be more keen on increasing their labour supply in order to compensate for the foregone receipt of assistance, especially when they are more financially constrained. Nevertheless, even when restrictions are relaxed, immigrants still work more than their UK-born counterparts and their take-up of benefits is not higher than that of the natives.

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1 Introduction

On May 2004, a group of countries entered the European Union and since then have become commonly known as Accession Countries or A8 Countries.[1] The 2004 EU enlargement came with a sudden increase of the European population by almost 75 million people (i.e. by 20%) and, evidently, the opening of its labour market to millions of potential workers from the new member states. Fears of massive migration flows within the post-enlargement EU and concerns on the risk of severe shocks to their labour markets and to their welfare systems led the old members to temporarily restrict access to workers coming from the A8 countries, with the UK, Ireland and Sweden being the only exceptions (Boeri et al., 2005). Indeed, in the years 2004-2007 only, 1.2 million A8-born workers moved to these three countries (Elsner, 2013).

In the UK alone, it is estimated that the foreign-born population has increased from around 3.8 million to 7.8 million in the years 1993 to 2013, while the number of foreign citizens has risen from 2 million to 5 million (Rienzo and Vargas-Silva, 2014). In view of such figures, inevitably, the debate on the access to and the usage of welfare benefits from migrants who live in the UK has become an extremely hot topic in the political agenda and has been widely covered in the media. The two main concerns related to this phenomenon pertain to a possible congestion of public goods and services and to the potential insurgence of the so-called 'Benefit Tourism', i.e. foreign citizens moving to a country with the (explicit) intention to make use of the welfare assistance there.[2] As a matter of fact, along with the widespread belief that the presence of immigrants might jeopardise the employability and the wage level of natives, these arguments have come to form one of the cornerstones of the Leave campaign for the 2016 Brexit referendum (Wadsworth et al., 2016).

The possibility that immigration might harm labour market opportunities of natives has been thoroughly investigated in the literature, yielding extensive evidence that this is not the case.[3] On the other hand, only a few empirical studies have assessed the participation of immigrants to welfare in the UK. They generally conclude that immigrants, and especially those coming from other European countries, make less use of welfare and social assistance with respect to natives (Barrett and McCarthy, 2008; Drinkwater and Robinson, 2013; Battiston et al., 2014) and, contrary to the resident UK-born population, they positively contribute to the fiscal balance (Dustmann and Frattini, 2014). To my knowledge, however, no study has examined the potential effects of restraining welfare access to the foreign-born sub-population.

[1] A8 countries are Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. Malta and Cyprus also joined the EU on the same date.

[2] As to the first issue, British Prime Minister Theresa May in January 2017 has argued that "while controlled immigration can bring great benefits, [...] when the numbers get too high, public support for the system falters" (*The Independent*, 17 January 2017). Yet, Dustmann and Frattini (2014) point out that the marginal cost of providing public goods to immigrants is likely to be lower than the average cost. As to the second concern, the former British Foreign Secretary Philip Hammond has publicly stated that Britain would be "'wide open to abuse' by 'freeloading' EU migrants who are exploiting the welfare state" (*The Telegraph*, 20 January 2015). However, little evidence supports the main intra-EU migration motives being benefit-related, as opposed to work- or family-related (Verschueren, 2014). Likewise, Drinkwater and Robinson (2013, p. 110) argue that "fears of large numbers of A8 immigrants looking to take advantage of welfare benefits, rather than to work, appear to be unfounded".

[3] See, among others, Dustmann et al. (2005); Clark and Drinkwater (2008); Manacorda et al. (2012).

This is the first empirical assessment of the consequences of the temporary transitional restrictions that were applied to immigrants from the A8 countries after the 2004 EU enlargement. I evaluate the effect of such restrictions on the take-up of benefits and on the consequences in terms of labour supply for the people affected by the limitations to welfare access. The analysis focuses on the UK as the destination country and refers to the decade immediately following the 2004 EU enlargement. Nevertheless, its implications might easily be applied to other contexts.

The case of the UK is convenient to this purpose for two reasons. The first one is found in the set-up of the transitional limitations that were applied to A8 nationals in the years 2004-2011. Specifically, while granted full access to the UK on the basis of the free movement rights, which apply to all citizens of the European Economic Area (EEA), until April 2011 immigrants coming from the A8 countries had to satisfy some additional conditions to the ones in force for EEA nationals in order to gain a Right to Reside (i.e. for welfare purposes). After this date, A8 immigrants were wholly equalised to other EEA citizens. The way the limitations have been designed provides a suitable setting that allows to identify the effect of such restrictions by comparing A8 and EU15 immigrants before and after the change in policy.[4] The second factor that makes the UK a valid unit of analysis consists of the large flows of migrants that have arrived in the country in the past century and especially in the past decade, when it received a considerable influx of workers from the newly-accessed countries to the European Union.

This analysis evaluates the effects of limitations to welfare access in terms of two main contexts. I begin with measuring the reduction in the claiming rate of benefits for A8 immigrants in the UK with respect to their EU15 counterparts when the temporary restrictions to public assistance are in place. Indeed, I find that the transitional limitations yield a decline by around 6 p.p. in the probability of claiming benefits for A8 nationals and that the effect is particularly intense for females and the less educated immigrants.

Then, I examine whether such reduction in the claim of benefits is accompanied by an increase in the probability to work. In principle, if immigrants are subject to a reduced access to welfare, they may be pushed to make up for the foregone compensation by increasing their willingness to work. This should be especially true for those who are more financially constrained, who usually happen to be also those who are more in need of assistance. I provide evidence that this mechanism does, in fact, take place: A8 immigrants who undergo limitations in access to welfare are 4.5 p.p. more likely to be in employment and symmetrically less likely to be inactive. In line with the results on benefit take-up, I find that female participation is mostly affected by the restrictions. Furthermore, the transitional regime induce A8 nationals to work longer hours, especially if less educated, which would further suggest that the stricter regulations are, indeed, applied to the sub-population of immigrants who might be in deeper distress.

Finally, the available data allow to compare the behaviour of A8 immigrants to that of natives, before and after the relaxation of the stricter regime. Figures clearly show that, even when A8 nationals have full access to welfare, they do not appear to claim more than the natives. Moreover, they work longer hours than the UK-born, who, in turn, have higher inactivity rates.

[4] EU15 countries are essentially those belonging to the EU prior to the 2004 enlargement (including Switzerland).

The remainder of this paper is organised as follows. In the next section I summarise the main literature on immigration, labour supply and welfare, with a focus on the case of the UK and European migration to this country. In section 3 I describe the the identification strategy and the data used in the analysis. Sections 4 and 5 are dedicated to the empirical results in terms of claim of benefits and labour supply, respectively, while section 6 focuses on the impact of the policy by gender and educational attainment. Finally, section 7 concludes.

2 Review of the Literature

Immigration is a phenomenon that affects most rich and developed countries as receiving countries. Questions about economic and social consequences of increasingly large flows of immigrants have led researchers to thoroughly investigate their effects from the perspective of the host country. Moreover, this trend is particularly recurrent when migration flows involve disproportionately low skilled workforce, which bring about fears of unsustainable pressure on welfare or of negative effects of migration on the labour market opportunities of native workers. Nevertheless, as De Giorgi and Pellizzari (2009) point out, immigration may still act as a profitable force that may counterbalance the relative immobility of the native workforce, especially in places like Europe, where internal mobility rates are much lower than the US.[5] This, of course, as long as migration is driven by labour market factors and not by the relative generosity of welfare in the host country.

Hence, an extensive theoretical and empirical evidence has developed in order to assess the actual impact of immigration on a number of outcomes. While the main core is focused especially on labour market effects, also other dimensions, such as health (Norman et al., 2005; Wadsworth, 2013; Kennedy et al., 2014; Giuntella, 2014), housing (Saiz, 2007; Battiston et al., 2014; Sa, 2015), schools (Geay et al., 2013) and crime (Bell and Machin, 2011; Bell et al., 2013; Mastrobuoni and Pinotti, 2015), have been amply analysed.

In what follows, I briefly present and discuss the existing literature related to the labour market and to welfare participation in the context of immigration, with a special emphasis on the case of the UK and, particularly, on the consequences of the 2004 EU enlargement.

2.1 Immigration and the Labour Market

In the last decades, the extensive literature that looks into this relationship finds modest or absent effects of immigration on the employment opportunities and the wages of the native population.[6] The theory predicts that immigration affects the labour market differently depending on the economic structure of the host country and the skill mix of the immigrant population

[5] As a matter of fact, Hatton and Tani (2005) claim that the labour market impact of immigration is underdetected by empirical analyses because this fades out as a result of the resident population relocating elsewhere. They examine the effect of net migration to a British region from abroad on the internal mobility across regions and find that these are negatively and significantly correlated in the Southern regions of the UK, where most immigrants are concentrated.

[6] See Borjas (1999b) and Dustmann and Glitz (2005) for an extensive review.

compared to the natives (Dustmann et al., 2005).[7] Differently from studies on the US, which generally find that immigrants are predominantly less skilled than the natives (Card, 1990; Borjas, 1999b), Dustmann and Fabbri (2005) show that in the UK several groups of immigrants have a higher percentage of graduates compared to the white British-born population.[8]

The impact of immigration on the UK labour market is evaluated for the first time by Dustmann et al. (2005), who argue that there is no statistically significant overall evidence of any effect of immigration on wages or on participation, employment and unemployment rates of natives. When they split the sample by educational level, they detect a small adverse effect on employment for the intermediate qualifications, but this is neutralised by the positive impact on the highly educated groups. In a more recent paper, Dustmann et al. (2013) further analyse whether immigration influences the wages of natives in the UK, with a specific investigation along the wage distribution and find an overall slightly positive average effect. When this is decomposed along the wage distribution, however, the authors observe a depression of wages below the 20th percentile, where the presence of immigrants is relatively more dense, and an increase in wage for those above the 40th percentile. Manacorda et al. (2012) offer an explanation to the inconclusive results found in the literature by claiming that the puzzling absence of a significant effect is to be attributed to immigrants and natives being imperfect substitutes in the labour market.[9] In fact, they show that the recent inflows of migrants into the UK, disproportionally composed of highly-educated individuals, have contributed to drive the wages of older immigrants down, while leaving those of natives relatively unaffected.

Part of the literature is specifically focused on the conditions of immigrants in the host country and their position relative to the native population. In his seminal work on the labour market performance of immigrants, Chiswick (1978) argues that immigrants are disadvantaged on the labour market with respect to natives because they lack of knowledge of country-specific information (e.g., language, customs, institutions, etc.) and human capital. On the other hand, those who migrate are generally positively selected in terms of motivation and ability and this makes it possible for them, *ceteris paribus*, to become more productive and, consequently, earn more than the native-born (Chiswick, 1978).

Dustmann and Fabbri (2005) analyse the labour market performance of immigrants in the UK prior to the 2004 EU enlargement. Specifically, they shed some light on the characteristics and the participation to the labour force of different groups of foreign-born, their employment rate, their wages and and their likelihood to be in self-employment. Over the period 1979-2004, employment and participation rates for non-white foreign-born were lower than for natives,

[7]For instance, Olney (2013), using US data, finds that a large inflow of low-skilled immigrants determines an increase in the number of small, predominantly low-skill intensive establishments in an area.

[8]As a matter of fact, Jauer et al. (2014) investigate on the response of migration to labour market shocks, comparing Europe and the United States before and during the financial crisis that struck in 2008. They estimate that the return of migration to labour market shocks was stronger in the years immediately prior to the crisis in the US, while the opposite has happened in Europe.

[9]Such an argument is also supported by Peri and Sparber (2009), who suggest that immigrant workers in the US specialise in physical-labour-intensive jobs while low-educated natives opt for occupations that are more intensive in communication and language tasks. According to the authors, this may explain why immigration failed to cause an (expectedly) adverse fallout on the wages of low-skilled native workers.

while white immigrants tend to behave similarly to the white British-born. The authors also find dramatic differences by group and observe that white immigrants tend to have higher wages than natives, while non-white foreign-born have lower wages than their white British-born counterparts. Similarly, Barrett and McCarthy (2007) estimate that immigrants earn 18 per cent less than their native counterparts in Ireland, even when controlling for factors such as education and experience. They also find some heterogeneity across groups, with immigrants from non-English speaking countries being the most penalised.

In accordance with the previous investigations, Clark and Drinkwater (2008) observe that migrants who recently arrived to the UK are generally disadvantaged in terms of employment opportunities and wages compared to the natives. They argue that recent A8 immigrants belong to the group with the lowest returns to education, being them generally highly-qualified but employed in low-skilled occupations. This is also claimed by Campbell (2013), who estimates that 61% of A8-born immigrants that have arrived in the UK after 2004 are over-educated for their job.

Finally, Elsner (2013) and Dustmann et al. (2015) estimate the effect of the migration shocks following the 2004 European enlargement on the labour market of the sending countries. Both analyses conclude that emigration had an overall positive effect on wage in the country of origin, especially for young workers (Elsner, 2013) and those in the intermediate skill group (Dustmann et al., 2015).

2.2 Immigrants and Welfare Participation

Brucker et al. (2002) pinpoint differences in education, age and number of dependent children as the main factors that make immigrants more reliant on social assistance compared to natives (*welfare dependency*). In addition, they identify several reasons why, regardless of individual characteristics, immigrants may participate into the welfare system to a greater or lesser extent compared to the native population, i.e. what they refer to as *residual dependency*. First, immigrants may self-select into living in a country with a relatively more generous welfare system; on the other hand, their access to welfare may be restricted or excluded by law in the host country (non-portability of entitlements). Then, some migration-specific effect, such as trauma or inability of speaking the language, may induce immigrants to rely more on welfare. This may also be the case if they face discrimination or other factors that may lead to a reduction in wages and their employment opportunities. Finally, there may be network effects which may either assist immigrants in increasing their chances of finding a job, and therefore make them less reliant on welfare or, conversely, lead them to isolate from the resident society and, consequently, be more likely to receive state benefits. Hence, the two main issues related to immigrants and their receipt of welfare services concern: (i) whether immigrants are more prone to claim benefits with respect to natives, and (ii) whether more generous welfare systems tend to attract disproportionately more low-skilled immigrants, who may, in turn, have a relatively higher participation rate into welfare services.

With respect to the the attractiveness of welfare systems, Borjas (1999a) develops a model

of migration across locations which vary in terms of the generosity of their welfare systems and of the returns to skills. The model predicts, among other things, that low-skilled workers tend to cluster where institutions are more generous and that the elasticity of welfare participation is higher for immigrants than for natives.[10]

As far as the relative intensity in the use of welfare services by immigrants is concerned, most empirical research focuses on the US and on some European countries. These two cases, however, differ in many aspects, including the types of welfare programs available, the characteristics of the immigrant population they receive, the timing of influx waves of immigrants and the relative mobility of the native population within each country. Hence, there is some heterogeneity in the findings across the two strands of the literature and the policy implications that can be drawn from them.[11]

Brucker et al. (2002) provide an analysis at the European level, where they observe the welfare participation of non-EU citizens in 11 European countries. They estimate that immigrants have similar or lower rates of benefit recipiency than natives in Germany, the UK, Greece, Spain and Portugal, while these rates are higher in Denmark, the Netherlands, Belgium, France, Austria, and Finland. In this latter group of countries, the authors find a positive and significant impact of the indicator for being a non-EU citizen on the probability of taking up unemployment benefits, while this is not the case for the former group (Germany, the UK, Greece and Spain).[12] Research related to immigration and welfare in Europe also does not confirm the findings of Borjas and Trejo (1991) about immigrants assimilating into welfare in the US.[13]

Using the UK-LFS, Drinkwater and Robinson (2013) group immigrants by country of origin and compare them to UK natives in terms of probability of claiming benefits. They find that five out of the seven groups of foreign-born examined are significantly less likely to claim benefits with respect to natives. In particular, they show that immigrants from the A8 countries are 5 p.p less likely to claim benefits than the UK-born by making less use of unemployment-related,

[10]However, this last prediction is not supported by any statistical significance in the empirical results using US data. See also Brucker et al. (2002), who develop a simple theoretical model referred to the European case where less skilled immigrants move predominantly to countries with more generous welfare systems. An analogous setting is also evaluated empirically by De Giorgi and Pellizzari (2009), who support the hypothesis of generous welfare systems being more attractive, especially for men.

[11]Notable analyses based on US data are Jensen (1988), Borjas and Trejo (1991), Borjas and Hilton (1996), Borjas (2002) and Kaestner and Kaushal (2005).

