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# The Impact of Intra-EU Mobility on Immigration by Third-Country Foreign Workers

Emily Farchy

JEL Classification: F22, J61, R23

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**The Impact of Intra-EU Mobility on Immigration by Third-Country Foreign Workers**

**Emily Farchy (OECD)**

*JEL Classification:  
F22, R23, J61*

*This paper is part of the joint project between the Directorate General for Migration and Home Affairs of the European Commission and the OECD's Directorate for Employment, Labour and Social Affairs on "Review of Labour Migration Policy in Europe".*

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*Authorised for publication by Stefano Scarpetta, Director, Directorate for Employment, Labour and Social Affairs, OECD.*

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## ABSTRACT

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This paper examines the impact of the free flow of migrants within the EU on the prospects of labour migrants from third countries - the extent to which free movement migrants and third country migrants are substitutes or complements on the labour market. The first section of this paper looks at the recent trends in migration to the European Union, with a particular focus on trends in the 'big five' recipient countries. The analysis is supplemented by the use of micro data from the EU Labour Force Survey, to examine the extent to which the socio-economic and job characteristics suggest that EU migrants and third country migrants provide a similar labour input. Aggregate migrant flows, however, are driven by both supply and demand factors; a comparison of aggregate trends is therefore insufficient to disentangle the disparate drivers of these trends. A booming economy, for example, will attract labour migrants from both EU and third countries, yet the positive relation between these flows cannot be attributed to a complementarity between these labour inputs but rather to the demand side factors that drive them both. To overcome this endogeneity the second section of this paper utilizes the natural experiment of EU enlargement to isolate the impact of the increased supply of free movement migrants on third country migrant populations. Abstracting in this manner from the economic factors that have played such an important role in determining labour demand in recent years the empirical analysis of this paper identifies a negative impact on the arrivals of third country migrants when labour supply from new EU migrants increases. Furthermore, the lack of identifiable impact on the employment rate of third country migrants is dependent on assumptions regarding the counterfactual employment outcomes of these displaced third country migrants.

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## THE IMPACT OF INTRA-EU MOBILITY ON IMMIGRATION BY THIRD-COUNTRY FOREIGN WORKERS

### Introduction

1. International migration flows to countries European Union countries have seen substantial increases in recent years. While a large part of this increase has been driven by migrants arriving under freedom of movement, the numbers arriving from outside the EU for employment purposes or to reunite with their family have also increased. Yet while these flows have both been increasing in recent years, they have exhibited quite different trends. Indeed, while flows to the EU-15 from other EU-28 countries increased rapidly upon enlargement of the EU. However, these flows also appear to have been more reactive to the onset of the financial crisis in 2008 than were labour migration flows from countries outside the European Union.

2. These disparate trends prompt questions regarding the characteristics of free movement migrants as compared to third country labour migrants, and how these different populations interact on their host country labour market. What is the relationship between the migration of EU citizens for employment, and labour migration from outside the EU? Are the large recent inflows of intra-EU migrants augmenting the demand for migrant labour or merely increasing competition for existing jobs? This paper examines the relationship between free mobility of workers within the EU, and labour migration from outside the EU, it investigates whether these two forms of migrant labour can be considered as complements or substitutes.

3. The impact of flows of immigrants into a given area on those already working in that area, or those planning to move to the area, depends upon a number of factors. It depends, not only upon the size of these flows and the potential outflows they prompt, but also the substitutability of their labour market input, their relative skill distribution, and the degree with which the host labour market is integrated with other markets – such that the extent of local effects are mitigated in the general equilibrium. These multiple forces complicate attempts at causal analysis. Furthermore, immigrants tend to move to places where the growth in local demand can accommodate their labour supply. As a result, simply correlating outcomes – of immigrants and natives or of immigrants according to their characteristics – is unlikely to be informative about causal parameters.

4. Empirical investigation of the complementarity and labour market competition resulting from migrant labour has, thus far, been largely focussed on the substitutability between migrant and native labour. And studies – including those of Card (2001, 2009) and Borjas (2003) – which have examined the causal impact of increasing stocks of immigrants on the labour market outcomes of natives, have reached mixed conclusions.

5. The literature investigating specifically the impact of migration flows on the outcomes of other *migrants* is, however, both more limited and less ambiguous. In their work examining the impact of immigration on Western German labour markets D'Amuri, Ottaviano and Peri (2010) find that while native and migrant workers appear to be imperfect substitutes, new and existing migrants exhibit perfect substitutability. Considering those resident in West Germany for five years or less as 'new' migrants and those in the country for more than five years as 'old' migrants, D'Amuri *et al* find that, a 1% increase in



‘new’ immigrants, increases total employment of all (‘new’ plus ‘old’) immigrants with a similar age and education by just 0.6-0.7%. That is, when ten new immigrants join the German labour force, approximately 3 or 4 existing immigrants lose their job. This suggests that new immigrants are crowding out long-term immigrants. Furthermore, examining the substitutability of labour inputs in the UK, Manacorda, Manning and Wadsworth (2012) show that, while new immigration has had little discernible impact on the wages of the native-born, it reduces the wages of existing immigrants – particularly those with a university education.

6. Why might this be the case? Why, when the labour of new immigrants is not substitutable with that of native workers, is it substitutable with the labour of other migrants? One explanation may be that the skills of migrants are devalued in the local labour markets of their host country. Indeed Manacorda *et al.* (2012), working with UK data, found that much of the incomplete substitutability of immigrants and natives within age and education cells is due to the downgrading of immigrant skills upon their arrival.<sup>1</sup> Such skill downgrading may result from a panoply of sources. It may result from the problems migrants face in having their qualifications recognized, it may result from difficulties in translating their skills and experience to local labour market, it may result from language difficulties or simply discrimination (OECD 2014a). Some of the reasons are likely to be shared between old and more recent arrivals, others – such as language, unrecognized qualifications, and lack of local labour market experience – should not.

7. Yet, in addition to skill-downgrading, there may be other reasons why the substitutability between migrant and native labour differs, on aggregate, from the substitutability between migrants. It may be, and indeed is likely that, the extent of this substitutability depends upon various characteristics of the migrants (such as origin, or education), or the characteristics of the jobs that they hold (such as sector, or location) rather than their status as migrants *per se*.<sup>2</sup> The above literature has been broadly focussed on migrants – abstracting from the reason for which they migrated – for policy purposes, however, the question addressed in this paper is whether mobility (i.e., free movement for employment within the EU) is a complement or substitute for *labour* migration from third countries. Since labour migrants are, on the whole, accepted on the basis of their characteristics, and the characteristics of the job they fill, these characteristics are critical in trying to get to grips with the question of the substitutability between EU free movement flows and flows of third country labour migrants.