[12]Similar patterns are found by Boeri (2010). Barrett and Maître (2013) and Giulietti et al. (2013) find evidence of similar or lower recipiency rates for immigrants (especially those from non-EU countries) across Europe. Barrett and McCarthy (2007, 2008) also find that immigrants in Ireland are more highly educated and less likely to use welfare services, even though they have lower earnings compared to the native population. The results about Denmark are in line with Blume and Verner (2007), while those about Germany are confirmed by Castronova et al. (2001) and Riphahn (2004), who claim that immigrants are more likely to be eligible than the natives because of their income and household structure. Nevertheless, conditional on eligibility, there is no statistically significant difference in take-up between the two groups, i.e. there is no 'immigrant effect'. More recently, Riphahn et al. (2013) evaluate the benefit recipiency of Turkish immigrants and find that conditional rates of participation exceed those of German natives only for the second generation immigrants.

[13]Hansen and Lofstrom (2003) show that immigrants in Sweden tend to assimilate out of welfare, even though the rate of convergence is not sufficiently fast to wipe out the gap between immigrants and natives even in the long run. Likewise, Riphahn (2004) and Blume and Verner (2007) do not find evidence of assimilation into welfare of immigrants in Germany and Denmark, respectively.

child-related, sickness benefits and income support.[14] Very similar conclusions are reached by Dustmann et al. (2010), who specifically focus on the fiscal impact of immigration from the A8 countries in the UK. They estimate that these recently arrived immigrants are, in fact, 59 per cent less likely to receive state benefits or tax credits and 57 per cent less likely to live in social housing compared to natives. While this may be due to the fact that A8 immigrants are younger, better educated and less likely to be parents than their UK born counterparts, even after controlling for these factors they are found to receive less welfare assistance. Such findings are corroborated by those of Dustmann and Frattini (2014), who estimate the overall expenditure on and the revenues produced by the population of immigrants in the UK and compare them to the net fiscal contribution of the natives. They find that, over the period 1995-2011, immigrants residing in the UK are less likely than natives to live in social housing or to receive benefits (both state transfers or tax credits). This is especially true for recently arrived (i.e. since 2000) immigrants from the EU. The authors also estimate a positive net fiscal contribution of immigrants arriving from the EEA (4 billions GBP), while natives and extra-European immigrants contribute less than what they receive in benefits and transfers.[15]

Other forms of utilisation of public services are also investigated in the literature. Battiston et al. (2014) focus on the probability of being in social housing for immigrants in the UK for the years 2007-2013. Here, the authors find that while recent immigrants are more likely to be in private housing, after being in the UK for at least five years they become equally likely to be in social housing than natives. The demand for health care services in the UK is analysed, among others, by Steventon and Bardsley (2011).[16] In line with the general consensus of the literature on the existence of a 'healthy immigrant effect', i.e. the fact that immigrants are generally positively selected in their actual and self-reported health compared to the native population, the authors observe that first registrants have lower admission ratios than the general population and that this difference persists over time. Wadsworth (2013) compares health service use of immigrants as opposed to the native population in the UK and Germany. He focuses on self-reported general health status and on both the extensive and the intensive use of health services, measured as the incidence and the number of visits to GPs and hospitals, respectively. The results of his analysis suggest that while foreign-born individuals are healthier on arrival in the host country, the gap in health status and utilisation of services with the native population narrows over time. Finally, Giuntella et al. (2015) estimate the causal effect of immigration on efficiency indicators of health services. They uncover a negative and significant effect of the presence of immigrants in the area on waiting times for outpatients but no impact on

[14] Barrett and McCarthy (2008), using the BHPS, find that immigrants in the UK are overall 4% more likely to receive social welfare in the UK. However, the results are driven by the immigrants from English-speaking countries (i.e. essentially Ireland), who are 7% more likely to claim benefits than natives, while immigrants from non-English-speaking countries are 5% less likely to do so.

[15] These figures amount to negative 591 and 118 billion GBP, respectively. In addition to this, the authors point out that immigrants generally arrive to the UK with a consistent endowment of human capital that has been acquired in their native country. This implies implicit savings on education for the British public finances that they estimate to be around 50 billion GBP.

[16] They use administrative data on the number of first registrants to a general practitioner (GP) aged 15 or over as a proxy for the number of international immigrants, under the assumption that UK-born residents register with the GP before the age of 15.

A&E (accident and emergency department) or on elective care. They argue that this is to be attributed to the combination of both the 'healthy immigrant effect' above mentioned and a 'displacement effect' on natives, who tend to migrate to areas where immigration is scarce and to access health services there.

3 Setting and Empirical Method

In this section I describe the setting in which the identification of the analysis is framed and how the sample is selected. I also illustrate the empirical model used and how the outcome variables are defined.

3.1 Identification Strategy

I consider the case of the European 2004 Accession (A8) Countries, that entered the European Union on May 2004: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.[17] Citizens from these countries have been subject to some additional restriction in terms of access to benefits compared to other EEA nationals: up until 30th April 2011 they had the Right to Reside only if in work and if registered to the UK Border Agency's Worker Registration Scheme (WRS).[18] During this period of time they only had access to in-work benefits and to some other work-related benefits that are payable regardless of immigration status such as Statutory Maternity Pay and Statutory Sick Pay. Only after being registered to the WRS and in continuous employment for 12 months, could they claim out-of-work benefits and tax credits on the same grounds as other EEA nationals.[19] These include: Job Seeker's Allowance, Pension Credit, Housing Benefit and housing assistance from Local Authorities, Council Tax Benefit, Child Benefit, Child Tax Benefit (Kennedy, 2011, 2015; Wilson, 2015). Starting on 1st May 2011, nationals of A8 countries have been wholly equalised to other EEA citizens.[20]

I exploit the change in policy at the 30th April 2011 for A8 nationals to evaluate the effect of having limitations to welfare support access on the probability for immigrants to take up benefits and on the consequences in terms of their labour supply. In the baseline specification the comparison is made against EU15 nationals, who did not go through any change in legislation over the period examined.[21] A sample of UK-born individuals and of immigrants from

[17] Malta and Cyprus also entered the EU on the same date but they are excluded from this analysis because they belong to the Commonwealth of Nations and, as a consequence, have been subject to different institutional circumstances.

[18] Some evidence, however, suggests that "a fairly high percentage" of A8 migrant workers have not registered to the WRS (Drinkwater and Robinson, 2013).

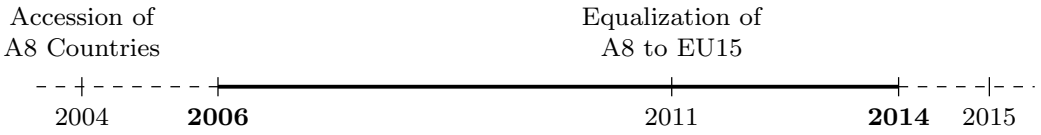
[19] They could be out of work for no more than 30 days in the 12-month period.

[20] See Appendix A.1 for a brief overview of the UK welfare system and of the types of benefits that apply to immigrants.

[21] EU15 countries include Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Sweden and Spain. The UK also typically belong to the EU15 group but they are excluded here for the purpose of the analysis. I also include Switzerland in this group because, even if technically they do not belong to the EEA, they are subject to the same rules as other EU15 countries in view

a comparable group of countries are employed in the descriptive statistics (subsection 3.5) and in the robustness checks (subsection 4.2), respectively. To my knowledge, this is the very first attempt to empirically verify the impact of the transitional restrictions applied to nationals of the A8 countries on their use of welfare services and their labour supply.

Figure 1: Change in Welfare Accessibility for A8 Nationals



I use data from the Annual Population Survey (APS), an annual survey based on the UK Labour Force Survey (UK-LFS) plus a boost sample which allows an enhanced representativity at the local level.[22] The data are available for the years 2004-2014 but I only consider individuals who were interviewed in the period 2006q3-2014q1 (see Figure 1). On the one hand, the year 2005 has an extremely unbalanced sample size compared to other years; this may be due to the fact that I am selecting only immigrants who arrived since 2005 and that respondents can only appear in the survey if they have lived in the country for at least 6 months. In addition to this, I account for a slight change in the law that came with the application of a European Directive since April 2006 (see Appendix A.1 for details). The year 2005 and the first half of 2006 are, therefore, dropped. On the other hand, most of the year 2014 is excluded because of major changes to the welfare system that came into place with the introduction of the Universal Credit, which is intended to replace the current system of benefits and tax credits.

I consider all foreign-born individuals aged 18 to 65 who come from a EU15 or an A8 country and that have arrived in the UK any time after 2004. Throughout the analysis, an individual is defined as coming from a certain country based on their place of birth.[23] In this particular case, the specification of the origin on the grounds of the country of birth seems preferable to the one based on the nationality because the place of birth is predetermined, while one could potentially change nationality for reasons that may be correlated to their eligibility to benefits and therefore generate endogeneity (Borjas, 2002). On the other hand, as Boeri (2010) points out, when the country of birth is used as a proxy for immigration status, estimates may be biased because of misclassification as immigrants of 'true nationals' born abroad for whatever reason and this issue may be especially important for a country with a large number of former

of separate agreements (Kennedy, 2011).

[22]The sampling of the APS ensures the inclusion of at least 510 economically active persons for each Unitary Authority (UA)/Local Authority District (LAD) and at least 450 in each Greater London Borough. Some respondents (17.5% of the sample here considered) appear multiple times from one year to the other but the data are treated as a repeated cross-section.

[23]Nationality is only used in case the stated country of birth yields ambiguity: e.g. individuals who state that they were born in Former Czechoslovakia are assigned to either Czech Republic or Slovakia on the basis of their stated nationality. Those declaring a nationality other than Czech or Slovakian are dropped.

Table 1: Sample by Country of Birth

EU15 Countries						**A8 Countries**		
Austria	67	(24)	Ireland	651	(219)	Czech Republic	507	(124)
Belgium	125	(47)	Italy	655	(248)	Estonia	112	(27)
Denmark	88	(38)	Luxembourg	8	(3)	Hungary	720	(209)
Finland	80	(29)	Netherlands	276	(90)	Latvia	862	(225)
France	843	(346)	Portugal	565	(141)	Lithuania	1,493	(287)
Germany	689	(234)	Spain	527	(239)	Poland	11,388	(2120)
Greece	273	(85)	Sweden	171	(78)	Slovakia	1,013	(278)
			Switzerland	75	(23)	Slovenia	17	(4)
			Total	**5,093**	**(1,844)**	**Total**	**16,112**	**(3,274)**

Note: Figures refer to the whole sample of immigrants that arrived in the UK after the year 2004. Numbers in parentheses pertain to the sub-sample of immigrants who have spent less than two years in the country.

colonies such as the UK. However, given that I include only immigrants from the European continent in the sample and that none of these countries have been former British colonies, I opt for the definition based on the country of birth.

I exclude from the sample any immigrant that has arrived before the 2004 Accession to avoid any potential selection problems. Prior to 2004, in fact, not only immigrants from A8 countries could not enjoy the free movement rights as other EEA nationals, but they also have been found to be significantly different from later waves of immigrants (Longhi and Rokicka, 2012). Moreover, the UK and all EU15 countries already belonged to the EU in 2004 and immigrants from these countries were not subject to any change at the time of the A8 Accession. Finally, I keep all observations for which information on benefit claim and on the main individual characteristics are not missing.

The final sample resulting from the selection process described above is tabulated in Table 1, divided by country of birth. Figure A.2.1 in the Appendix shows the proportion of immigrants in the sample by country of birth and year (panel above) and by group (A8 or EU15) and year (panel below). It is easily observed that, on average, EU15 nationals constitute around 25% of the whole sample, and this share is quite steady over time. Immigrants from Poland, followed by Lithuanian nationals, are disproportionally more abundant than individuals coming from any other European country and they alone make up the large majority of the A8-born in the sample. This is consistent with previous analyses (Elsner, 2013) and official figures: according to the Office for National Statistics (2013), the group of immigrants residing in England and Wales that increased the most during the period 2001-2011 were the Polish-born, with almost a ten-fold increase from 58,000 to 579,000. This considerable increment is to be attributed mainly to Poland having joined the European Union in May 2004. In the years 2004-2009, also a large number of immigrants from other A8 countries arrived in the UK: in 2011 there were 29,000 Hungarian-born residents, 36,000 coming from Latvia, 63,000 from Lithuania and 43,000 that were born in Slovakia (Office for National Statistics, 2013).

3.2 Empirical Model

In the main specifications, I estimate a model that is equivalent to a regression difference-in-difference such that:

$$Y_{ict} = \alpha + \beta_1 A8_{ic} + \beta_2 PreApr2011_{it} + \beta_3 A8_{ic} * PreApr2011_{it} + X'_{ict}\theta + \epsilon_{ict}, \quad (1)$$

where $A8_{ic}$ is a dummy for being born in a A8 country and $PreApr2011_{it}$ is a dummy for being interviewed before 30th April 2011, i.e. the date in which the transitional restrictions for A8 nationals were lifted. Hence, β_3 is the treatment effect of interest, as it should capture the 'pure' effect of the restrictions to welfare access on the outcome. Later, I will also discuss the implication of the policy on the average difference between the two groups (EU15- and A8-born) under the stricter regime, namely the sum of β_1 and β_3, provided this is statistically different from zero. This would display not if the restrictions have any effect on the treated (A8 immigrants) but, rather, whether the policy effectively lowers or increases the average outcome for the treated relative to the control group (EU15 immigrants).

I also include X_{ict}, which is a set of characteristics of individual i from country c at time t. This contains gender, age, age squared, a dummy for being married, the number of dependent children, the number of years since the arrival to the UK, a dummy for having secondary education or lower, whether the individual lives in a household in which residents are born in two or more different countries (i.e. mixed-origin HH), the lagged Local Area-specific unemployment rate (linear and squared) and the lag of the national GDP growth.[24] Finally, ϵ_{ict} is the error term, where standard errors are clustered at the country of origin level.

Various outcomes (Y_{ict}) are considered. I first look at the impact of the limitations to welfare support on the probability of claiming benefits. Then, I evaluate the effect on the labour supply, namely economic status, hours worked, probability of working full-time or having a second job and earnings. All outcome variables are defined as in the following subsection.

Additionally, as commonly used in this type of approaches (e.g. Autor, 2003; Bütikofer et al., 2015), I apply the following specification for the event-study analysis, which is aimed at verifying the validity of the common trend assumption (see Figures 5, A.2.2 and 6):

$$Y_{ict} = \alpha + \lambda_t + \delta_c + \sum_{\tau=2007}^{2014} \beta_\tau (A8_{ic} * Year_{i\tau}) + X'_{ict}\theta + \epsilon_{ict}. \quad (2)$$

Here, λ_t and δ_c are year and country of origin fixed effects, respectively. The $A8_{ic}$ indicator and X_{ict} are defined as above.[25] The omitted year is 2011, which coincides with the period

[24] Subscripts referred to Local Areas are omitted in favour of an easier notation.

[25] In this specification, X_{ict} does not encompass the lag of the GDP growth as I am already including year dummies. In the case of the labour supply in Figure 6 only, I specifically control for the onset of the financial crisis and include a variable for the lagged GDP growth, replacing λ_t with the dummy $PreApr2011_{it}$.

immediately preceding the change in regime for the A8 immigrants.[26] This specification allows to test for the presence of parallel trends in the pre-treatment period, namely, if the coefficients associated to the *leads* (β_τ, with τ going from 2007 to 2010) are not statistically different from zero. Moreover, this approach is convenient to understand whether the treatment effect fades, increases or stays constant over time, depending on the estimated coefficients of the *lags* (β_τ, with τ going from 2012 to 2014).

3.3 Definition of Benefit Claim and Labour Supply Variables

The APS/UK-LFS questionnaires contain a dedicated section to the respondents' benefit entitlement.[27] Questions related to benefit claims are asked to all survey respondents who are in paid or unpaid work or are aged 16-69. They are referred to as benefit 'claims' but they can, in fact, be intended as the actual take-up of benefits, as the exact question that is posed to the respondents reads: 'state benefits/tax credits that [they] may be receiving or claiming'.[28] All variables concerning the claim of benefits are dummy variables. This is because the only information available in the APS is whether or not an individual claims a particular benefit, while no questions are asked on the amounts claimed or their duration, which unfortunately greatly limits the potentiality of this investigation.

For the purpose of this analysis and in order to have a systematic and clear definition, I group benefits and tax credits on the grounds of their type and of the claimants' employment status.[29] More specifically, I divide them into three broad categories: in-work benefits, out-of-work benefits and benefits that do not depend on the employment status of the claimant. These are synthesised in Table 2 (below panel). In-work benefits include Income Support and Working Tax Credits, which are mainly aimed at subsidising those who are in paid work but earn low income or work for a few hours per week. Unemployment-related benefits include National Insurance Credits and Job Seeker's Allowance and are destined to financially support people who are not working. The following benefits belong to the third, residual category: family and child benefits encompass all family- and child-related benefits, including Child Benefit and Child Tax Credits; housing benefits include also Council Tax Reductions (Great Britain) and Rent Rebate (Northern Ireland). Finally, sickness benefits combine all kinds of financial support for ill or disabled individuals.