8. Third country migrants may arrive in Europe under a number of permit types which, broadly speaking, can be separated into those arriving for work, for family reunification, for humanitarian reasons,

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1 In addition to skill downgrading among migrants, several recent studies investigate the hypothesis that the tendency of immigrants to concentrate in lower-skilled or manual tasks is driven by the tendency of natives to change the skill content of their job in response to immigration. Using O\*Net data on job characteristics Peri and Sparber (2009) note that foreign-born workers specialize in manual-physical occupations while natives move to jobs intensive in communication-language tasks. Amuedo-Dorantes and de la Rica (2008) find similar results using Spanish data. And recent work by Brüker, Jahn, and Upward (2014) and D’Amuri and Peri (2014) takes these ideas to a cross-country setting, to examine how variation in institutional settings affects the occupational mobility of native workers in response to migration inflows

2 Indeed, looking at the UK, Longhi and Rokicka (2012) find that EU migrants arriving after enlargement differ in their outcomes from those that arrived prior to the enlargement of the EU

or to accompany those arriving for work.<sup>3</sup> The degree of policy autonomy to regulate the flows of these third country migrants is dependent upon the type permit under which they arrive. In addition, the characteristics of the migrants – in terms of likelihood and type of employment on arrival, education, or country of origin – are also highly correlated with the type of permit under which they arrive. As a result, while the composition of free movement migrants – in terms of origin and human capital – is largely determined by historical and cultural factors as well as language and geographical proximity, the composition of those third country migrants arriving in EU countries for work purposes is influenced, in addition to these factors, by the policy regime governing the issuance of labour market permits.

9. Almost all EU countries require labour migrants to hold a job offer upon arrival, however, the skill and occupational requirements differ substantially (see Chaloff, 2016). In particular, the issuance of labour migration permits in Sweden, Spain, Portugal, Hungary, Finland, Poland, Greece and Italy impose no skill threshold upon applicants, labour migrants to France, Germany, Belgium, the Netherlands, the UK, Ireland, Denmark, Austria and the Czech Republic, are required to meet certain skill requirements. Clearly, these differing policy rules have a significant effect on the composition of the migrant populations they admit, and hence the effective labour market in which these migrants operate.

10. There has been little work attempting to focus specifically on labour migration. This is largely due to a lack of data, since administrative permit data provides no information on the characteristics of the migrants while the survey data is largely unable to provide information on the reason for migration. However, labour migration from third countries is subject to regulation, and in EU countries is almost entirely subject to employer demand – that is, an employer must offer a qualifying employment contract to the worker before the latter is granted admission. As a result, the compositional characteristics of *labour* migrants from third countries are likely to differ quite substantially from the compositional characteristics of *all* migrants from third countries (including humanitarian and family migrants). Furthermore, while labour migration is the component of migration over which policy makers have most control, it is generally not the largest component. As such, the results of studies that do not distinguish between migrants according to the reason for their migration cannot be broadly applied when assessing the potential impacts on labour migrant flows.

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3 The permanent-type migration used in the OECD International Migration Database does not include students

11. In an effort to address this gap and to unpack the mechanisms behind the substitutability of free movement migration and labour migration from third countries, this paper will focus on the impact of the increase in migrants arriving in the EU through free movement (see Box 1) following the recent EU expansion. The paper proceeds as follows and is organised into two parts, part A, based on administrative permit data, describes the trends in recent migrant flows across some of the large EU15 migrant recipient countries, unpacking – to the extent possible given the available data – some of the characteristics of these migrants and discussing the potential impact on their substitutability. Part B then uses labour force data from across the EU to undertake a cross country analysis of the impact of migrants from the EU’s new member states on the arrivals of migrants from outside the EU and their employment outcomes.

### Box 1. EU Freedom of movement, enlargement and transitional arrangements

The free movement of workers has, since 1957, been one of the fundamental freedoms of the then European Economic Community. Since then free movement of workers has been extended to the 15 EU member states, three countries within the European Economic Area and, more recently, beginning in 2004, ten new member states (eight Central and Eastern European countries plus Cyprus<sup>4</sup>, and Malta). The most recent expansion of the EU, in 2007, extended freedom of movement of workers to both Bulgaria and Romania.

While the free movement of workers was applied immediately for citizens from Cyprus and Malta, many countries chose to implement transitional arrangements to postpone the free movement of salaried workers from NMS8, NMS-2 and Croatia for up to seven years following enlargement.

These transitional provisions were divided into three different phases:

In the two years following enlargement member states were able to apply national rules on access to their labour markets;

At the end of these two years member states were able to either, apply national rules for a further three years, or implement the European Community rules regulating free labour mobility.<sup>5</sup>

At the end of the five year period, member states were able to prolong transitional arrangements for a final two years if, by opening their labour markets, they risked serious labour market disturbance.

What stands these transitional rules apart from those governing previous enlargements is that in the two most recent enlargements individual countries have been left to decide on whether or not they adopt the transitional arrangements. As a result countries have opened their labour markets at different times. Sweden, the United Kingdom and Ireland were the first to open their labour markets to individuals from the NMS8, and did so immediately following enlargement in 2004.<sup>6</sup> Germany and Austria were the last, and did not lift restrictions completely until 2011.<sup>7</sup>

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4 Note by Turkey: The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

5 Countries applying the Community rules at this point were allowed, in case of labour market disturbance, to reintroduce work permits temporarily. Indeed, between December 2012 and December 2013, Spain re-implemented controls on migrants arriving from Romania.

6 Sweden, the United Kingdom and Ireland left certain restrictions in place (e.g. work permits were only issued for one year in the beginning, and if migrants lost their jobs, the resident permits could be withdrawn). In Denmark, work permits were granted to workers from the NMS who could prove that they had a job meeting regular standards with regard to wage and working conditions. Similar rules were applied in Iceland and Norway. (Labour mobility within the EU in the context of enlargement EU 2009)

### Box 2. Data Sources and Limitations

In examining the relationship between the migration of EU citizens for employment, and labour migration from outside the EU, it is first necessary to identify those migrants, irrespective of their origin, who migrated primarily for reasons of employment. There are a number of potential sources of data on migrant arrivals. Most, however, have a number of drawbacks – both in the extent to which they are *useful* in examining the relevant questions, and to the extent that they are *reliable* in providing an accurate picture.

In the first place, there is administrative data. Administrative data from residence permit registers form the basis of the OECD International Migration Database and are a key component of the analysis in migration trends in the following section. These permit data have the major benefit that they provide information on the reason for migration such that it is possible to isolate labour migration from other forms of migration – such as migration for family or humanitarian reasons. However these administrative permit data are not linked to other databases containing socio-economic characteristics, thus while it is possible to remark upon trends in migration, and in the composition of migrant flows, it is difficult to say much about their employment outcomes.<sup>8</sup>

A second source of migration data is survey data. The primary surveys providing comparable data across Europe are the EU SILC and the EU LFS. Given that the longitudinal EU SILC data provide no information on country of birth, both of these surveys are cross-sectional. While these surveys contain a variety of socio-economic characteristics and information on labour market outcomes that can enable a richer analysis of the correlates of integration outcomes, and how these differ across migrant groups, with the exception of the 2008 ad hoc module of the EU LFS, they do not contain information on the reason for entry of the migrant.

The extent of analysis based upon the EU LFS data is limited largely by the relatively small samples of migrants. This problem is compounded if trying to examine the flows of migrants as the sample is further limited to only those arriving in a given year. As such the data is no longer necessarily representative of the true population. Furthermore, immigrants are likely to be underrepresented in survey data particularly those in their early years of residency.<sup>9</sup> A frequent approach to dealing with the small sample sizes is to aggregate across countries (Lemaître 2014), or to pool annual surveys across years (Gagnon 2013), these approaches, however, bring a host of alternative biases.

*Notes:* A number of recent studies (Gagnon 2013, Lemaître 2014) have tried to examine correlations between a migrant characteristics and their reason for migrating – the former using additional LFS questions to develop a proxy for family migrants, the latter through analysing different cohorts from the LFS 2008 ad hoc module. In defining what constitutes a migrant different concepts are often employed. These include length of stay, state of citizenship or country of birth. Each refers to a very different set of people. In this paper we classify immigrants as those individuals whose country of birth is not equal to their country of residence.

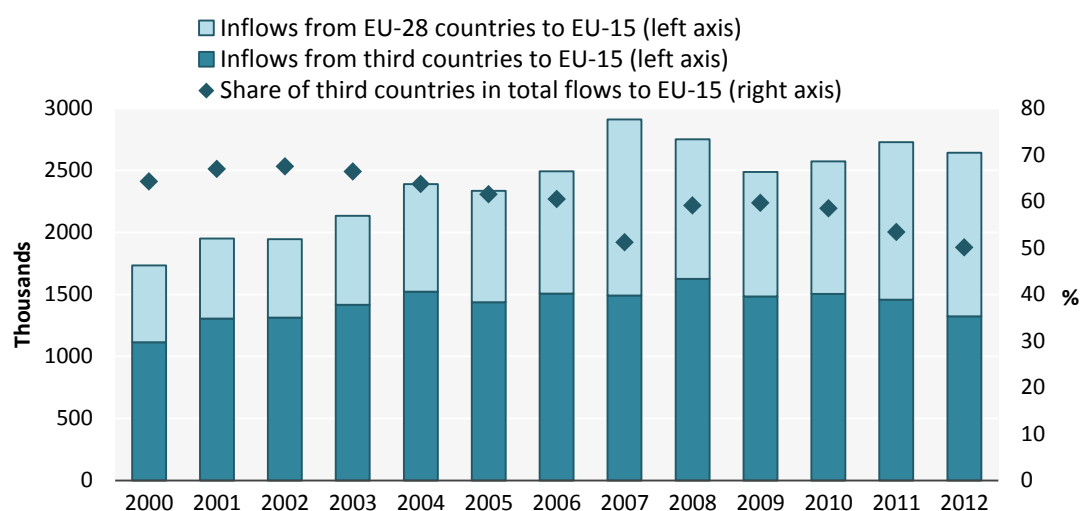
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- 7 The transitional arrangements do not affect the fundamental right of EU citizens to move and reside freely within the EU, under Article 21 of the Treaty of the Functioning of the European Union (TFEU). They do not apply to self-employed workers who are established or provide their services within the EU and finally there are no transitional arrangements for the application of EU law on coordination of social security systems
- 8 Administrative registers in some Nordic countries are linked together and to survey data via a personal identification number. As a result socio-economic information can be examined alongside administrative data for all individuals – including migrants. The Canadian Longitudinal Immigration Database (IMDB) links administrative records on immigration – including category of migration, on employment, and on taxation.
- 9 Seasonal workers, a group which accounts for many immigrants from the New Member States are particularly likely to be under-represented.

## Part A: Trends in migration flows

12. In 2000, according to national data, EU15 countries received 1.7 million permanent migrants annually. This number gradually increased peaking, in 2007, at 2.9 million. At the onset of the crisis however, the numbers of migrants entering the EU15 contracted (falling by 15% in just two years) such that, despite a limited recovery in recent years, in 2012 EU15 countries received 2.6 million international migrants – 10% below the 2007 peak.

13. Taken across the EU as a whole, the majority of these international migrants originate from countries outside the EU-28 – so called third countries migrants (TCM). On average, since 2000, flows from these third countries have numbered more than 1.4 million per year and have remained relatively insulated from the effects of the financial crises (see Figure 1). The remainder of migrants to the EU arrive from other EU-28 countries. The magnitude of the flows of these free movement migrants appears to have been more reactive (see Figure 1). These differences in reactivity are likely to be driven both by disparities in the ease of the migration process and, at the same time, by compositional effects and the reason migrants chose to migrate (for example labour migrants are likely to be more reactive to the vagaries of labour market demand than are those migrating for family or humanitarian reasons).

Figure 1. Migration flows to EU-15 by origin



Source: OECD International Migration Database

14. Compositional effects are likely to have a significant impact upon the degree of substitutability of the labour market input of different migrant populations. As a result, to the extent that compositional effects differ across EU countries, the degree of substitutability is likely to differ. The EU countries receiving the largest numbers of all recent migrant flows are Germany, the UK, France, Italy and Spain

who, in 2012, received 11%, 8%, 7%, 7%, and 6% of total international migrant flows respectively (OECD 2014a). The disparate patterns in the composition of international migrant flows – in terms of permit type and in terms of country of origin - across the big 5 destination countries, are discussed below. However it is important to bear in mind that, even within permit type, the rules governing the issuance permits differ quite significantly across these ‘big five’ destinations (see Table 1 for an outline of the disparities in the barriers to labour migration). As a result, the analysis that follows will – to the extent possible with the data – unpack the composition of migrant flows by permit type, by country of origin and, where possible, by the employment characteristics of those arriving for work.