I also construct three aggregate indicators where I group benefits according to their type (Table 2, above panel). The first indicator, 'Any Benefit', takes value 1 if the respondent claims any type of benefit, regardless of her employment status, and value 0 otherwise. The

[26] In order to align time spans to April 2011, year dummies are arranged such that each year refers to the last two quarters of the previous year and the first two quarters of the actual year. Hence, for instance, the dummy for 2007 takes value 1 in the last two quarters of 2006 and the first two quarters of 2007. Quarters q2 and q3 of 2011 are excluded.

[27] Comparison between the data collected by the LFS and administrative data collected by other Government departments shows that the LFS consistently undercounts benefit claimants (see APS/UK-LFS documentation). However, as there is no reason to believe that these figures are systematically undercounted for a particular group (i.e. nationality) of respondents, one should not be concerned over selection issues.

[28] For more details, see APS/UK-LFS documentation: LFS User Guide, Volume 2.

[29] In the remainder of the paper, I will broadly refer to both benefits and tax credits simply as 'benefits'.

Table 2: Definition of Benefit Variables

Name of Benefit Indicator	Description
Any Benefit	Any in-work or out-of-work benefit, including Sickness benefits
Any OW Benefit	Any out-of-work benefit (Unemployment, Family/Child or Housing)
Any HH-level Benefit	Any household-level benefit (Family/Child or Housing)
In-Work Benefits	Income Support, including Working Tax Credits
Unemployment Benefits	Unemployment-related benefits, National Insurance Credits, Job Seeker's Allowance
Family/Child Benefits	Family-related and child benefits, including Child Tax Credits
Housing Benefits	Housing benefits, including Council tax reductions and rent rebate
Sickness Benefits	Sickness or disability benefits, including Personal Independence Payment and Employment and Support Allowance

second dummy, 'Any OW Benefit', is an indicator for whether the individual claims any of the following: out-of-work, family/child or housing benefit. This should comprise all benefits to which eligibility for A8 nationals was restricted in the period up until 30th April 2011, i.e. the treatment period. Hence, this is used as main outcome of interest when the effect of the transitional limitations is assessed in terms of benefit take-up. The third and last variable, 'Any HH-level Benefit' is equal to 1 if any of the benefits at the household level are claimed, namely family/child or housing benefits, and is equal to 0 otherwise.

The variables describing the individuals' labour supply identify their economic status, the hours worked, their earnings and their likelihood of working full-time or of having a second job. Economic status is divided into three categories, as defined under the ILO classification: in employment (which includes both employees and self-employed workers), unemployment and inactivity. Hours worked are determined on the basis of usual hours worked, only for people in employment. Full-time employment and having a second job are identified by two dummy variables, again only for people in employment. Finally, gross hourly pay, which is only available for workers that are not self-employed, constitutes the information about wage.

3.4 Harmonisation of Educational Attainment Variables

The information concerning the educational level of immigrants in the data is rather problematic. Up until January 2011, in fact, the LFS provides for all non-UK qualifications to be recoded as 'other' and this makes it troublesome to allocate the correct qualification level to individuals who have completed their educational career abroad. Hence, following Campbell (2013), I adopt an alternative strategy to determine the qualification attained by the individuals in the sample. This is achieved by exploiting the variable 'age when completed full-time education' and comparing it to the corresponding level of educational attainment in the country of origin. In order to maintain a good degree of accuracy and to ensure some harmonisation among the different educational systems across European countries, I refer to the International Standard Classification of Education (ISCED). While this practice suffers from potential mis-

classification, due to recall bias of respondents and especially in the case of individuals who have repeated years in school, it allows to fully exploit the information about the age when education was terminated and frame it into the relevant educational system.

Other authors have previously used information about the age of education completion (Dustmann et al., 2010; Drinkwater and Robinson, 2013). They generally classify educational attainment as high (left full-time education at 21 or older), intermediate (left between 17 and 20) and low (left at 16 or younger). However, none of these studies takes into account that different countries may have incomparable educational systems and that the age at which full-time education is left may correspond to different levels achieved. For instance, leaving school at age 19 (i.e. 13 years of education) in Spain may translate in a vocational tertiary level (ISCED 5B), while at the same age a German student may reach a post-secondary level (ISCED 3).[30] Thus, such design may lead to misclassification of the individuals' educational attainment and this is likely to be persistent within each country of origin group. Hence, the correlation of the bias to the group individuals belong to may generate endogeneity concerns. By choosing to follow the strategy adopted by Campbell (2013), I believe I am able to minimise the likelihood of such issue taking place. In order to do so, I refer to the 1980 primary school entry ages from the World Bank's World Development Indicators and the tables in the 2009 PISA Technical Report (OECD, 2012) to compute the average age at which each ISCED level is attained in each European country.[31] I follow a conservative approach and assign the lowest ISCED achievement in the cases where two or more levels can be attained at the same age.

3.5 Descriptive Statistics

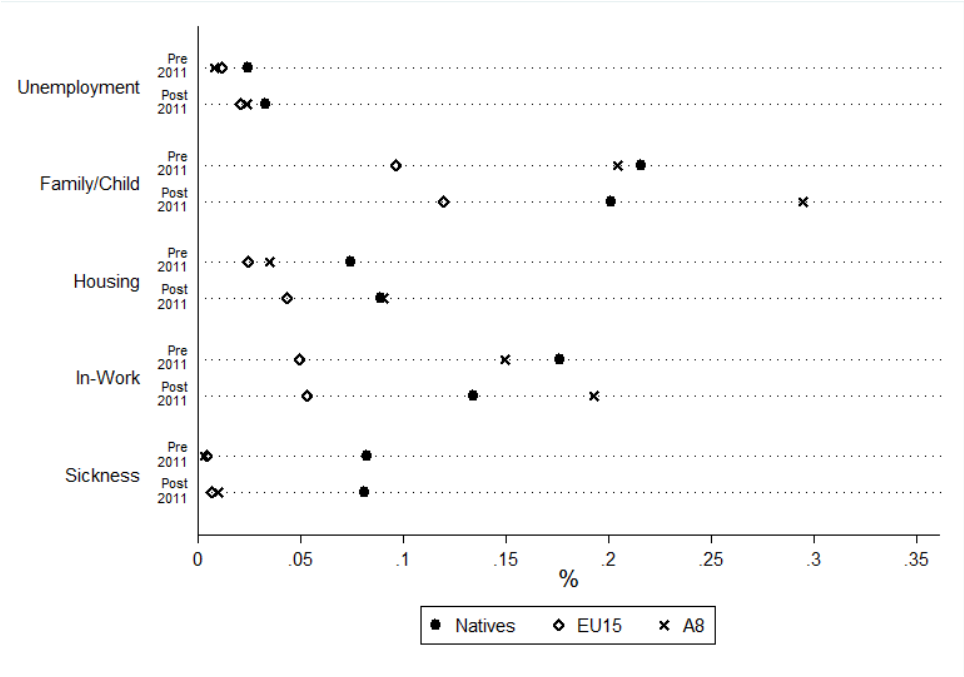
Tables A.2.1 and A.2.2 report the (unconditional) means of variables used in the analysis for three groups of individuals: UK-born, EU15 immigrants and A8 immigrants. Here, figures pertaining to the UK-born are shown with the primary aim of having a benchmark for comparison with the resident native population. Individuals are restricted to be aged 18-65, to be interviewed in the period 2006q3-2014q1 and not to have missing information in their key variables. The two groups EU15 and A8, only encompass individuals who have arrived to the UK in or after 2005.

Foreign-born individuals are approximately 30 years old at the time of the interview and have been living in the UK for 2 to 4 years, with A8 immigrants having stayed in the country for longer than the EU15-born (Table A.2.1). Moreover, A8 nationals are more likely to be married and have more children. With respect to the UK-born individuals in the sample, immigrants are on average much younger (natives are 43 years old on average), less likely to be married and have less children (except the case of the A8 nationals interviewed after April 2011). In terms of education, as shown in previous works (Clark and Drinkwater, 2008; Campbell, 2013), natives are strikingly more likely to have secondary level qualifications, while non-British individuals

[30] In both countries the primary school entry age is 6 years old.

[31] The World Bank tables on the official entrance age to primary education are available at: http://data.worldbank.org/indicator/SE.PRM.AGES (last accessed 04/01/2017).

Figure 2: Percentage of Benefit Claim by Group and Period



are generally more highly educated: 43% of A8 immigrants have achieved a lower tertiary qualification, while more than two thirds of EU15 individuals have a first degree or higher.

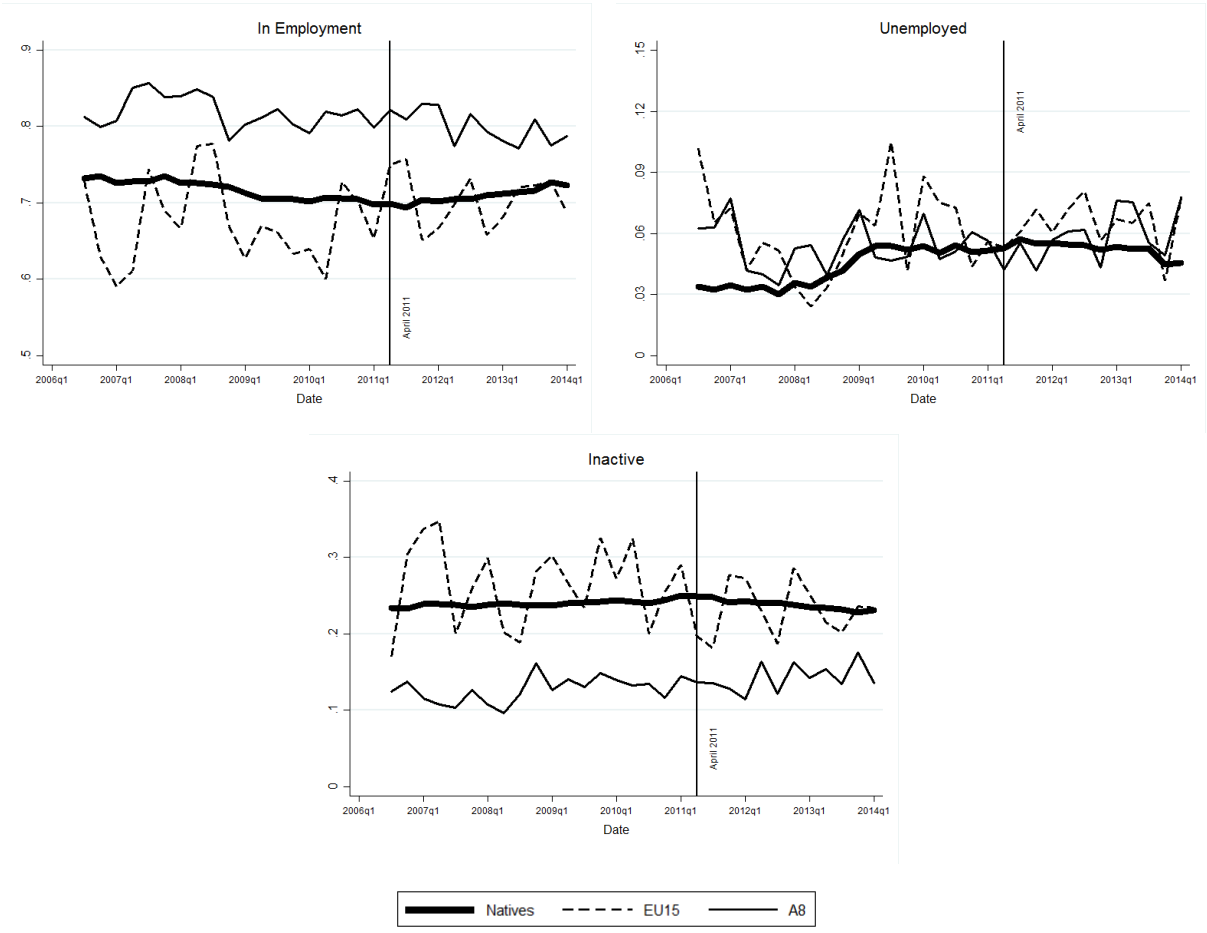
Finally, more than one every two EU15-born lives in a household with at least an individual coming from a different country of origin than hers, while this occurs for roughly a third of the A8-born immigrants and only in 5% of the cases for the natives. This variable is included in the regressions because it should pick up the effect of living in a multicultural environment and coming across more information. This may be especially important with respect to dealing with bureaucratic procedures and to the chances of finding a job, particularly for non-English speakers.

As described above, the two groups of immigrants differ in terms of few other observable characteristics, including their achieved educational level. In turn, they are quite dissimilar from the sample of natives. These differences may partly originate from the sample selection criteria employed, in particular the fact that only recent immigrants are included in the final sample. However, such selection should not constitute a problem in terms of the study that is carried out here for two reasons. First, the core analysis is done by comparing A8 to EU15 nationals, who are all immigrants and are all selected with the same criteria. Second, all observable characteristics, including gender, family composition and education, are included among the controls and are, therefore, taken into consideration. The distribution of some characteristics also changes to a slight extent over time: among the A8 immigrants interviewed after April 2011 there is a larger share of females and of married people and individuals tend to have a higher number of children. On the other hand, differences in educational achievement between the two periods are negligible. This suggests the absence of a trend in the skill composition of

these individuals that could hypothetically affect their likelihood of claiming benefits or their participation to the labour market.

Information on the indicators concerning the claim of benefits are summarised in Table A.2.2 (upper panel) and Figure 2. Here, two things can be easily noticed. First, on average natives claim significantly more benefits than the foreign-born, for most types of benefits. The pattern is reversed only when natives are compared to A8 immigrants in the period after April 2011, i.e. when A8 nationals are finally able to claim like other EEA nationals: there, for some types of benefits, especially family and child benefits, A8 immigrants appear to claim more than the UK-born. It must be noted, however, that this is coherent with the patterns found in the number of children per individual (see Table A.2.1): before 2011 natives have the highest claiming rate but also the highest number of children among the three groups, while after 2011 A8 nationals reach higher fertility levels and their share of family and child benefits claimants grows accordingly. Second, contrary to popular belief, an extremely low percentage of individuals, and even more so of immigrants, in the sample claim unemployment benefits (around 3% and 1.5%, respectively). The same is true also in the case of sickness benefits, where less than 0.5% of immigrants claims this type of benefit (compared to around 8% of natives). When comparing A8 immigrants before

Figure 3: Employment by Group and Year

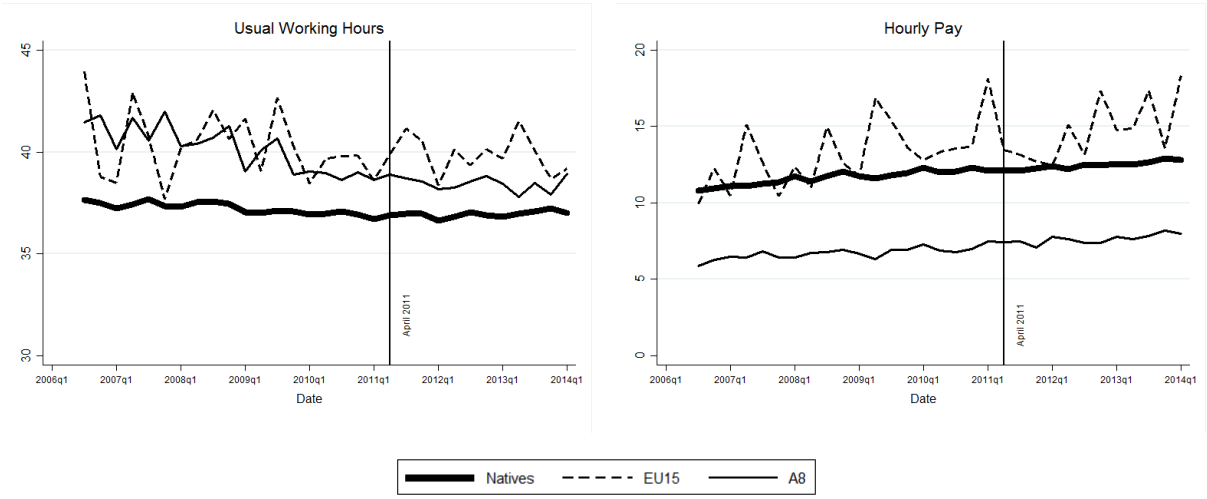


and after the relaxation of the restrictions to welfare access, the differences in the unconditional means are always found to be positive and statistically significant: for instance, after April 2011 A8 nationals claim almost 12% more of any type of benefit. When benefits are broken up by type, the highest increase in the claiming rate is in family and child (9%) and housing (5%) benefits.