**Table 1. Barriers to labour migration in different EU countries**

	Job offer	Skill / Occupation Threshold	Labour market test	Shortage occupation list	Numerical limit	Seasonal programme	work
Spain	Yes	No	Yes	Yes	No	Yes	
Italy	Yes	No	Yes	No	Yes	Yes	
France	Yes	Yes	Yes	Yes	No	Yes	
Germany	Yes	Yes	Yes	Yes	No	Yes	
United Kingdom	Yes	Yes	Yes	Yes	Yes	No	

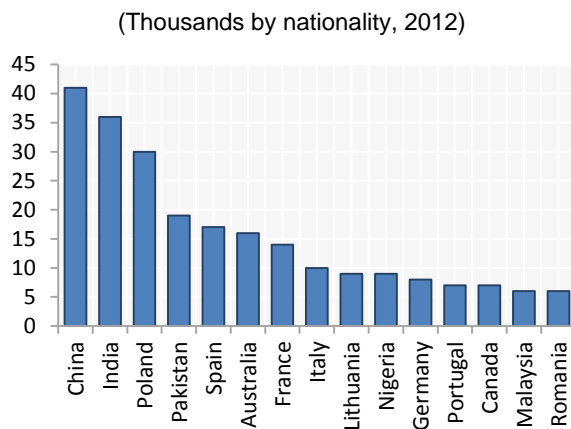
Source: Chaloff (2015)

15. In the early years following enlargement, the UK and Ireland absorbed the majority of new free movement arrivals, with the UK alone absorbing around 50% of all NMS8 arrivals to the EU15 between 2004 and 2007. In contrast, Austria and Germany – where transitional arrangements were still in place – experienced only a modest increase in the number of foreign residents from the NMS8. More recently, in Germany the number of free movement migrants – moving from within the EU – has been increasing rapidly, while the increase in the numbers of labour migrants from third countries has been more moderate. At the same time in France, it is the numbers of labour migrants that have seen a disproportionate increase.

### *The United Kingdom*

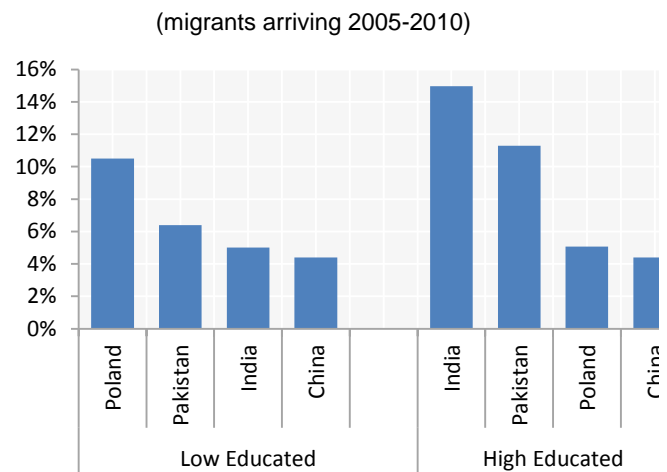
16. With an inflow of over 290,000 permanent migrants in 2013, the UK is among the three largest recipients of new migrants in the OECD (only the US and Germany receive more) and, again behind only the US and Germany. The proportion of migrants originating from elsewhere in Europe is among the lowest in the European OECD (see Figure 2) yet between 2005 and 2010 close to 15% of all highly educated migrants to the UK originated from Poland compared to just 11%, 5% and 4% respectively from the other major sending countries India, China and Pakistan (Figure 3). Migrants living in the UK are, on the whole, among the most highly skilled in the OECD and 46% hold a tertiary education (compared with just 33% of the native population).

**Figure 2. Migration flows to EU-15 by origin**



Source: OECD International Migration Outlook 2014

**Figure 3. Recent migrants to the United Kingdom by level of education and origin**



Notes: Recent migrants are those resident in the UK 5 years or less

Source: Database on Immigrants in OECD Countries 2010/11.

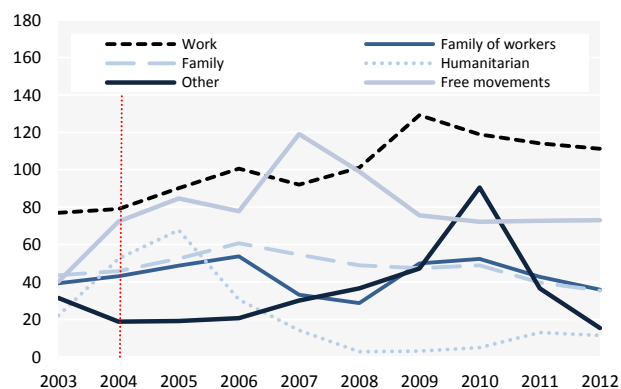
17. In Figure 4, the estimates for inflows into the UK between 2000 and 2012 are broken down by reason for migration (Panel A) and by origin of migrant (Panel B). The number of *free movement* migrants arriving in the UK from elsewhere within the EU/EFTA rose rapidly between 2003 and 2005, and again between 2006-2007 (Panel A) - the first of these periods corresponds roughly to the EU enlargements of 2004 (when 8 new member states were welcomed to the union). As one of only three countries to grant migrants from the eight new member states (NMS8) open and immediate access to their labour markets upon the enlargement of the EU in 2004, the UK saw net migration increase by 66% (from 148,000 to 245,000) between December 2003 and December 2004. At least two thirds of this increase has been attributed to migrants from NMS8 countries (Clark, Drinkwater and Robinson 2014) with the largest number coming from Poland. In the case of the second European enlargement (to encompass Romania and Bulgaria) the UK introduced lengthy transitional arrangements, and indeed Figure 4 panel B suggest that flows from the NMS-2 remained relatively low.