As far as the labour supply is concerned, averages by period are presented in Table A.2.2 (lower panel) and Figures 3 and 4. A8 immigrants constitute the group that has the highest employment rate (over 80%) and the lowest inactivity rate (13%), while EU15 nationals tend to behave similarly to the native population, where around 70% are in work (see Figure 3).[32] The number of the unemployed, on average, is constant across groups and is set in between 5% and 6%.

A8 nationals also work longer hours: their average usual hours worked are up to 6 hours more than natives and their EU15 counterparts in the first years examined (Table A.2.2). Additionally, A8-born are more likely to be in a full-time job. Nevertheless, they receive the lowest wage, namely around a third less than the UK- and the EU15-born (see Figure 4).

Figure 4: Labour Supply by Group and Year



4 The Effect on Benefit Claims

In this section I present the main results concerning the effect of the restrictions to welfare access on the claim of benefits. I first evaluate the effect on the aggregated indices previously discussed. Next, I break down the analysis on each type of benefit separately. Then, I discuss a number of robustness checks and placebo tests in support of the main evidence.

[32] Figures are consistent with Campbell (2013), who uses ONS data to compute that the employment rates for A8 and EU15 immigrants and natives are, respectively, 81.1%, 72.4% and 72.8%.

4.1 Main Results

The first step consists of estimating the probability of claiming benefits for the individuals who are potentially affected by the temporary limitations in their eligibility to welfare support. In order to do so, I restrict the sample to all individuals in the sample who have been in the UK for less than two years (see Table 1). The reason behind this lies in the fact that, under the stricter regime (May 2004 - April 2011), A8 immigrants had to be continuously in work for at least 12 months before being able to access out-of-work, family/child and housing benefits or tax credits. Hence, A8-born workers that had just arrived to the UK would have been the ones actually subject to the limitations. As the year of arrival to the UK is the only piece of information available in the data, I cannot compute precisely the length of time that each individual has spent in the UK. Given this, I select all individuals for whom the difference between year of interview and year of arrival is strictly less than two. Hence, the time elapsed since the time of arrival is, *de facto*, restricted to be from a minimum of 6 months to a maximum of 23 months.[33]

Table 3 reports the regression results from the estimation of Equation 1, where the aggregate indices of benefit claim grouped by type, as described in subsection 3.3, are used as outcomes. Specifically, column I concerns the claim of any benefit regardless of the type or the employment status of the individual. This includes benefits that were available to A8 immigrants before and after April 2011 (i.e. in-work and sickness benefits). Column II refers to the claim of any benefit among the following: unemployment, family/child or housing. This indicator is the one that fully encompasses the benefits that were temporarily inaccessible to A8 immigrants in the treatment period (2004-2011) and should be regarded as the main outcome of interest. Finally, the outcome in column III is defined as whether the individual claims any benefit or tax credit at the household level, namely family/child and/or housing benefits.

The coefficients associated to the $A8$ dummy are all positive and significant, meaning that in the absence of any restriction, A8 immigrants are on average more likely to claim benefits by around 6 percentage points with respect to their EU15 counterparts. Conversely, the expected average change in benefit claim from before to after April 2011 is not only statistically null but also very close to zero in terms of magnitude.

The estimated effect of being under the restricted regime ($A8 * PreApr2011$) is negative and significantly different from zero in all columns. This corresponds to a decrease in the probability of claiming benefits by around 6 percentage points. Stated differently, when restrictions are relaxed (namely, after April 2011) A8 immigrants are found to take up more benefits by 6 percentage points. Given that the average share of claimants among the non-treated goes from 5.7 to 4.4, this means that A8 immigrants have around a 120% higher probability of claiming benefits when restriction to welfare access are removed (column II). The effect decreases slightly (to 110%) when all types of benefits are included in the definition of the dependent variable, i.e. column I, due to the counterbalancing effect of in-work benefits (see Table 4 and related discussion below).

[33]This is because 6 months is the minimum time that an individual needs to be residing in the UK before being interviewed in the LFS, while 23 months would be the case where the immigrant who arrived on January

However, when the restrictive policy is in operation, the average difference between the two groups of immigrants is not statistically different from zero.[34] These results suggest that restricting access to benefits may work in general, because it appears to decrease the overall

Table 3: Claim of Benefits

	(I) OLS	(II) OLS	(III) OLS
Dep. Variable	Any Benefit	Any Out-of-Work Benefit	Any HH-level Benefit
A8	0.083***	0.063**	0.064**
	(0.023)	(0.023)	(0.023)
PreApr2011	0.004	0.005	0.003
	(0.010)	(0.010)	(0.015)
A8*PreApr2011	-0.063**	-0.063**	-0.055**
	(0.023)	(0.023)	(0.024)
Female	0.053***	0.058***	0.057***
	(0.012)	(0.011)	(0.012)
Age	0.014***	0.012***	0.011***
	(0.002)	(0.001)	(0.002)
Age Squared	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)
Married	0.047**	0.053***	0.051**
	(0.017)	(0.017)	(0.018)
1 Child	0.214***	0.213***	0.211***
	(0.025)	(0.023)	(0.023)
2 Children	0.206***	0.196***	0.201***
	(0.033)	(0.029)	(0.027)
3+ Children	0.203***	0.201***	0.190***
	(0.053)	(0.051)	(0.051)
1 Yr in UK	0.059***	0.047***	0.051***
	(0.009)	(0.008)	(0.008)
Secondary Edu (or Lower)	0.037***	0.037***	0.031***
	(0.012)	(0.010)	(0.009)
Mixed-Origin HH	-0.018**	-0.020**	-0.018*
	(0.008)	(0.009)	(0.010)
Lag of URate	1.560***	1.167***	1.014***
	(0.205)	(0.251)	(0.249)
Lag of URate Squared	-7.879***	-5.997***	-5.618***
	(1.600)	(1.386)	(1.663)
Lag of GDP Growth	0.001	0.004	0.002
	(0.005)	(0.003)	(0.004)
Constant	-0.218***	-0.183***	-0.177***
	(0.028)	(0.016)	(0.021)
Observations	4,918	4,918	4,918
R-squared	0.203	0.210	0.214
Other Controls	Yes	Yes	Yes
Sample	<2 yrs	<2 yrs	<2 yrs
P-value ($\beta_1 + \beta_3 = 0$)	0.253	0.993	0.504

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Reference categories: No Children, Less than a Year in UK.

of the year $t-1$ is interviewed in December of the year t.

[34]This is calculated as the sum of β_1 and β_3 coefficients (see Equation 1) for each column of Table 3. I do not reject the null hypothesis of $\beta_1 + \beta_3$ being equal to zero in all columns (see Table 3).

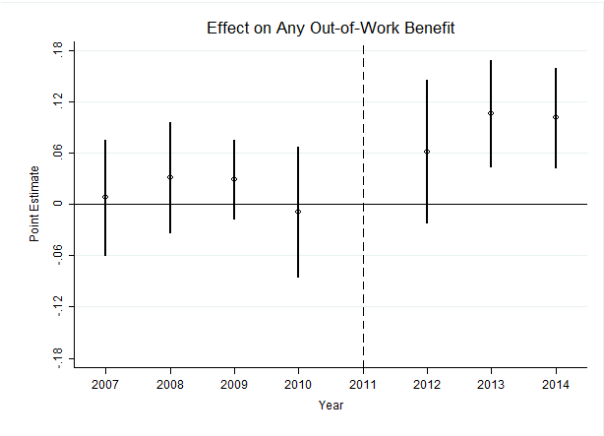
probability of take-up. Nevertheless, when the difference between the affected group (A8 nationals) and their EU15 counterparts is observed, this implies that such restrictions do not make the treated group less likely to claim compared to the unaffected one. This, however, is not surprising given the fact that EU15-born are generally found to be the most virtuous group of immigrants (Clark and Drinkwater, 2008; Campbell, 2013).

Such considerations are complemented by Figure 5. Here, the graph illustrates the point estimate of the coefficient of the interaction between the indicator for belonging to the treated group (A8) and a series of year dummies on the claim of any out-of-work benefit.[35] It is easily noted that the two groups tend to behave similarly in the years in which the restrictions are in place and that the *leads* are not statistically different from the 2011 base category. Conversely, when the restrictions are relaxed the probability of benefit take-up for A8 immigrants increases significantly, namely by 6.1 in 2012 and by 10.6 and 10.1 p.p. in the years 2013 and 2014, respectively. The gradual increase that is observed in 2012 can be justified by the fact that once eligibility is extended to all A8 immigrants, it might take a while before they gather the necessary information to claim and for their applications to be processed.

Brewer et al. (2013) suggest that the use of feasible GLS can ensure substantial gains in power in the context of difference-in-difference and therefore recommend the use of this method of estimation combined with cluster-robust inference. Hence, I also estimate the same model as in Equation 1 using feasible GLS and find identical results (Table A.2.3, columns I-III).

When directing the attention to the covariates, I find that, as expected, females, married individuals, those who have dependent children and the less educated are more likely to claim benefits, as well as those who have arrived in the UK in the previous year (compared to those arrived in the same year as the interview). I also observe that the propensity to claim decreases

Figure 5: Estimated Effect of the Restrictions by Year: Any Out-of-Work Benefit



Note: The graph depicts the estimated effect of the restrictions to welfare access by year on the probability to claim of any out-of-work benefit as from Equation 2. 95% confidence intervals are shown and standard errors are clustered at the country of origin level. I do not reject the null hypothesis of all point estimates in the 'pre' period being equal (p-value 0.533).

[35] Graphs pertaining to the other benefit indicators are displayed in Figure A.2.2 in the Appendix.

Table 4: Claim of Benefits by Type

Dep. Variable	(I) OLS Unempl. Bnfts	(II) OLS Family Bnfts	(III) OLS Housing Bnfts	(IV) OLS In-Work Empl. Bnfts	(V) OLS Sickness Bnfts
A8	0.008	0.052**	0.024**	0.047***	-0.000
	(0.010)	(0.021)	(0.011)	(0.014)	(0.003)
PreApr2011	0.000	0.002	-0.007*	-0.020*	0.001
	(0.007)	(0.014)	(0.004)	(0.010)	(0.001)
A8*PreApr2011	-0.020	-0.038	-0.025**	-0.003	-0.003
	(0.012)	(0.023)	(0.012)	(0.016)	(0.003)
Observations	4,918	4,918	4,918	4,918	4,918
R-squared	0.025	0.231	0.030	0.109	0.012
Other Controls	Yes	Yes	Yes	Yes	Yes
Sample	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs
P-value ($\beta_1 + \beta_3 = 0$)	0.003	0.323	0.780	0.001	0.253

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.

if the individual lives in a household where members are of different origin, which suggests that being exposed to potentially diverse environments makes individuals less likely to rely on welfare. Moreover, benefit claims respond positively (and non-linearly) to the lag of the unemployment rate in the Local Area where these individuals live, implying that claims are affected by the economic conditions of the area following a pattern that increases less than proportionally. *Per contra*, the lag of the GDP growth at the national level does not seem to have any influence. This suggests that this latter variable, which is intended to control for the strength of the Great Financial Crisis that hit since 2008, is not associated to overall variations in benefit claims.

When I break the analysis by type of benefit (Table 4), I observe that immigrants that are subject to the restrictions claim less unemployment benefits by 2 p.p., less family-related benefits by almost 4 p.p. and and less housing support by about 2.5 p.p., although only the latter appears to be statistically significant. In other words, the effects that can be drawn from coefficients in Table 4 can be interpreted as follows. Similarly to the case of the aggregate indicators discussed above, I find that during the restricted regime A8 immigrants claim benefits at a comparable rate with respect to EU15-born individuals, while they tend to increase their take-up once they gain full eligibility. Hence, after the expiration of the temporary limitations A8 immigrants claim significantly more housing benefits and this corresponds to a 145% increase with respect to their EU15-born counterparts in the same period. The point estimates pertaining to unemployment and family benefits also suggest an increase in the take-up of these benefits by 174% and 98%, respectively, but in these two latter cases coefficients are not statistically significant.

The lack of statistical significance of the coefficient associated to family-related benefits may be due to the fact that more than two thirds of European immigrants in the sample have no children in the first years since their arrival to the UK.[36] On the other hand, unemployment

[36]Given that family-related benefits include some transfers which are provided conditional on the presence of

benefits are claimed only by a small fraction of the sample (less than 1%). Also, there is no effect on the claim of in-work benefits, i.e. primarily Income Support for low-income workers, and on sickness benefits: the coefficient associated to the treatment effect in both cases is essentially zero and not statistically significant. This is consistent with the eligibility rules for the A8 immigrants, in the sense that prior to April 2011 they were already qualified to claim in-work and sickness benefits and, hence, a significant change was not predicted to occur.[37] Analogously to the aggregated indices of benefit claims, I estimate the probability of claiming benefits by type with feasible GLS (Table A.2.3, columns IV-VII) and find consistent results: the magnitude of the coefficients associated to the interaction term is unchanged and they become statistically significant, except in the case of in-work benefits which, as discussed above, is expected to yield a null effect.

Additionally, I estimate Equation 1 on the whole sample of immigrants from EU15 and A8 countries that arrived after 2004, i.e. including those who have spent more than two years in the UK (see Table 1). Here, I expect the effect of the restrictions to be attenuated by the fact that now the sample also includes people who have already spent enough time in the country in order to have met the minimum requirement of the 12 months in employment and, hence, be eligible to claim benefits on the same grounds as EU15 nationals. Results are presented in Table A.2.4. The effect of the restrictions is, indeed, lower with respect to the figures in Table 3. Nevertheless, this is still statistically significant and corresponds to a decrease in the probability of claiming benefits by 4 p.p. (column II). In other words, the relaxation of the restrictions yields an increase in the propensity to claim benefits by 28% for A8 immigrants when they are compared to their EU15-born counterparts in the same period. Moreover, as predicted, the likelihood of claiming benefits for individuals in the A8 group is still higher compared to that of EU15 immigrants but its magnitude is considerably reduced: A8-born individuals are on average 45% per cent more likely to claim any out-of-work benefits, while when only very recent immigrants are considered the likelihood goes up to 122% (Table 3, column II). This would suggest that, while immigrants from the A8 countries are relatively more in need of welfare support compared to their counterparts from the EU15 countries, as they spend more time in the host country the behaviour of the two groups tends to converge.

4.2 Robustness Checks

In addition to the use of different estimators discussed in the previous subsection, I run several checks and placebo tests in order to verify the robustness of the analysis presented so far and

children (namely, child benefit and child tax credits), I also restrict the sample to include only individuals who have at least one child. This yields a reduction in the number of observations to around a third. The interaction term remains not significantly different from zero and the point estimate implies a contraction in the claim of this type of benefits due to the restrictions to almost 7 p.p. However, when I run the specification with country of origin and year fixed effects as in Table A.2.5 (see next subsection), I obtain a coefficient of -0.010 which is significant at the 10% level. Tables are omitted for brevity.

[37] Moreover, sickness benefits are claimed a very small number of individuals in the sample (less than 0.5%). For this reason, I do not present estimations concerning sickness benefits in the rest of the analysis, as the effect associated to this outcome is of little statistical importance.

the solidity of the interpretation of the main results.

To begin with, I run a slightly different specification with respect to Equation 1, where I substitute the dummies for belonging to an A8 country and for being interviewed before April 2011 with, respectively, country of origin and year dummies (Table A.2.5). Results are analogous to the ones presented in the main analysis: the coefficients associated to the interaction term are always negative and they even improve in terms of statistical significance.

Additionally, I carry out some placebo tests to ensure that the main results do not arise from random chance rather than from a causal relationship. As discussed in subsection 4.1, the use of in-work benefits as dependent variable is already to be seen as a placebo test, since this category of benefits was accessible for A8 immigrants even during the period of limited eligibility to welfare support. Coherently with this, I find that the coefficient associated to the restrictions on the claim of in-work benefits is not only not significant, but also its magnitude is close to zero (see Table 4). The same applies to sickness benefits, for which the estimated effect is, in fact, null.

Moreover, I run some other placebo tests by focusing on the span prior to the equalisation of A8 immigrants to other EU15 (that is, the period before April 2011) and by using several false cut-offs, namely one every six months from October 2010 going backwards to April 2008. Results in Table A.2.6 confirm the absence of any systematic treatment effect.

Furthermore, one may argue that, given the relatively large number of immigrants from Poland in the A8 group, the effect on the take-up of benefits may be potentially driven by some unobserved characteristics that only Polish immigrants might have. Thus, I run all regressions with two different sub-samples. In the first one I exclude all immigrants that were born in Poland (Table A.2.7), while in the latter I exclude all immigrants that were born in countries other than Poland from the A8 group (Table A.2.8). In both cases, results are in line with the main analysis.[38] Also, when Poland is excluded from the sample the estimated effects appear to be slightly larger in magnitude, which would suggest that the restrictions to welfare access bite proportionally more on immigrants other than those coming from Poland. This comes at no surprise if one takes into account that the Polish community has been among the largest in the UK since the post-war period, hence, it is plausible that at their arrival in the UK Polish-born new immigrants may have found a well-developed informal network on which to rely in place of (or along with) the official welfare assistance.