18. In 2008 the UK government re-organised its policy for third-country *labour* migration, introducing a new Points Based System (PBS). The scheme, which aims to increase the average skill level of migrants from outside the EEA, awards points for educational qualifications and language ability, and is targeted towards shortage occupations. The number of migrants moving to the UK from outside the EEA for work reasons has fallen between 2009-2012, possibly an effect of the introduction of the PBS. Nevertheless, those moving to the United Kingdom for work accounted for the largest number of migrants throughout most of the period 2000-2012.

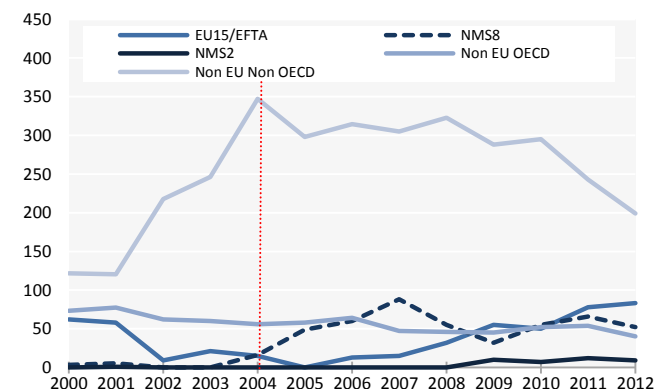


Figure 4. Flows to the United Kingdom, 2000-2012, thousands

A. By reason for migration



B. By origin of migrant



Source: International Migration Database

Notes: Dashed red line represents year of relaxation of transitional agreements

19. Looking separately at inflows to the United Kingdom according to the country of birth of the migrant sheds further light on these patterns. In panel B of figure 4, migrants to the UK are aggregated into five groupings according to their country of birth: (i) those born in EU15/EFTA countries, (ii) those born in the eight new member states that joined in 2004 (NMS8) (iii) migrants born in the accession countries that joined in 2008 (NMS2), the final two categories are made up of those born outside the enlarged EU area – both (iv) those that are OECD countries and (v) those that are not. The most noticeable change over this period is observed in the inflows of migrants from NMS8 countries in the years between 2003 and 2007 which increased by close to 100,000 over the four years. At the same time, while the numbers of migrants arriving from third countries outside the OECD area fell by close to 50,000 around the time of the first European enlargement, inflows from OECD countries outside the EU area have remained relatively constant. Migrants arriving from non EU OECD countries largely enter the UK as labour migrants. The relative robustness of the flows of these migrants therefore provides some indication that labour migrants may have been relatively insulated from the supply side shock.

20. Aside from this, examining aggregate migrant stocks and flows tells us little about the labour market outcomes of these migrants upon their arrival, nor does it give us much indication regarding whether increased inflows of migrants from the EU area are likely to crowd out the demand for the labour of migrants from outside the EU. To obtain a more complete picture of how migration to the UK has evolved in recent years – and to examine the extent to which migrants from within the EU are performing

similar roles to those from without – we now turn to an examination of the labour market characteristics of these migrants.<sup>10</sup>

**Table 2. Profile of recent labour migrants to the United Kingdom**

(Migrants arriving between 2004-2010 aged 15-64 by origin, percent)

United Kingdom			
	EU15/EFTA	NMS12	Third
<b>Low-skilled Occupations</b>	7.88	42.26	16.06
<b>Intermediate Occupations</b>	31.36	47.21	38.49
<b>Prof/Man Occupations</b>	60.76	10.53	45.44
<b>Over-educated</b>	17.84	50.4	29.91
<b>Agriculture</b>	9.12	22.15	6.51
<b>FIRE</b>	21.31	4.49	16.12
<b>Capital</b>	49.27	15.03	41.38

*Notes:* Migrant flows approximated by the stock of migrant captured in with the appropriate number of years of residence (i.e. flows in 2004 approximated using all those in the 2006 LFS with two years of residence). Labour migrants proxied by those migrants who were in employment in their first year of arrival. EUROSTAT Labour Force Survey data does not allow for a finer disaggregation in country of origin than NMS12 – which includes migrants from the NMS10 and NMS2 enlargements. FIRE refers to the financial intermediation and real estate sector and Capital refers to the proportion of migrants located in the capital city. The term over-education refers to those migrants whose education level is above that usually required in their job.

*Source:* EUROSTAT Labour Force Surveys 2006, 2007, 2008, 2009, 2010, 2011, 2012.

21. An examination of the occupation levels of recent labour migrants to the UK (Table 2 rows 1-3) reveals that, while the majority of migrants from the 12 new member states of the European Union were employed in low and medium skilled occupations – 42.3% and 47.2% respectively – the numbers from the other EU15/EFTA countries, and countries outside the European Union, working in low skill occupations was significantly lower – just 8% among EU15/EFTA migrants and just 16% among migrants from third countries. Turning to the sectors in which new migrants to the UK are working (Table 2 rows 5-6) it can be seen that, again, recent migrants from the new member states exhibit quite different patterns to those from the rest of the EU and those from third countries outside the enlarged EU. That is, while over 22% of migrants from the new member states are working in agriculture and fisheries, the equivalent figure among EU15/EFTA migrants, and those countries outside the EU is less than 10%. A similar pattern is observed in reverse for those migrants working in financial intermediation and real estate (FIRE). These occupational and sectoral disparities are consistent with the findings of Manacorda et al (2012) and may indicate that NMS migrants may not be competing for the same jobs as those labour migrants from countries outside the EU15. Indeed, comparing the geographic dispersion of new inflows to the UK, they may also be operating in different local labour markets – while over 40% of migrants from EU15/EFTA

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10 This analysis is primarily undertaken using Labour Force Survey (LFS) data. As a national survey, this data captures migrant stocks and not flows. Migrant flows are approximated using the stock of migrant with the same number of years of residence (ie flows in 2004 approximated using all those in the 2006 LFS with two years of residence). Furthermore since, with the exception of the 2008 ad hoc module, LFS data does not capture reason for migration, labour migrants are proxied in the analysis that follows using those migrants who were in employment in their first year after arrival.

and outside the EU work in London, only 15% of migrants from new member states work in the capital (Table 2, row 7)

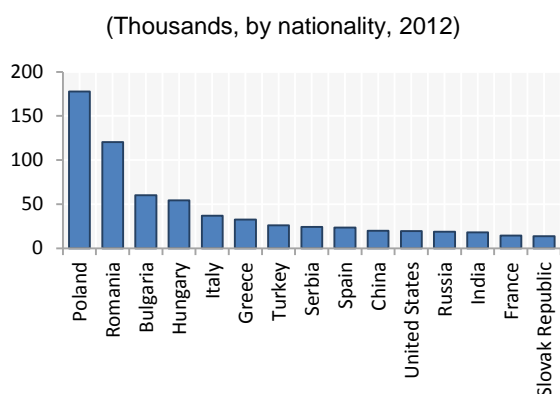
22. However, at the same time, the degree of over-education (Table 2 row 4) appears to be the highest among recent labour migrants from the 12 new member states, over half of whom are working in jobs which would not usually require their level of education. Over-qualification among labour migrants from third countries falls under 30%. High over-education rates among migrants from the new member states may be partially explained by a lower level of language proficiency. Labour migrants from third countries, on the other hand, are selected on the basis of their skills, making a better employment match more likely. In addition, given that labour migrants are recruited from outside the country they are less inclined to accept a position for which they are over-qualified (see OECD 2014c).

23. The concentration of NMS migrants in low/medium skilled occupations, in the agricultural sector and in less urban areas, suggests that NMS migrants in the UK are not, currently, operating in the same labour markets as migrants from the EU15 and third countries. However, the dependence of over-qualification on migrant origin implies that the potential labour market effects of increased inflows of new member state migrants may extend beyond those at the same qualification level.

### Germany

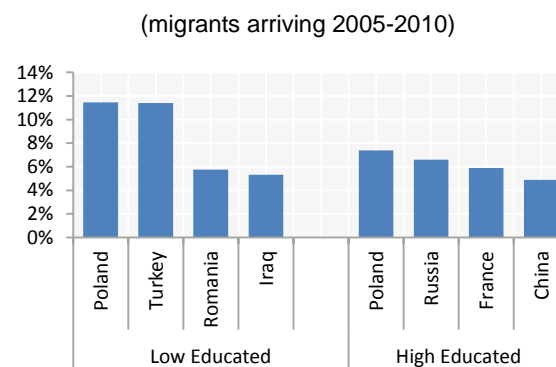
24. Behind the United States, Germany is the country receiving the second largest annual inflows of international migrants. The number of migrants arriving in Germany annually is more than double the numbers arriving in any other European country every year (OECD, 2014a). While those originating from Turkey and Poland have made up the majority of the low educated arrivals in recent years, Germany’s highly educated migrants are relatively diverse in their country of origin (Figure 5).

**Figure 5. Inflows of foreign population into Germany**



Source: OECD International Migration Outlook 2014

**Figure 6. Recent migrants to Germany by level of education and origin**



Notes: Recent migrants are those resident in Germany 5 years or less

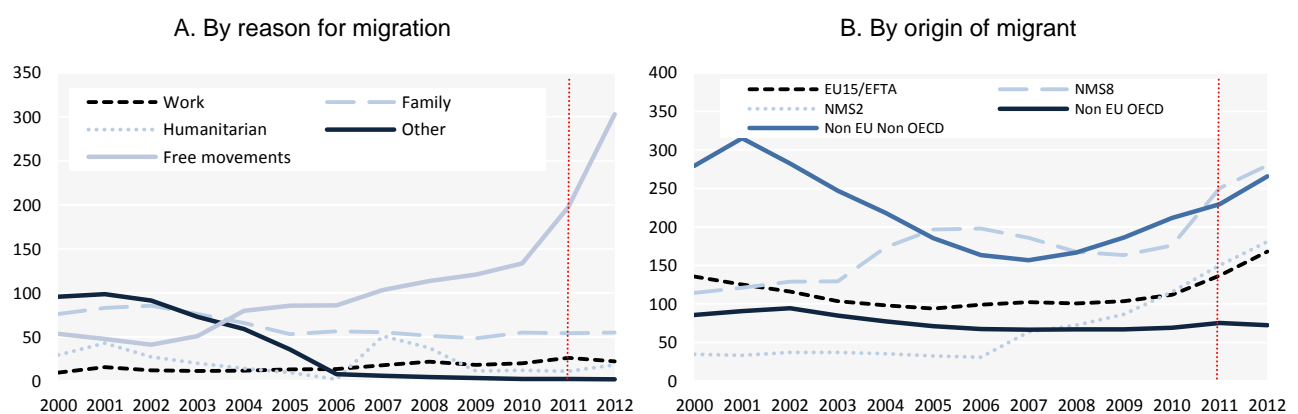
Source: Database on Immigrants in OECD Countries 2010/11.

25. Analogous to the UK, Figure 7 below breaks down the estimates for inflows into Germany between 2000 and 2012 first by reason for migration (Panel A) then by origin of migrant (Panel B). The

number of *free movement* migrants arriving in Germany over this period has seen a substantial increase. Alongside Austria, Germany is the only EU-15 country to have maintained, until mid-2011, restrictions on the employment of nationals of the 8 new member states who joined the union in 2004. Despite this, however, inflows of migrants arriving in Germany through free movement increased significantly following the 2004 enlargement, rising from just over 51,000 in 2003 to close to 80,000 in 2004. Furthermore, when migrant inflows are separated according to country of origin, it becomes clear that the increase in the number of European migrants to Germany over this period is driven by mobility from the 8 new member states. Indeed the number of migrants arriving from these countries increased by over 50% between 2003 and 2005.<sup>11</sup> That said, the most significant increase in arrivals of free movement migrants in Germany comes following the relaxation of transitional arrangements in 2011.

26. Over the same period, 2000-2012, *labour* migrants have remained at relatively constant low levels. With the exception, since 2005, of the recruitment of highly-skilled workers, labour migration from non-EC countries is largely disallowed in Germany. As a result, labour migrants from non OECD countries are concentrated in high-skilled jobs.