Finally, I perform an additional check by using a group of countries similar to the A8 as treatment group (Table A.2.9). I select a group of other European countries that are arguably comparable to the A8 group in their socio-economical features: Albania, Bosnia-Herzegovina, Croatia, Moldova, Serbia and Montenegro, Turkey, Ukraine, Kosovo. Among these countries, many of them are awaiting to enter the European Union at the time of the analysed period.[39]

[38]The same occurs when I exclude immigrants from Ireland (which belongs to the Common Travel Area with the UK) from the EU15 group. Tables are omitted for brevity.

[39]Mastrobuoni and Pinotti (2015) use a similar approach. Immigrants coming from A2 countries (Bulgaria and Romania) are not in the sample as they were subject to different transitional restrictions over the period January 2007 - December 2013. Croatia entered the European Union on July 2013 but Croatian immigrants had restrictions similar to those applied to A2 nationals (Kennedy, 2015). In any case, there are no Croatian-born

When I employ this sample of countries in place of the original treatment group (A8 countries) I find no consistent and significant treatment effect on the probability of claiming benefits. This result is expected, given that the countries in this sample have not encountered any change in restrictions over the period considered.

5 The Effect on the Labour Supply

In the previous section I have given evidence of the fact that relaxing the restrictions to welfare access yields a considerable and significant increase in the claim of out-of-work and HH-level benefits for A8 nationals. Specifically, I find that extending the access to these types of benefits for the first twelve months to immigrants that have just arrived in the country increases their probability of take-up by around 6 p.p., on average. The question that follows is, then, whether there is a response to this effect in terms of labour supply. In other words, when immigrants no longer face limitations to welfare support do they work less in view of the relatively increased financial resources?

In this section, I investigate whether the extension of the eligibility to out-of-work and HH-level benefits is complemented by a decrease in the labour supply, both on the extensive and on the intensive margins.

5.1 Employment Status

I begin with evaluating the impact of the limitations on the probability for immigrants to be in a certain employment status, according to the standard ILO definitions of employment, unemployment and inactivity.[40] Results are presented in Table 5 and are based on the whole sample of immigrants who have arrived to the UK after 2004.

The probability of being either employed or self-employed is more than 4 p.p. higher due to the restrictions to access to some types of welfare support (column I). These are exactly counterbalanced by an identical reduction in the probability of being inactive, while the effect on the propensity of being unemployed is null (columns III and II, respectively).[41] That is to say, the ending of the transitional restrictions to welfare access yields both a drop in the probability of being employed and an increase in that of being inactive for the A8 immigrants. This is because the acquired eligibility to transfers reduces the financial gain from working compared to not working (Brewer et al., 2010). In terms of percentages, these two effects are quantifiable in A8-born immigrants being less likely to be in employment by 6% and more prone to be inactive by 19%.

This finding is coherent with the hypothesis of an increased labour supply due to the reduced access to social benefits during the transitional restrictions in the years 2004-2011 for individuals

interviewed in between July 2013 and the end of the period considered.

[40] Here, workers in employment include all employees and self-employed individuals.

[41] When the $A8$ and the $PreApr2011$ dummies are replaced by country of origin and year dummies, results are identical (Table A.2.10, columns I-III).

Table 5: Employment Status

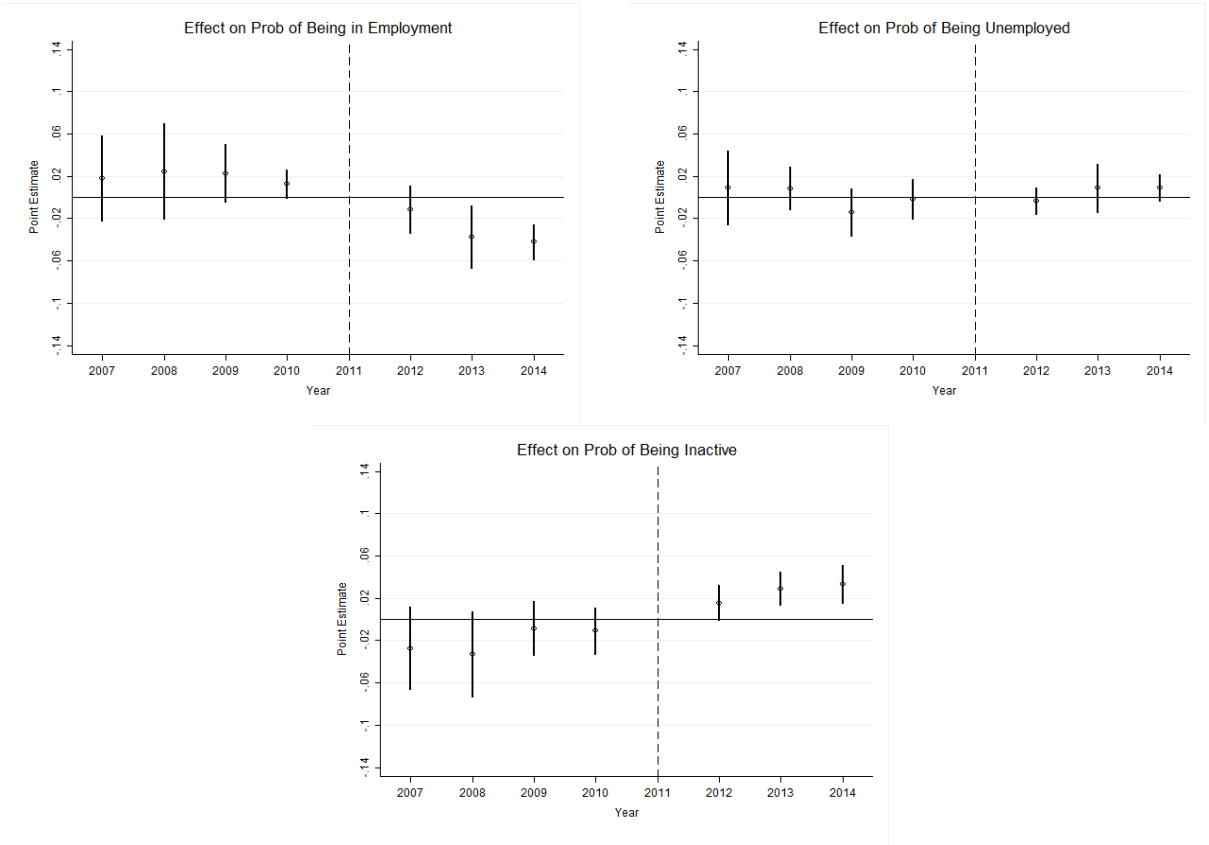
Dep. Variable	(I) OLS In Employment	(II) OLS Unemployed	(III) OLS Inactive
A8	0.101***	-0.009	-0.092***
	(0.023)	(0.007)	(0.018)
PreApr2011	-0.011	-0.014**	0.025*
	(0.014)	(0.006)	(0.014)
A8*PreApr2011	0.044***	0.002	-0.045***
	(0.014)	(0.008)	(0.015)
Observations	21,005	21,005	21,005
R-squared	0.139	0.013	0.147
Other Controls	Yes	Yes	Yes
Sample	Whole	Whole	Whole
P-value ($\beta_1 + \beta_3 = 0$)	0.000	0.211	0.000

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.

whose financial constraint is binding: the rise in the probability of being employed does not come as a consequence of a decline in the number of those in unemployment, which is an involuntary status. Rather, this is fully outweighed by a contraction of the inactivity rate. By adding the β_1 and β_3 coefficients from Equation 1, I also observe that A8 immigrants are almost 15 percentage points more (less) likely to be in employment (inactive) compared to EU15 nationals while subject to the restrictions. These figures are in line with the documented extremely high employment rate of A8 immigrants, especially in the first post-Accession years (Campbell, 2013). Figure 6 illustrates graphically the estimated effect of the restrictions to welfare access on the probability to be in employment, unemployed or inactive by year. No effect is recorded in the case of unemployment, where *lags* and *leads* are never statistically different from zero, while one can see a jump in the estimated (indirect) effect of the restrictions from before to after the year 2011 on the probabilities of being in employment and of being inactive. In all cases, coefficients in the pre-2011 period are never statistically different from zero, which supports the parallel trends assumption. As for the take-up of benefits, the effect in the year 2012 is slightly lower than in the two subsequent years, which is plausibly due to some adjustments to the change in eligibility regime, such as workers waiting for their contracts to expire and only eventually switching to inactivity.

Table A.2.11 in the Appendix reveals the results relative to the sub-sample of those who have stayed in the country for less than two years and for at least two years (odd and even columns, respectively). The claim discussed above is confirmed by the coefficients herein displayed. In particular, the magnitude of the effect on employment and on inactivity in the case of the newly arrived immigrants is 50% larger than that of the whole sample. This is a reasonably expected outcome for the sub-sample of the foreign-born who are mostly affected by the policy. Yet, for those who have stayed in the country for at least two years and, therefore, should have already

Figure 6: Estimated Effect of the Restrictions by Year: Employment Status



Note: The graphs depict the estimated effect of the restrictions to welfare access by year on the probability of being in employment, unemployed and inactive as from Equation 2. 95% confidence intervals are shown and standard errors are clustered at the country of origin level. I do not reject the null hypothesis of all point estimates in the 'pre' period being equal (p-values: 0.784, 0.182 and 0.771, respectively).

met the 12-month requirement, the expiration of the restrictive regime still has a small but significant impact by about 2 percentage points. This suggests that many immigrants who find themselves restricted in their eligibility to welfare and have to work more might choose to keep their job even when they can finally access benefits. One may then argue that such selective policy is effective not only in terms of enhancing the employment rate of those affected, but it also has an indirect, though smaller, impact on the workers who have met the eligibility requirements. Similarly to what is reported in Table 5, $\beta_1 + \beta_3$ are found to be statistically different from zero when being in employment and being inactive are used as outcomes. Hence, the newly arrived A8-born still appear to be around 15 p.p. more likely to be in employment and less likely to be inactive in the period following April 2011 compared to EU15 immigrants, i.e. when the two groups are subject to identical eligibility rules. When evaluating the sub-sample of those who have lived in the UK for at least two years, such gaps remain substantial and amount to little less than 13 p.p. On the other hand, in all cases, there is no statistical difference in the propensity to be unemployed between the two groups.

5.2 The Intensity of Employment and Earnings

Having found a higher probability of being in employment, I then focus on the sub-sample of individuals who work and analyse the effect of the limitations to welfare on the intensive margin of the labour supply. More specifically, I examine the impact on the number of hours usually worked, on the probability of working full-time and on the probability of having a second job. Last, I investigate whether there is any effect on earnings. Results are shown in Table 6.

In the first column, I estimate that the restrictions to welfare access increase the number of usual hours worked by 0.9, i.e. by being eligible to some types of benefits since having arrived in the UK makes A8 immigrants work less hours by 3% relative to other EU15 workers.[42] These figures are consistent with the effect on the probability of being employed discussed in the previous subsection. Yet, such a small effect is not surprising, given the fact that, plausibly, most workers might be under fixed-hour contracts and might not freely choose the number of hours they work in a week, especially in the case of employees. The choices that workers are possibly more likely to make independently, instead, concern the decision of working full-time or of taking a second job. Hence, I check whether these probabilities are significantly affected by being under the strict regime (Table 6, columns II and III). I find that when limitations are in place, the probability of having a full-time job rises by 2 p.p. (although the coefficient is not statistically significant), while I observe no impact on the take-up of second jobs. Finally, despite the increase in the probability of being in work and in the number of hours worked, I find no significant impact on gross hourly pay (column IV). As in the case of the employment status, I also break down the sample by length of stay and look at the employed immigrants who have been in the UK for less than two years and for at least two years, separately, but I

Table 6: Labour Supply

Dep. Variable	(I) OLS Usual Hrs Worked	(II) OLS Full-Time Job	(III) OLS Second Job	(IV) OLS Gross Hr Pay
A8	-0.616	0.026*	0.004	-6.890***
	(0.573)	(0.013)	(0.004)	(0.925)
PreApr2011	0.003	0.002	0.012***	-1.300**
	(0.420)	(0.012)	(0.003)	(0.584)
A8*PreApr2011	0.860*	0.020	-0.005	0.955
	(0.459)	(0.013)	(0.004)	(0.574)
Observations	16,084	16,350	16,331	12,085
R-squared	0.140	0.115	0.008	0.140
Other Controls	Yes	Yes	Yes	Yes
Sample	Whole	Whole	Whole	Whole
P-value ($\beta_1 + \beta_3 = 0$)	0.559	0.000	0.831	0.000

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.

[42] Similar results are found when the dummies $A8$ and $PreApr2011$ are replaced by two sets of country of origin and year dummies (Table A.2.10, columns IV-VII).

find no significant effect in any of the specifications.[43]

6 Heterogeneous Effects: Responses by Gender and Education

After having established that the transitional restrictions do effectively reduce the take-up of benefit for the affected group and that this (indirectly) results in an increase in the labour supply of these individuals, the last step of this analysis consists of identifying which sub-groups are predominantly affected by the stricter regime. That is, what are the categories which are induced to work more because of the lack of public assistance and their reduced financial resources? In this section, I evaluate the effects of the restrictions to welfare access across genders and educational attainment.

Understanding whether the restrictions to welfare access affect differently men and women is of great relevance for two reasons. First, because women are traditionally more exposed to risks in their labour market opportunities and if they are subject to reduced eligibility to state-provided assistance this might translate into a deterioration of their well-being. Second, as women are typically the second earner, or the less-earning spouse, within the household, the fact that they may or may not be eligible to welfare assistance might have repercussions on the household finances directly and on the women's choice to work, particularly in presence of young children. Hence, if the woman decides to be in the labour market, the additional earnings produced will stack on top of her spouse's earnings and this may become a problem if the extra earnings push the household total income above the eligibility threshold for some types of benefits (Atkinson and Micklewright, 1991).[44] As a consequence, women have a strong incentive not to work.[45] What is more, such reactions are due to differ across socio-economic status. Specifically, the above mechanism is likely to occur for high-income households. In the case of low-income households, in turn, state-provided assistance might alleviate some of the pressure related to financial constraints but the mitigation might be only partial and therefore women may be still in need of earning a salary (McCaffery, 2007).

A similar mechanism is likely to happen in the presence of very young children, for which child care to be purchased on the market might be so expensive that one parent might choose not to work and stay at home instead, i.e. women being the typical child-rearers in the household. On the one hand, it may be that highly-educated women, who usually have a higher opportunity cost of not working and are less financially constrained, can afford to purchase child care on the market. However, if the cost of marketable child care is too high they might, instead, choose to stay out of the labour market, while low-educated women (who may have access to alternative,

[43] Results omitted for brevity.

[44] In the broader context of taxation, McCaffery (2007) refers to a higher marginal rate of taxation for women than for men. This can have detrimental effects on female employment as the labour supply of women is more elastic than that of men (Alesina et al., 2011).

[45] Alesina et al. (2011) argue that gender-based taxation would allow a convergence in the elasticities of labour supply between man and woman so that the allocation of home duties within the household and the labour market opportunities across genders would eventually equalise.

subsidised or informal child care) cannot afford not to earn a salary.[46]

Hence, in order to appreciate more in depth the dynamics concerning the link between welfare restrictions and labour supply of immigrants, I split the sample by gender and by educational achievement.

6.1 The Impact across Genders

Table A.2.12 displays results from Equation 1 when the outcome is the take-up of benefits and the sample is divided by gender. As coefficients suggest, the effect of the transitional restrictions on the probability of claiming is almost entirely driven by females (even columns), while the same coefficients tend to zero in the case of males (odd columns). Such pattern is persistent regardless of the indicator for benefit claim used. This result implies that the temporary limitations to welfare access predominantly affect the use of public assistance for women. In other words, the expiration of the restrictions in 2011 has brought about an increase in the take-up of benefits by women by almost 10 percentage points.

As expected, the reaction in the extensive margin of the labour supply is also to be attributed to women. In fact, due to the temporary restrictions which yield a tightening in their financial constraint, women are found to be 6 p.p. more likely to be in employment and almost 7 p.p. less likely to be inactive (Table A.2.13). That is, when the restrictions are relaxed and eligibility to benefits is granted to all European immigrants regardless of their country of origin, this makes A8-born women less inclined to work by 6 p.p. and induces them to choose to go into inactivity. Conversely, the magnitude of the effect for males is much lower (by two thirds) and is not statistically significant.