**Figure 7. Flows to Germany, 2000-2012, thousands**



Notes: Dashed red line represents year of relaxation of transitional agreements

Source: International Migration Database

27. Since 2011 when German borders became fully open to migrants from the new member states, the numbers of migrants from these countries has increased dramatically, from 176 thousand in 2010 to 266 thousand in 2012 – an increase of close to 60%. This increase was accentuated by the strength of the German economy at the time of the ending of transitional arrangements, and indeed the inflow of migrants from elsewhere (both from within the European Union and without) were also increasing at this time,

11 Despite the restrictions in place in Germany at the time of enlargement, self-employed workers from the NMS8 were allowed to settle in Germany and run a business (as long as they didn't employ workers from their home country). The sudden increase in migrants from the new member states suggests that many may have taken this route and indeed Brenke, Yuksel and Zimmerman (2009) find that half of the employed NMS8 migrants are self-employed.

suggesting that, as in the UK, labour migrants may have been insulated from the supply side shock prompted by EU enlargement. In Germany the impact of increasing flows of free movement migrants appears to have had only a limited impact on the flows of labour migrants from third countries outside the free movement area (Panel A). The primary reason for this apparent lack of relation may well be that the labour migration channel in Germany remains limited and concentrated among the highly-educated.<sup>12</sup>

### *Spain*

28. Inflows of migrants to Spain, at 336 100 persons in 2012, have seen a substantial decline since the country was hit heavily by the financial crisis. Furthermore, while inflows fell by close to 20% between 2011 and 2012, the outflow of foreigners increased, leaving net migration in 2012 at its lowest level in a decade. Spain has seen the largest increase in unemployment in the OECD area since the start of the economic crisis – and the unemployment rate among foreign residents reached 36.5% by the end of 2012. Indeed, disaggregating migrant inflows by their reason for migration (Panel A) and by their origin (Panel B), Figure 8 highlights the extent to which the trends in flows of international migrants to Spain are correlated. EU nationals moving under free movement rules have made up the majority of flows to Spain and labour migrants from third countries have, in the past, contributed less. However, in recent years the number of migrants of migrants arriving for work purposes has come close to the number arriving under freedom of movement (see Figure 8 Panel A).

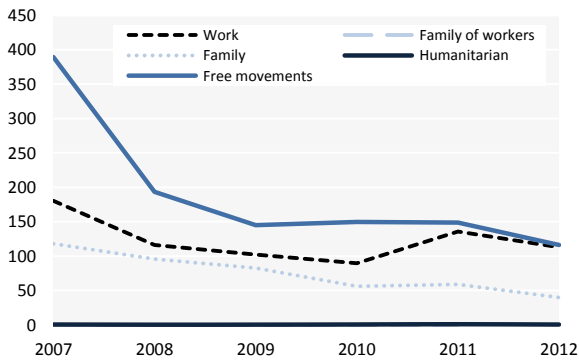
29. In addition to economic drivers, the decline in labour migrant inflows is partly due to policy changes in labour migration management. Since 2007, first-time labour permits to non-EU nationals arriving from abroad have continued to decline, hiring non-resident foreign nationals has been restricted, and the use of shortage occupation lists for recruiting non-resident foreign nationals has been reduced. In this sense the substitution between EU migrants and those from third countries is of a different kind - it is political rather than market-based.

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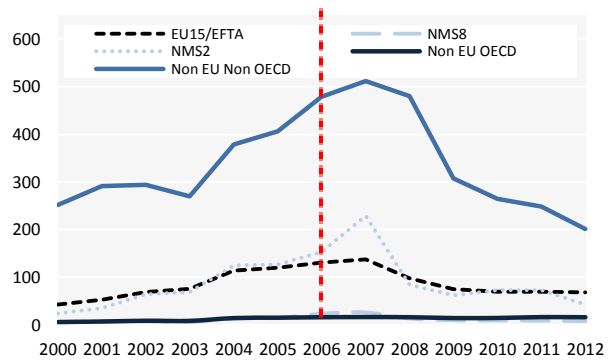
12 The occupational and sectoral disaggregations undertaken above for the United Kingdom are, unfortunately, not possible in the case of Germany for which the ‘country of birth’ variable is not coded in the EU LFS data. However, on the basis of administrative data, Brenke et al (2009) find that the average attainment among recent male NMS8 migrants is lower than that among any other immigrant group from non-EU countries.

**Figure 8. Flows to Spain, 2000-2012, thousands**

**A. By reason for migration**



**B. By origin of migrant**

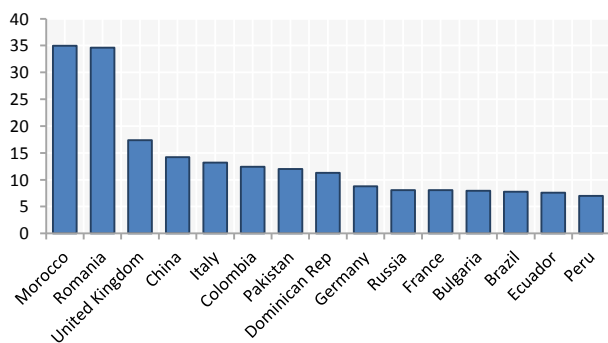


Notes: Dashed red line represents year of relaxation of transitional agreements  
 Source: International Migration Database

30. While recent low-skilled migrants in Spain are relatively concentrated in terms of their country of birth (with migrants from Morocco and Romania both making up close to one fifth of Spain’s recently arrived low-skilled migrant population), among those highly-educated migrants arriving in Spain in the past five years, the origin country is much more diverse (Figure 10). While the large number of migrants from Morocco largely contribute to Spain’s low skilled population, those from Romania also make a large contribution to the highly-educated population.

**Figure 9. Inflows of foreign population into Spain**

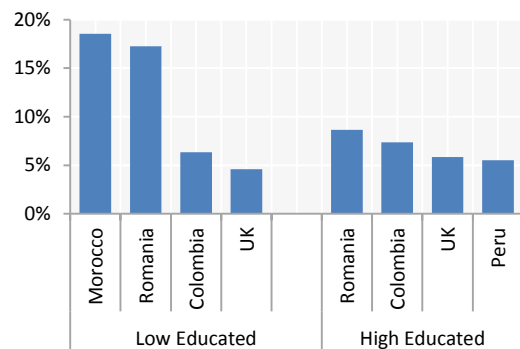
(Thousands, by nationality, 2012)



Source: International Migration Outlook 2014

**Figure 10. Recent migrants to Spain by level of education**

(migrants arriving 2005-2010)



Notes: Recent migrants are those resident in Spain for 5 years or less

Source: Database on Immigrants in OECD Countries 2010/11.

31. Turning to the characteristics of labour migrants to Spain (Table 3) as extracted from the EU LFS data, it can be seen that migrants from the EU new member states and those from third countries are heavily concentrated in low and intermediate skilled occupations. Indeed, in Spain only those migrants arriving from EU15/EFTA countries are represented to a significant degree in higher-skilled occupations – less than 10% of third country labour migrants work in professional or managerial occupations, and among NMS migrants, at 6.6%, this figure is lower still. This occupational distribution contrasts starkly to that observed in the UK (see Table 2) where third country migrants are heavily concentrated in professional occupations. The similarities in employment patterns among migrants to Spain from the new member states and those from third countries is, most likely, partly due to the lack of educational requirements on labour permits in Spain.