The implications for the labour supply on the intensive margin, *per contra*, offer a different interpretation. Results are presented in Table A.2.14 and they clearly show the absence of any effect of the temporary restrictions on the hours worked or on the propensities to be in full-time work or to have a second job for females. Instead, the stricter regime appears to significantly affect the number of hours worked by men, yielding an increase by 1.3 hours. Moreover, there is a significant effect on hourly pay and this is, again, only for male workers.

Such figures suggest that limiting access to benefits determines a fall in the probability to claim for women especially. In turn, to compensate for the foregone income coming from state-provided aid, women become more likely to work and less likely to be inactive. On the other hand, men tend to be already in employment and, hence, their labour supply is only partially affected through a significant increase in the number of hours worked. Similarly, men workers who also belong the sub-group (the A8-born) that suffers the highest wage penalties, see a significant increase in their hourly pay when subject to the restrictions.

6.2 The Role of Education

Drinkwater and Robinson (2013) argue that lower educational levels are associated to a higher

[46] Viitanen (2005) finds that the cost of child care significantly and negatively affects the probability of working for British mothers.

probability of claiming benefits by immigrants, although they estimate a relatively small effect of education in the case of A8 immigrants. Indeed, I do find a negative and significant effect of the policy restrictions on the sub-sample of the low-educated (Table A.2.15), while the highly educated immigrants do not seem to change their likelihood to claim benefits.[47] Specifically, the probability of taking-up benefits falls by almost 9 p.p. due to the restrictions for the less educated only, while those who hold (at least) a degree do not seem to be affected. Hence, this should indicate that a more restrictive regime in terms of welfare access has the strongest impact on the less educated (and less skilled) immigrants, who in principle should have more binding financial constraints and, therefore, be more in need of welfare assistance. Education is, in fact, correlated with earnings: the average weekly pay for full-time highly educated and low educated workers in the sample is GBP 387.55 and GBP 250.75, respectively.

Similarly, I observe that the temporary limitations push immigrants who have lower levels of education to work longer hours, with an increase by 1.6 hours. Additionally, they are 5 p.p. more likely to have a full-time job (Table A.2.17). The coefficients associated to the interaction term in the case of the probability of taking a second job is also statistically significant at the 10% level but the magnitude of the coefficient is essentially null. The hypothesis of an effect prevailing through the immigrants' financial constraint is supported also by the last piece of evidence (Table A.2.17, columns VII-VIII): when analysing hourly pay, I find that the limitations to welfare access bring about an increase in the wage of the low educated immigrants only.

Finally, the likelihood of being in employment and of being inactive is affected by the transitory limitations to welfare access only in the case of highly educated immigrants (Table A.2.16). This might be explained by the fact that in less educated (hence, low-income) households financial constraints are binding and all adult members have no choice but to work. Conversely, highly educated (high-income) households might afford to allow the second earner, that is typically the woman, to stay out of the labour force (McCaffery, 2007). Hence, once the restrictive regime expires, highly educated women become less likely to be in employment by 5 p.p. and more likely to be inactive, while the absence of any effect on less educated women might be due to the fact that they cannot afford to leave the labour market. Such arguments are also confirmed by the lack of significance on the probability to be unemployed, which is an involuntary status. These findings are at odds with what is proposed by Meghir and Phillips (2010) on British data. The authors find that participation elasticities of highly-educated individuals is virtually null, while low-educated men display some degree of responsiveness to tax and benefit incentives. Also, their results confirm a high sensitiveness in terms of participation for (low-income) women with young children and lone mothers (Brewer et al., 2006; Francesconi and Van Der Klaauw, 2007). However, while their conclusions are drawn on a sample that is representative of the general population, my analysis is focused on a group of foreign-born individuals who, differently from the natives, are only eligible to state transfers and benefits if they have a Right to Reside, i.e. are economically active, are able to support themselves, or (if unemployed) have a genuine chance of finding a job (Kennedy, 2011).

[47] 'High' education refers to ISCED levels 5 and 6 (tertiary education) and 'Low' education indicates any level below that.

7 Discussion

The scope of this paper is to provide an insight on the consequences of the imposition of restrictions to welfare support access in terms of benefit claims and of labour supply. In order to do so, I use a difference-in-difference setting by exploiting a change in policy that took place on April 2011 in the UK, when immigrants from the so-called A8 countries, which entered the European Union in 2004, after a transitional period of limitations in their rights to access welfare, were finally equalised to other citizens of the European Economic Area. Specifically, in the period up to April 2011, A8 nationals who moved to the UK had access to some types of public assistance only after they had been in work for the first 12 months since their arrival.

First, I investigate the effects of being under stricter regulations on the probability of claiming benefits for the group of immigrants that is directly affected by the change in policy (namely, those who have lived in the UK for less than two years). I find that this decreases claims by 6 p.p. on average. However, since A8 immigrants are *per se* relatively more likely to claim benefits than those coming from a EU15 country, there appears to be no difference, on average, in the behaviour of the two groups prior to April 2011. This implies that the A8-born are around 120% more likely to claim benefits than other EEA nationals when subject to the same eligibility rules. Nevertheless, I also find that these differences tend to narrow down and the two groups become more similar as they spend more time in the host country. Moreover, by looking at each type of benefit separately, I am able to estimate that the effect on claims is largely concentrated on housing-related benefits, while little impact is found on family-related or unemployment benefits.

Second, having established that limitations to welfare access successfully determine a decrease in the claim of certain benefits, I analyse whether there is a response in terms of the labour supply of immigrants. On the extensive margin, I find that under the restricted regime the probability of being in employment is 4 p.p. higher and this is sharply counterbalanced by an equal reduction in the likelihood of being inactive, while the share of the unemployed is not affected. Moreover, I find that, among the employed, restrictions to welfare access yield an increase in the number of hours worked by almost one hour, while no effect is found on the likelihood of working full-time, of having a second job or on earnings.

Furthermore, when I split the sample by gender and education, I observe that the restrictions significantly affect the propensity to claim for women and this translates into a higher participation rate in the labour market for the same sub-group. On the other hand, the limitations to welfare access appear to affect the take-up of benefits for the less educated sub-group, yielding a response through the intensity of their labour supply.

The results found in this analysis yield a number of considerations. From the first part of the investigation, it is clear that limiting welfare access may reduce the take-up of benefits dramatically. However, in this particular case, this is only effective to a certain extent, as it does not make the treated group less likely to claim benefits with respect to the unaffected one.

In the second half of the paper, a labour supply response undeniably emerges: those who are subject to the restrictive regime do exhibit a higher propensity to work, and this is especially true

for the newly arrived immigrants, who are directly affected by the first 12-month limitations to welfare access. Likewise, they are found to work longer hours. In view of such results, it may then be argued that those immigrants who are not entitled to access some types of welfare support may be keen on working more in order to compensate for the foregone receipt of assistance.

As a matter of fact, it appears that the transitional limitations tend to disproportionally restrain those who are possibly more in need (i.e. those who are more financially constrained): not only the policy affects the claim of benefits of women and of less educated individuals in a particularly strong way, but it also determines a higher propensity to work (and a lower likelihood of being inactive) for a group of immigrants who already stand out for their extremely high employment rate, compared both to other foreign-born and to natives. Moreover, an effect on the wage is found on the less educated only, who are possibly the sub-group of immigrants that are more at risk of being in a disadvantaged condition and that have to make up for the absence of any state support. On the other hand, the positive effect on the probability to be in work for the highly educated (mostly women) only can be explained by the fact that when the restrictions are relaxed the less educated simply cannot afford to leave the labour market and have to continue working.

Finally, given the concerns that have arisen and have been fiercely debated on in the past years - peaking (but not ceasing) with the EU referendum on June 2016, a comparison against the UK natives is worth a mention. With respect to a similar sample of natives, A8 immigrants appear to be much less reliant on welfare. Furthermore, as mentioned above, UK nationals have remarkably lower employment rates and higher inactivity rates than A8 immigrants, who also work longer hours and receive lower pay on average. Hence, these figures suggest that, as argued by Drinkwater and Robinson (2013), the concerns of media and the public opinion about these recently arrived immigrants wanting to seek welfare support in the UK may have been unfounded, at least when their behaviour is evaluated against that of the resident population of natives.

To my knowledge, this is the first attempt to empirically evaluate the effects of the transitional restrictions that were applied to immigrants from the A8 countries after the 2004 Accession. In view of the results herein presented, and of past and future related research, it may be of use for the policy maker to prudently assess all direct and indirect fallouts coming from the application of such restrictions to a group of individuals and to conscientiously evaluate the (potential) possibility to apply similar schemes to other categories or sub-populations in the future.

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Appendix

A.1 Appendix 1: Benefits in the UK

This section is aimed at briefly describing the main types of benefits and welfare support available in the UK for natives and for citizens of other countries.[48]

A.1.1 Types of Available Benefits

The UK benefit system provides for countless categories of benefits and contributions.[49] Eligibility for benefits is based on a number of features of the 'benefit unit', i.e. essentially the nuclear family (single person or couple living together with or without dependent children). The benefit unit differs from the 'household', whereas a household may contain more than one benefit units. For simplicity, throughout the analysis I refer to a benefit unit as a household. As mentioned above, eligibility for benefits depends on a number of circumstances within a household, such as income, savings, outgoings (e.g. rent and childcare payments), existing benefits and council tax bill. This, along with the definition of benefit unit, make eligibility of individuals in the sample virtually impossible to be fully identifiable with the available the data.

Among the most common social assistance benefits, there are Income Support (IS), income-based Job Seeker's Allowance (JSA) and in-work benefits such as the Working Tax Credit. These are all aimed at financially support low-income households and their recipiency depends on employment status. In addition, there are also Housing Benefit (HB) and Council Tax Benefit (CTB), which are designed to specifically help low-income households with housing-related costs. For households with dependent children (under 16 years of age or under 20 years of age if in approved education or training), also Child Benefit and Child Tax Credit are available. Child Benefit consists of a weekly allowance for each child, as long as the household income does not exceed a certain income. Child Tax Credit is an additional transfer that can be claimed for each child that lives in the household.[50]

A.1.2 Eligibility to Welfare Services of Immigrants in the UK

The rules on eligibility for benefits for non-British citizens are extremely complex and depend on a wide range of factors, which include nationality, immigration status (and any conditions attached to it), the circumstances under which the person arrived in the UK, whether they are considered to be 'habitually resident', their employment status, and whether they arrived to the UK alone or with other family members (Kennedy, 2015). In what follows I will briefly

[48] While a number of cases provide for a different treatment, this rather simplified summary is only intended to give a glimpse of the general rules that may apply and is solely aimed at the purposes of this analysis. See www.gov.uk for a more detailed description of the existing rules.

[49] At least up until the adoption of the Universal Credit, which started in some pilot areas at the end of 2013 and is expected to be fully implemented by the end of 2017. This is meant to replace a number of welfare contributions, such as Income Support, income-based Job Seeker's Allowance (JSA) and Employment and Support Allowance (ESA), Housing Benefit, Child Tax Credit and Working Tax Credit.

[50] See Browne and Hood (2012) and Hood and Oakley (2014) for a survey of the benefit system in the UK.

summarise the main and broader rules under which eligibility to benefits for people other than British citizens is defined.

Access to most welfare benefits and the social security system in the UK is a prerogative of all people holding the Right to Reside (RtR), which derives from holding a Right of Abode (RoA), an Indefinite Leave to Remain (ILR) or a Permanent Residence (PR) card. For benefits that are granted at the household level (e.g. child and housing benefits), the claim can be made by any member of the household, as long as they are entitled to apply for them. No requirements are generally put on the other members, who may, therefore, not hold a RoA, an ILR or PR.

All British citizens and Commonwealth citizens (under some circumstances) have the Right to Reside and are granted access to benefits and tax credits with it, as they hold a Right of Abode (RoA), i.e. they hold an unrestricted right to live in the United Kingdom.[51] Similarly, refugees are granted the right to claim benefits and tax credits on the same basis as UK nationals, while asylum seekers (i.e. those who are awaiting to be declared as refugees) are only eligible for the (less generous) so-called 'asylum support', which may translate into accommodation and financial support.

Immigration from countries outside the EEA (and Switzerland) are regulated by a Points Based System (*Tiers*). People coming from these countries must hold an Indefinite Leave to Remain in order to be entitled to apply for most welfare services. The ILR is generally acquired after five or ten years of continuous and lawful residence in the UK. The first case applies to all people who have lived in the UK with a visa that was issued for working purposes, the latter encompasses a number of residual categories. A threshold of twenty years (fourteen, up until July 2012) is required for people who have continuously lived in the UK lawfully or unlawfully.

Citizens of countries that belong to the European Economic Area (EEA) and Switzerland can access welfare support only if they have the Right to Reside (RtR), i.e. are economically active or able to support themselves.[52] Following a European Directive, starting on April 2006, the RtR is also granted for the first three months to economically inactive people but access to benefits is not given to those who gained it only on the basis of this new three-month rule. Access to benefits is, therefore, ensured to all EEA citizens who, after the first three months in the UK, are workers, self-employed or students (provided they can support themselves) and their families. If unemployed, EEA citizens may also acquire the Right to Reside if they can show that they have a 'genuine chance of being engaged', are actively looking for a job and are habitually resident in the country. After a continuous period of residence in the UK for five years, EEA citizens gain a Permanent Right of Residence status and can access benefits and

[51] People born after 1st January 1983 have the RoA only if they are British citizens, while Commonwealth nationals who are not also British citizens and who were born before that date may hold the RoA only if they meet certain conditions. Citizens of Pakistan and of South Africa are not considered as belonging to the Commonwealth for immigration purposes. Irish nationals, although they are not unconditionally granted the right to live in the UK, have a *de facto* RoA as a consequence of the Common Travel Area regulations.

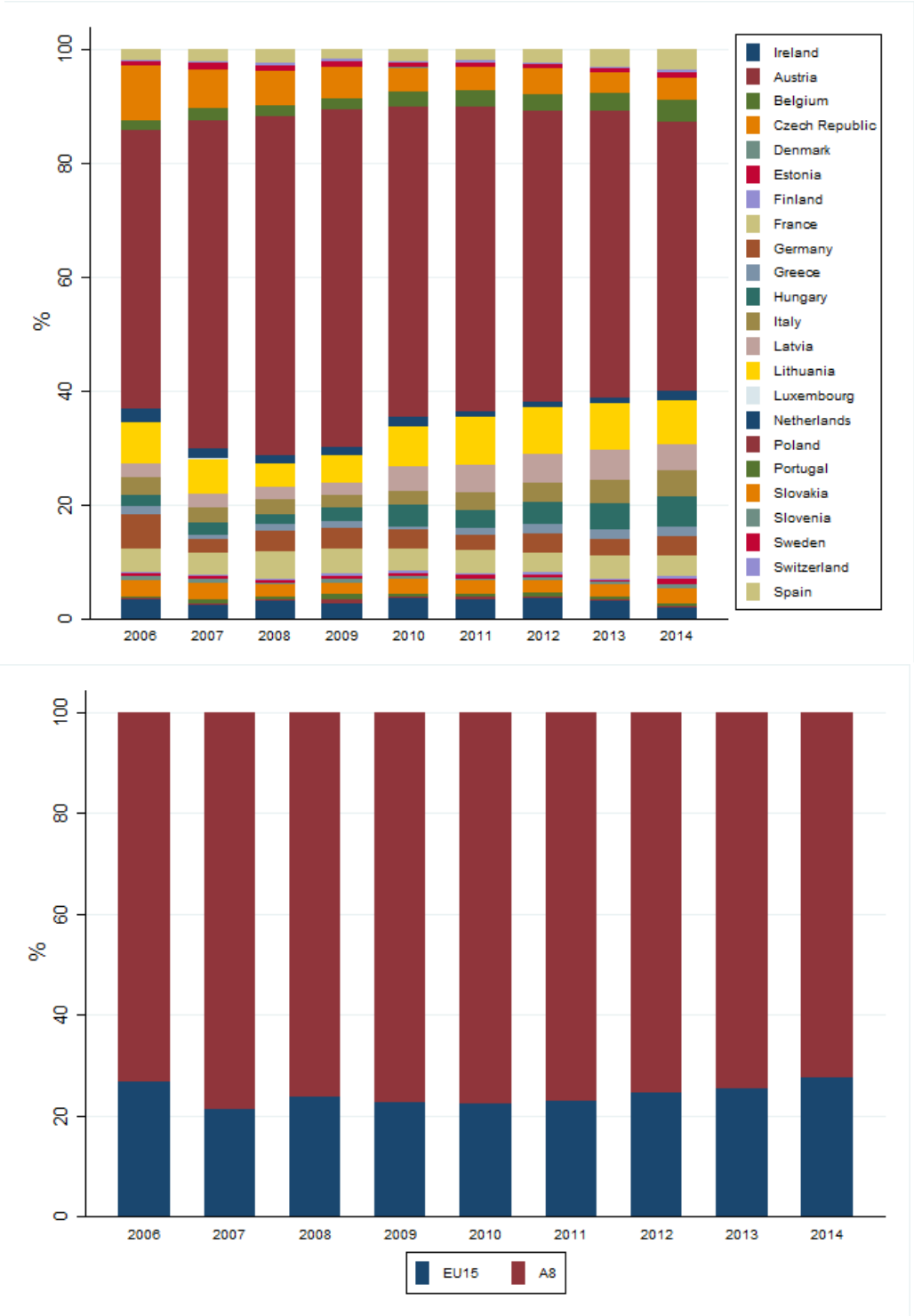
[52] The term 'Right to Reside', in the context of the EEA may generate some equivocation: the RtR differs from the free movement rights that all EEA citizens can exercise in the sense that, while all EEA citizens can freely move from one country to the other within the EEA, only certain categories may have some rights attached to their residence in the host country. As Kennedy (2011) suggests, it may be more convenient to think of RtR as 'rights of residence'.

tax credits like UK nationals.

Following the EU enlargement in 2004, most European countries put restrictions to access to workers from the new member states (usually through the need of a work permit) for up to 7 years because of concerns regarding the effects of a potentially large influx of immigrants on their labour markets and their welfare systems. Only the UK, Ireland, and Sweden opened their labour markets to workers from Eastern Europe. In fact, the 2004 EU enlargement was accompanied by a major migration shock at the European level. Elsner (2013) estimates that, in between 2004 and 2007, Sweden, Ireland and the UK received 1.2 million workers and that the shock was substantial also on the side of the sending countries: in the same period, even if Poland had the highest number of emigrants in absolute terms, 9% of all Lithuanian workers and 6% of all Latvian workers moved to work to Ireland or to the UK. In the UK, some mild restrictions have been temporarily applied to citizens of some EEA countries that joined the European Union in the last decade. In particular, people coming from the so-called A8 countries, which joined the EU in 2004, had restricted access to welfare services up until April 2011, while citizens of Romania and Bulgaria (A2 countries) had additional restrictions that had been in place since these countries joined the EU in 2007 and continued until December 2013. More recently, similar restrictions to the ones applying to Bulgarians and Romanians have also been applied to immigrants from Croatia, which has joined the EU in 2013. These are due to expire in 2018, although they might be extended until 2020.

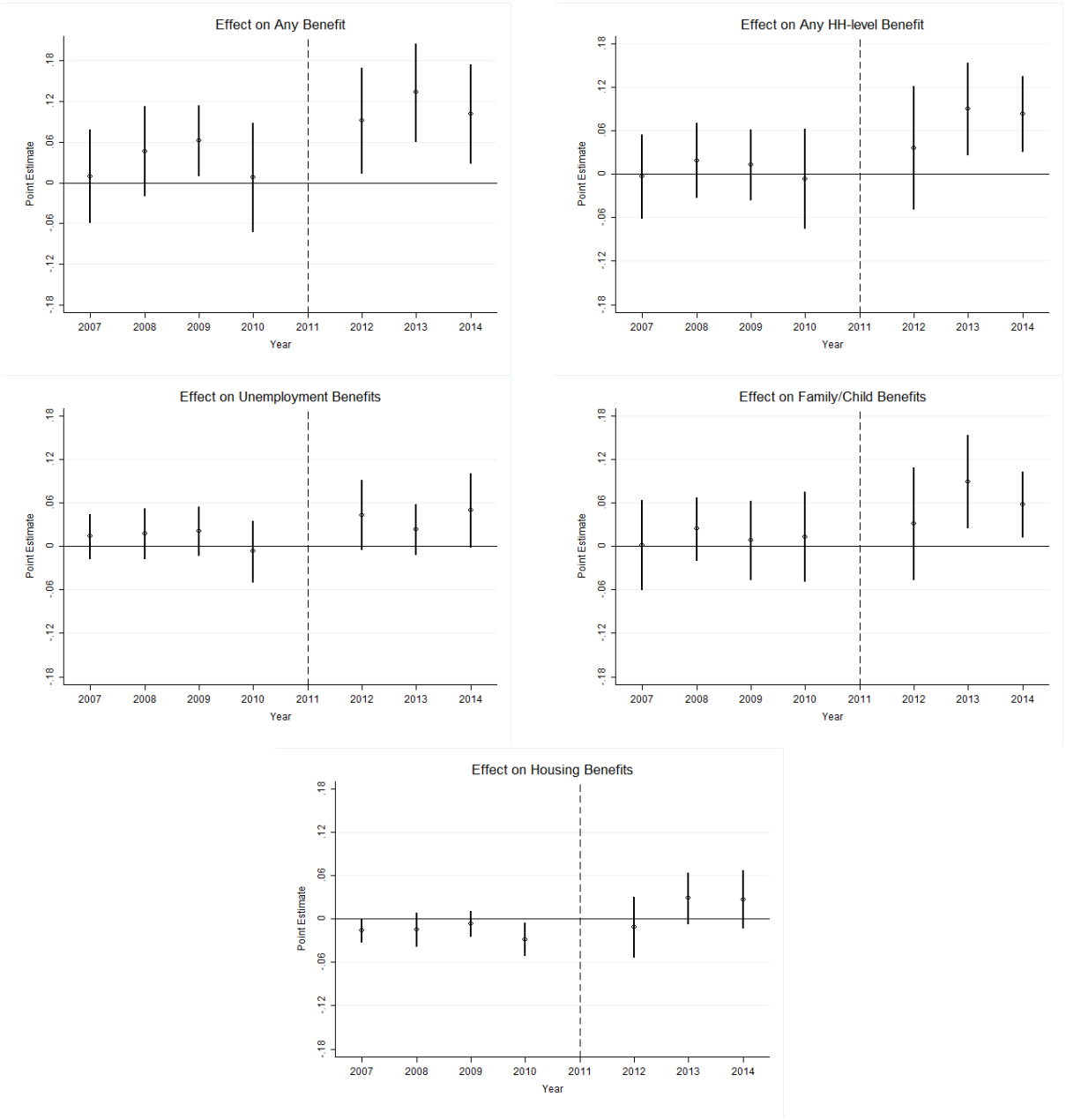
A.2 Appendix 2: Figures and Tables

Figure A.2.1: Proportion of Immigrants by Group and Year



Note: The graphs show the proportion of immigrants in the sample by country of birth and year (panel above) and by group (A8 or EU15) and year (panel below).

Figure A.2.2: Estimated Effect of the Restrictions by Year: Other Benefit Indicators



Note: The graphs display the estimated effect of the restrictions to welfare access by year on the probability to claim benefits as from Equation 2. 95% confidence intervals are shown and standard errors are clustered at the country of origin level. In all cases, I do not reject the null hypothesis of all point estimates in the 'pre' period being equal.

Table A.2.1: Differences in Means: Main Characteristics

		Natives	EU15	A8	Δ(Natives - EU15)	Δ(Natives - A8)	Δ(EU15 - A8)	Δ(A8 After - A8 Before)
Individual Characteristics								
Age	- *Before Apr2011*	43.085	30.610	30.235	12.475***	12.850***	0.375	
					(0.276)	(0.151)	(0.200)	
	- *After Apr2011*	43.485	31.839	32.612	11.646***	10.873***	-0.773***	2.377***
					(0.267)	(0.153)	(0.200)	(0.137)
Sex of respondent	- *Before Apr2011*	0.524	0.511	0.518	0.013	0.006	-0.007	
					(0.010)	(0.006)	(0.012)	
	- *After Apr2011*	0.524	0.538	0.557	-0.014	-0.033***	-0.019	0.039***
					(0.010)	(0.006)	(0.011)	(0.008)
Married	- *Before Apr2011*	0.532	0.286	0.391	0.246***	0.141***	-0.105***	
					(0.010)	(0.006)	(0.011)	
	- *After Apr2011*	0.509	0.316	0.432	0.194***	0.078***	-0.116***	0.041***
					(0.010)	(0.006)	(0.011)	(0.008)
No. of Dependent Children	- *Before Apr2011*	0.707	0.503	0.666	0.204***	0.040***	-0.164***	
					(0.021)	(0.012)	(0.022)	
	- *After Apr2011*	0.693	0.594	0.865	0.099***	-0.172***	-0.271***	0.198***
					(0.020)	(0.012)	(0.022)	(0.015)
Years in UK	- *Before Apr2011*		2.031	2.499			-0.468***	
							(0.035)	
	- *After Apr2011*		3.509	4.861			-1.352***	2.362***
							(0.051)	(0.030)
Primary Edu	- *Before Apr2011*	0.011	0.024	0.038	-0.012***	-0.026***	-0.014**	
					(0.002)	(0.001)	(0.004)	
	- *After Apr2011*	0.011	0.019	0.033	-0.007***	-0.022***	-0.015***	-0.004
					(0.002)	(0.001)	(0.004)	(0.003)
Lower Secondary Edu	- *Before Apr2011*	0.606	0.103	0.105	0.503***	0.500***	-0.003	
					(0.010)	(0.005)	(0.007)	
	- *After Apr2011*	0.572	0.105	0.093	0.467***	0.479***	0.012	-0.012**
					(0.010)	(0.006)	(0.007)	(0.005)
Upper Secondary Edu	- *Before Apr2011*	0.113	0.090	0.070	0.024***	0.043***	0.020**	
					(0.006)	(0.004)	(0.006)	
	- *After Apr2011*	0.129	0.083	0.073	0.045***	0.056***	0.011	0.002
					(0.007)	(0.004)	(0.006)	(0.004)
Lower Tertiary Edu	- *Before Apr2011*	0.052	0.108	0.430	-0.055***	-0.378***	-0.323***	
					(0.005)	(0.003)	(0.011)	
	- *After Apr2011*	0.061	0.102	0.431	-0.041***	-0.370***	-0.329***	0.000
					(0.005)	(0.003)	(0.010)	(0.008)
First Degree Edu	- *Before Apr2011*	0.066	0.108	0.097	-0.042***	-0.031***	0.010	
					(0.005)	(0.003)	(0.007)	
	- *After Apr2011*	0.077	0.134	0.108	-0.057***	-0.030***	0.026***	0.011*
					(0.005)	(0.003)	(0.007)	(0.005)
Further Edu	- *Before Apr2011*	0.152	0.569	0.259	-0.417***	-0.108***	0.310***	
					(0.007)	(0.004)	(0.011)	
	- *After Apr2011*	0.150	0.557	0.263	-0.407***	-0.112***	0.294***	0.003
					(0.007)	(0.004)	(0.010)	(0.007)
Mixed-Origin HH	- *Before Apr2011*	0.052	0.532	0.254	-0.480***	-0.202***	0.278***	
					(0.005)	(0.003)	(0.011)	
	- *After Apr2011*	0.057	0.563	0.411	-0.506***	-0.353***	0.153***	0.156***
					(0.005)	(0.003)	(0.011)	(0.007)
Observations	- *Before Apr2011*	866320	0	0	858395	863930	10315	
	- *After Apr2011*	492114	0	0	484062	489476	10690	15977

Table A.2.2: Differences in Means: Outcomes

		Natives	EU15	A8	Δ(Natives - EU15)	Δ(Natives - A8)	Δ(EU15 - A8)	Δ(A8 After - A8 Before)
Benefit Claim								
Any Benefit	- *Before Apr2011*	0.343	0.124	0.250	0.219***	0.093***	-0.126***	
					(0.010)	(0.005)	(0.010)	
	- *After Apr2011*	0.329	0.149	0.362	0.180***	-0.033***	-0.213***	0.112***
					(0.009)	(0.005)	(0.010)	(0.007)
Any Out-of-Work Benefit	- *Before Apr2011*	0.275	0.115	0.217	0.160***	0.058***	-0.102***	
					(0.009)	(0.005)	(0.009)	
	- *After Apr2011*	0.270	0.141	0.326	0.128***	-0.057***	-0.185***	0.109***
					(0.009)	(0.005)	(0.010)	(0.007)
Any HH-Level Benefit	- *Before Apr2011*	0.259	0.110	0.213	0.150***	0.046***	-0.103***	
					(0.009)	(0.005)	(0.009)	
	- *After Apr2011*	0.251	0.133	0.317	0.119***	-0.066***	-0.185***	0.104***
					(0.008)	(0.005)	(0.010)	(0.007)
Unemployment Bnft	- *Before Apr2011*	0.024	0.012	0.008	0.013***	0.016***	0.004	
					(0.003)	(0.002)	(0.002)	
	- *After Apr2011*	0.033	0.021	0.024	0.012***	0.009***	-0.003	0.016***
					(0.003)	(0.002)	(0.003)	(0.002)
Family/Child Bnft	- *Before Apr2011*	0.216	0.096	0.204	0.120***	0.012*	-0.108***	
					(0.008)	(0.005)	(0.009)	
	- *After Apr2011*	0.201	0.119	0.295	0.082***	-0.093***	-0.175***	0.090***
					(0.008)	(0.005)	(0.010)	(0.007)
Housing Bnft	- *Before Apr2011*	0.074	0.025	0.035	0.050***	0.040***	-0.010*	
					(0.005)	(0.003)	(0.004)	
	- *After Apr2011*	0.089	0.043	0.090	0.046***	-0.001	-0.047***	0.055***
					(0.006)	(0.003)	(0.006)	(0.004)
In-Work Empl. Bnft	- *Before Apr2011*	0.176	0.049	0.150	0.127***	0.027***	-0.100***	
					(0.008)	(0.004)	(0.008)	
	- *After Apr2011*	0.134	0.053	0.192	0.081***	-0.058***	-0.139***	0.043***
					(0.007)	(0.004)	(0.008)	(0.006)
Sickness Bnft	- *Before Apr2011*	0.083	0.005	0.004	0.078***	0.079***	0.001	
					(0.006)	(0.003)	(0.001)	
	- *After Apr2011*	0.081	0.007	0.010	0.074***	0.072***	-0.002	0.006***
					(0.005)	(0.003)	(0.002)	(0.001)
Economic Activity and Labour Supply								
In Employment	- *Before Apr2011*	0.718	0.670	0.818	0.048***	-0.100***	-0.148***	
					(0.009)	(0.005)	(0.010)	
	- *After Apr2011*	0.709	0.703	0.799	0.006	-0.090***	-0.096***	-0.019**
					(0.009)	(0.005)	(0.009)	(0.006)
Unemployed	- *Before Apr2011*	0.043	0.059	0.053	-0.016***	-0.010***	0.006	
					(0.004)	(0.002)	(0.005)	
	- *After Apr2011*	0.053	0.064	0.059	-0.012**	-0.006*	0.006	0.006
					(0.004)	(0.003)	(0.005)	(0.004)
Inactive	- *Before Apr2011*	0.240	0.271	0.129	-0.032***	0.111***	0.142***	
					(0.009)	(0.005)	(0.008)	
	- *After Apr2011*	0.238	0.233	0.142	0.005	0.096***	0.091***	0.013*
					(0.008)	(0.005)	(0.008)	(0.005)
Usual Hrs Worked	- *Before Apr2011*	26.560	26.749	32.584	-0.189	-6.024***	-5.835***	
					(0.419)	(0.230)	(0.445)	
	- *After Apr2011*	25.995	27.822	30.605	-1.826***	-4.610***	-2.783***	-1.979***
					(0.400)	(0.230)	(0.431)	(0.291)
Has a 2nd Job	- *Before Apr2011*	0.028	0.018	0.019	0.010**	0.009***	-0.001	
					(0.003)	(0.002)	(0.003)	
	- *After Apr2011*	0.028	0.014	0.017	0.014***	0.011***	-0.004	-0.002
					(0.003)	(0.002)	(0.003)	(0.002)
Full-Time Work	- *Before Apr2011*	0.724	0.825	0.859	-0.101***	-0.135***	-0.034***	
					(0.010)	(0.005)	(0.009)	
	- *After Apr2011*	0.712	0.804	0.817	-0.092***	-0.105***	-0.013	-0.042***
					(0.010)	(0.005)	(0.009)	(0.006)
Gross Hr Pay in Main Job	- *Before Apr2011*	7.500	7.963	5.227	-0.464	2.272***	2.736***	
					(0.318)	(0.177)	(0.168)	
	- *After Apr2011*	7.891	9.512	5.679	-1.621***	2.212***	3.832***	0.452***
					(0.285)	(0.167)	(0.254)	(0.083)
Observations	- *Before Apr2011*	866320	0	0	858395	863930	10315	
	- *After Apr2011*	492114	0	0	484062	489476	10690	15977

Table A.2.3: Claim of Benefits: Feasible GLS

Dep. Variable	(I) Feasible GLS Any Benefit	(II) Feasible GLS Any Out-of-Work Benefit	(III) Feasible GLS Any HH-level Benefit	(IV) Feasible GLS Unempl. Benefit	(V) Feasible GLS Family Benefit	(VI) Feasible GLS Housing Benefit	(VII) Feasible GLS In-Work Benefit
A8	0.083***	0.063***	0.064***	0.008	0.053**	0.024**	0.047***
	(0.022)	(0.023)	(0.022)	(0.010)	(0.021)	(0.011)	(0.015)
PreApr2011	0.004	0.005	0.004	0.000	0.003	-0.007*	-0.019*
	(0.010)	(0.010)	(0.015)	(0.007)	(0.014)	(0.004)	(0.010)
A8*PreApr2011	-0.063***	-0.064***	-0.055**	-0.020*	-0.039*	-0.025**	-0.003
	(0.023)	(0.022)	(0.023)	(0.012)	(0.023)	(0.011)	(0.015)
Observations	4,918	4,918	4,918	4,918	4,918	4,918	4,918
R-squared	4,744	4,744	4,744	4,744	4,744	4,744	4,744
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs
P-value ($\beta_1 + \beta_3 = 0$)	0.252	0.978	0.507	0.001	0.319	0.746	0.000

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.

Table A.2.4: Claim of Benefits: Whole Sample

. Dep. Variable	(I) OLS Any Benefit	(II) OLS Any Out-of-Work Benefit	(III) OLS Any HH-level Benefit	(IV) OLS Unempl. Benefit	(V) OLS Family Benefit	(VI) OLS Housing Benefit
A8	0.091***	0.064***	0.066***	-0.002	0.058***	0.019
	(0.021)	(0.018)	(0.017)	(0.006)	(0.013)	(0.011)
PreApr2011	0.033**	0.033**	0.036***	-0.008	0.033***	-0.001
	(0.012)	(0.012)	(0.011)	(0.005)	(0.011)	(0.006)
A8*PreApr2011	-0.043**	-0.039**	-0.038**	-0.005	-0.025	-0.026***
	(0.018)	(0.018)	(0.016)	(0.008)	(0.016)	(0.008)
Observations	21,005	21,005	21,005	21,005	21,005	21,005
R-squared	0.337	0.348	0.355	0.012	0.386	0.060
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Whole	Whole	Whole	Whole	Whole	Whole
P-value ($\beta_1 + \beta_3 = 0$)	0.043	0.226	0.155	0.119	0.071	0.325

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.

Table A.2.5: Claim of Benefits: Fixed Effects

Dep. Variable	(I) OLS Any Benefit	(II) OLS Any Out-of-Work Benefit	(III) OLS Any HH-level Benefit	(IV) OLS Unempl. Benefit	(V) OLS Family Benefit	(VI) OLS Housing Benefit
A8*PreApr2011	-0.085***	-0.080***	-0.069**	-0.026*	-0.053**	-0.031**
	(0.028)	(0.026)	(0.027)	(0.014)	(0.025)	(0.015)
Observations	4,705	4,705	4,705	4,705	4,705	4,705
R-squared	0.216	0.220	0.223	0.041	0.240	0.039
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared). Country of origin and year dummies included.

Table A.2.6: Claim of Benefits: Placebos

Dep. Variable	(I) OLS Any Benefit	(II) OLS Any Out-of-Work Benefit	(III) OLS Any HH-level Benefit
A8*PreApr2008	-0.001	0.010	0.005
	(0.021)	(0.019)	(0.016)
A8*PreOct2008	0.020	0.020	0.013
	(0.018)	(0.017)	(0.014)
A8*PreApr2009	0.040**	0.031*	0.020
	(0.017)	(0.015)	(0.015)
A8*PreOct2009	0.028	0.024	0.008
	(0.025)	(0.023)	(0.021)
A8*PreApr2010	0.041	0.026	0.005
	(0.028)	(0.027)	(0.015)
A8*PreOct2010	-0.005	-0.011	-0.043
	(0.033)	(0.030)	(0.025)
Observations	3,412	3,412	3,412
Other Controls	Yes	Yes	Yes
Sample	<2 yrs	<2 yrs	<2 yrs

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth. Prior to April 2011 only.

Table A.2.7: Claim of Benefits: Poland Excluded from A8 Group

Dep. Variable	(I) OLS Any Benefit	(II) OLS Any Out-of-Work Benefit	(III) OLS Any HH-level Benefit	(IV) OLS Unempl. Benefit	(V) OLS Family Benefit	(VI) OLS Housing Benefit
A8	0.103***	0.089***	0.089***	0.020	0.072***	0.037*
	(0.027)	(0.026)	(0.026)	(0.015)	(0.025)	(0.018)
PreApr2011	0.003	0.006	0.003	0.002	0.000	-0.005
	(0.011)	(0.011)	(0.016)	(0.007)	(0.014)	(0.004)
A8*PreApr2011	-0.114***	-0.107***	-0.097***	-0.034*	-0.078***	-0.040**
	(0.016)	(0.021)	(0.022)	(0.017)	(0.026)	(0.018)
Observations	2,895	2,895	2,895	2,895	2,895	2,895
R-squared	0.179	0.182	0.183	0.038	0.205	0.042
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs
P-value ($\beta_1 + \beta_3 = 0$)	0.549	0.296	0.621	0.012	0.757	0.370

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth. Poland excluded.

Table A.2.8: Claim of Benefits: Only Poland in A8 Group

Dep. Variable	(I) OLS Any Benefit	(II) OLS Any Out-of-Work Benefit	(III) OLS Any HH-level Benefit	(IV) OLS Unempl. Benefit	(V) OLS Family Benefit	(VI) OLS Housing Benefit
A8	0.071***	0.045**	0.047**	-0.006	0.040**	0.009**
	(0.019)	(0.018)	(0.018)	(0.006)	(0.017)	(0.003)
PreApr2011	0.006	0.006	0.004	-0.000	0.003	-0.008*
	(0.011)	(0.011)	(0.016)	(0.007)	(0.015)	(0.004)
A8*PreApr2011	-0.034***	-0.034***	-0.027*	-0.006	-0.015	-0.011***
	(0.010)	(0.010)	(0.014)	(0.006)	(0.013)	(0.003)
Observations	3,802	3,802	3,802	3,802	3,802	3,802
R-squared	0.205	0.210	0.219	0.014	0.234	0.023
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs
P-value ($\beta_1 + \beta_3 = 0$)	0.040	0.484	0.207	0.004	0.121	0.428

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth. A8 countries but Poland excluded.

Table A.2.9: Claim of Benefits: Other Countries

Dep. Variable	(I) OLS Any Benefit	(II) OLS Any Out-of-Work Benefit	(III) OLS Any HH-level Benefit	(IV) OLS Unempl. Benefit	(V) OLS Family Benefit	(VI) OLS Housing Benefit
Other Europe	-0.046	-0.034	-0.021	-0.031***	-0.039	-0.024
	(0.029)	(0.026)	(0.025)	(0.007)	(0.029)	(0.025)
PreApr2011	0.027**	0.025**	0.028**	-0.008	0.025**	-0.008
	(0.012)	(0.012)	(0.011)	(0.005)	(0.010)	(0.006)
Other Europe*PreApr2011	0.057	0.032	-0.029	0.068*	0.012	-0.025
	(0.045)	(0.028)	(0.022)	(0.038)	(0.014)	(0.021)
Observations	5,112	5,112	5,112	5,112	5,112	5,112
R-squared	0.275	0.281	0.296	0.015	0.334	0.072
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Whole	Whole	Whole	Whole	Whole	Whole

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth. Control group is EU15-born; treatment group is made of natives of 'potential EU members' (n = 695), i.e. Albania, Bosnia-Herzegovina, Croatia, Moldova, Serbia and Montenegro, Turkey, Ukraine, Kosovo.

Table A.2.10: Employment Status: Fixed Effects

Dep. Variable	(I) OLS In Employment	(II) OLS Unemployed	(III) OLS Inactive	(IV) OLS Usual Hrs Worked	(V) OLS Full-Time Job	(VI) OLS Second Job	(VII) OLS Gross Hr Pay
A8*PreApr2011	0.047***	0.001	-0.048***	1.188**	0.019	-0.004	1.426**
	(0.014)	(0.009)	(0.016)	(0.494)	(0.013)	(0.004)	(0.615)
Observations	19,435	19,435	19,435	14,841	15,092	15,072	11,149
R-squared	0.151	0.017	0.157	0.144	0.117	0.010	0.154
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Whole	Whole	Whole	Whole	Whole	Whole	Whole

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared). Country of origin and year dummies included.

Table A.2.11: Employment Status: By Length of Stay

Dep. Variable	(I) OLS In Employment	(II) OLS In Employment	(III) OLS Unemployed	(IV) OLS Unemployed	(V) OLS Inactive	(VI) OLS Inactive
A8	0.088**	0.108***	0.007	-0.013**	-0.094***	-0.095***
	(0.042)	(0.017)	(0.016)	(0.005)	(0.031)	(0.014)
PreApr2011	-0.047	0.014	-0.005	-0.018***	0.051*	0.004
	(0.033)	(0.009)	(0.010)	(0.005)	(0.030)	(0.011)
A8*PreApr2011	0.063*	0.019*	-0.013	0.006	-0.050	-0.025**
	(0.036)	(0.010)	(0.016)	(0.008)	(0.032)	(0.012)
Observations	4,918	16,087	4,918	16,087	4,918	16,087
R-squared	0.133	0.140	0.019	0.009	0.140	0.150
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	<2 yrs	>=2 yrs	<2 yrs	>=2 yrs	<2 yrs	>=2 yrs
P-value ($\beta_1 + \beta_3 = 0$)	0.000	0.000	0.505	0.329	0.000	0.000

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.

Table A.2.12: Claim of Benefits: By Gender

Dep. Variable	(I) OLS Any Benefit	(II) OLS Any Benefit	(III) OLS Any Out-of-Work Benefit	(IV) OLS Any Out-of-Work Benefit	(V) OLS Any HH-level Benefit	(VI) OLS Any HH-level Benefit
A8	0.057**	0.103***	0.020	0.095***	0.016	0.100***
	(0.027)	(0.032)	(0.022)	(0.033)	(0.023)	(0.031)
PreApr2011	-0.015	0.018	-0.018*	0.020	-0.022**	0.020
	(0.009)	(0.020)	(0.009)	(0.020)	(0.009)	(0.025)
A8*PreApr2011	-0.030	-0.086***	-0.013	-0.099***	-0.002	-0.092**
	(0.026)	(0.029)	(0.017)	(0.033)	(0.018)	(0.033)
Observations	2,346	2,572	2,346	2,572	2,346	2,572
R-squared	0.137	0.235	0.127	0.246	0.125	0.256
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs
Gender	Males	Females	Males	Females	Males	Females

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.

Table A.2.13: Employment Status: By Gender

Dep. Variable	(I) OLS In Employm.	(II) OLS In Employm.	(III) OLS Unemployed	(IV) OLS Unemployed	(V) OLS Inactive	(VI) OLS Inactive
A8	0.120***	0.084***	-0.012	-0.005	-0.108***	-0.079***
	(0.029)	(0.021)	(0.009)	(0.008)	(0.023)	(0.018)
PreApr2011	0.001	-0.020	-0.011	-0.018*	0.010	0.038
	(0.017)	(0.021)	(0.008)	(0.009)	(0.016)	(0.023)
A8*PreApr2011	0.024	0.060**	-0.002	0.006	-0.022	-0.065**
	(0.016)	(0.022)	(0.011)	(0.010)	(0.017)	(0.023)
Observations	9,775	11,230	9,775	11,230	9,775	11,230
R-squared	0.132	0.143	0.020	0.011	0.163	0.148
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Whole	Whole	Whole	Whole	Whole	Whole
Gender	Males	Females	Males	Females	Males	Females

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.

Table A.2.14: Labour Supply: By Gender

Dep. Variable	(I) OLS Usual Hrs Worked	(II) OLS Usual Hrs Worked	(III) OLS Full-Time Job	(IV) OLS Full-Time Job	(V) OLS Second Job	(VI) OLS Second Job	(VII) OLS Gross Hr Pay	(VIII) OLS Gross Hr Pay
A8	-1.020	-0.245	0.032**	0.015	0.000	0.007	-8.984***	-4.796***
	(0.831)	(0.483)	(0.015)	(0.019)	(0.005)	(0.007)	(1.240)	(0.811)
PreApr2011	-0.503	0.497	0.007	-0.005	0.002	0.023***	-2.132**	-0.675
	(0.647)	(0.421)	(0.016)	(0.020)	(0.005)	(0.005)	(0.778)	(0.721)
A8*PreApr2011	1.260*	0.502	0.007	0.036	-0.003	-0.006	1.850**	0.351
	(0.677)	(0.527)	(0.017)	(0.022)	(0.006)	(0.006)	(0.841)	(0.673)
Observations	8,298	7,786	8,447	7,903	8,439	7,892	6,049	6,036
R-squared	0.030	0.105	0.033	0.096	0.006	0.007	0.158	0.115
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Whole	Whole	Whole	Whole	Whole	Whole	Whole	Whole
Gender	Males	Females	Males	Females	Males	Females	Males	Females

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: age, age squared, marital status, no. of children, years in the UK, education, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.

Table A.2.15: Claim of Benefits: By Educational Level

Dep. Variable	(I) OLS Any Benefit	(II) OLS Any Benefit	(III) OLS Any Out-of-Work Benefit	(IV) OLS Any Out-of-Work Benefit	(V) OLS Any HH-level Benefit	(VI) OLS Any HH-level Benefit
A8	0.052*	0.082**	0.034	0.063*	0.036	0.063*
	(0.025)	(0.037)	(0.025)	(0.034)	(0.026)	(0.034)
PreApr2011	0.001	0.004	0.002	0.003	0.004	-0.008
	(0.011)	(0.022)	(0.010)	(0.023)	(0.012)	(0.029)
A8*PreApr2011	0.004	-0.096***	-0.007	-0.088***	-0.007	-0.069**
	(0.027)	(0.026)	(0.021)	(0.029)	(0.022)	(0.032)
Observations	2,332	2,586	2,332	2,586	2,332	2,586
R-squared	0.213	0.202	0.220	0.207	0.233	0.207
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs	<2 yrs
Education	High	Low	High	Low	High	Low

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.

Table A.2.16: Employment Status: By Educational Level

Dep. Variable	(I) OLS In Employm.	(II) OLS In Employm.	(III) OLS Unemployed	(IV) OLS Unemployed	(V) OLS Inactive	(VI) OLS Inactive
A8	0.103***	0.100***	-0.009	-0.021	-0.094***	-0.079***
	(0.032)	(0.025)	(0.009)	(0.013)	(0.027)	(0.024)
PreApr2011	-0.023	0.024	-0.005	-0.029**	0.028	0.005
	(0.021)	(0.017)	(0.007)	(0.013)	(0.019)	(0.017)
A8*PreApr2011	0.052**	0.009	0.010	0.006	-0.062***	-0.015
	(0.019)	(0.018)	(0.009)	(0.015)	(0.021)	(0.017)
Observations	9,243	11,762	9,243	11,762	9,243	11,762
R-squared	0.161	0.139	0.010	0.015	0.178	0.144
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Whole	Whole	Whole	Whole	Whole	Whole
Education	High	Low	High	Low	High	Low

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.

Table A.2.17: Labour Supply: By Educational Level

Dep. Variable	(I) OLS Usual Hrs Worked	(II) OLS Usual Hrs Worked	(III) OLS Full-Time Job	(IV) OLS Full-Time Job	(V) OLS Second Job	(VI) OLS Second Job	(VII) OLS Gross Hr Pay	(VIII) OLS Gross Hr Pay
A8	-1.403**	0.726	0.007	0.057***	0.004	-0.001	-8.982***	-3.097***
	(0.646)	(0.702)	(0.018)	(0.012)	(0.006)	(0.006)	(0.797)	(0.934)
PreApr2011	0.545	-0.866	0.018	-0.029	0.015***	0.009*	-1.333	-0.937**
	(0.503)	(0.762)	(0.020)	(0.017)	(0.004)	(0.005)	(0.848)	(0.357)
A8*PreApr2011	0.588	1.547*	0.002	0.052**	0.002	-0.008*	0.886	0.762*
	(0.493)	(0.776)	(0.021)	(0.019)	(0.007)	(0.004)	(0.809)	(0.393)
Observations	7,071	9,013	7,182	9,168	7,173	9,158	5,470	6,615
R-squared	0.141	0.145	0.109	0.124	0.007	0.010	0.140	0.104
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Whole	Whole	Whole	Whole	Whole	Whole	Whole	Whole
Education	High	Low	High	Low	High	Low	High	Low

Note: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by country of origin) in parentheses. Other controls include: gender, age, age squared, marital status, no. of children, years in the UK, mixed-origin HH, lag of unempl. rate (linear and squared), lag of GDP growth.