**Table 3. Profile of recent labour migrants to Spain**

(aged 15-64 by origin, those arriving 2004-2010, percent)

Spain				
		EU15/EFTA	NMS12	Third
<b>Low-skilled Occupations</b>		24.77	50.14	48.85
<b>Intermediate Occupations</b>		39.8	43.22	42.04
<b>Prof/Man Occupations</b>		35.43	6.64	9.1
<b>Over-educated</b>		33.62	65.09	57.97
<b>Agriculture</b>		..	18.65	5.33
<b>FIRE</b>		9.65	..	2.81
<b>Capital</b>		37.86	35.35	41.87

Notes: Migrant flows approximated by the stock of migrant with the same number of years of residence (ie flows in 2004 approximated using all those in the 2006 LFS with two years of residence. Labour migrants proxied by those migrants who were in employment in their first year of arrival. Cells containing an insufficient number of observations are marked as “..”

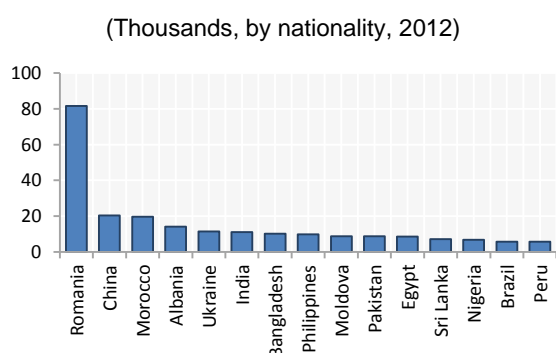
Source: EUROSTAT Labour Force Survey.

32. Initial inspection of the degree to which the labour market characteristics of migrants in Spain vary with their origin suggests that, in Spain, the labour market in which migrants are working may be less dependent on their origin. That is, recent free movement migrants from the NMS's may well be more likely to substitute for the labour of migrants from third countries.

### *Italy*

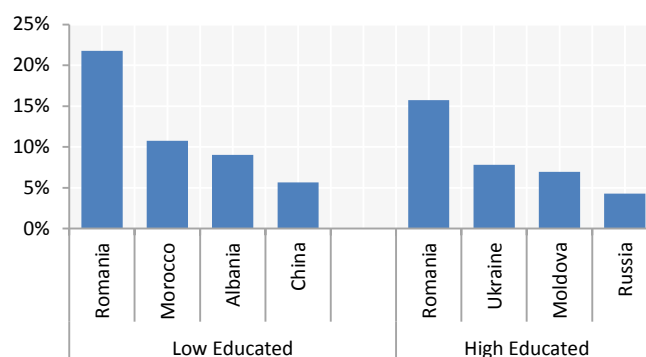
33. Migrants to Italy come from a wide variety of origin countries, and while in recent years large inflows have arrived from Romania, large numbers also arrive from third countries such as China, Morocco, Albania and Ukraine (Figure 11) The enlargement of the EU to Romania and Bulgaria resulted in an intensification of flows from those two countries over the late 2000s. Aside from Italy's Romanian migrants who are situated across the skills spectrum, many highly-educated migrants to Italy in recent years come from the former Soviet Countries (Figure 12).

**Figure 11. Inflows of foreign population into Italy**



Source: International Migration Outlook 2014

**Figure 12. Recent migrants to Italy by level of education**  
(migrants arriving 2005-2010)



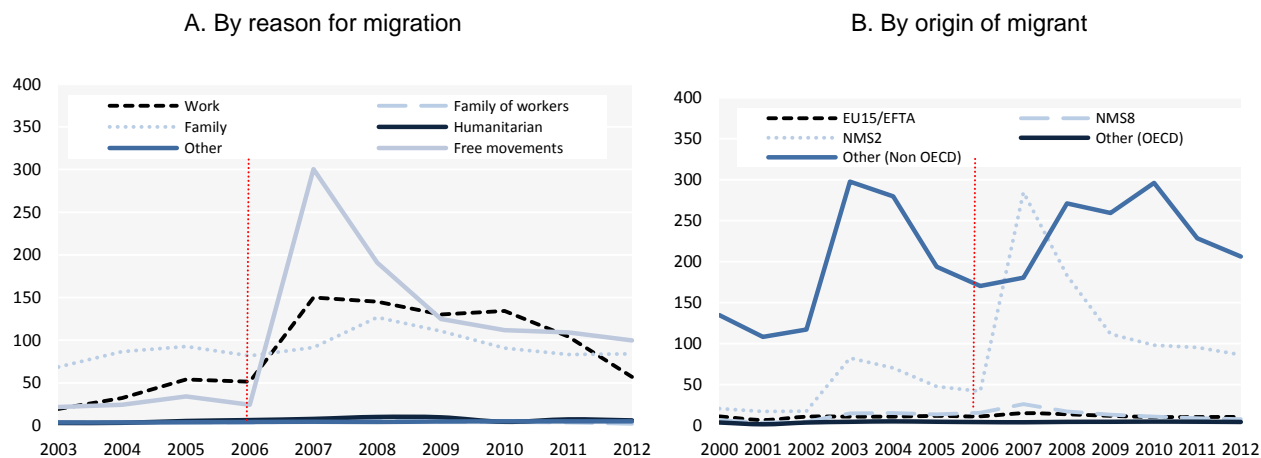
Notes: Recent migrants are those resident in Italy 5 years or less  
Source: Database on Immigrants in OECD Countries 2010/11.

34. Following the relaxation of those transitional arrangements covering the EU enlargement to the NMS10 in July 2006 the flows of *free movement* migrants to Italy increased dramatically (Figure 13 Panel A). However, when these flows are disaggregated according to country of origin this increase was driven largely by increasing flows of migrants arriving from Romania (NMS2) in 2007, many of whom may have been in Italy without registering prior to 2007, rather than from the NMS10. Over the same period flows of migrants arriving for work purposes from outside the EU were also increasing – suggesting that the trend may have been driven by labour demand factors.

35. Immigration flows to Italy have been declining since the onset of the economic crisis in 2008 and in 2012 the Italy’s inflow of long-term residents amounted to 321 300 persons – 10% less than the previous year. This decline in flows has been particularly stark among free movement migrants (see Figure 13 Panel A) and particularly so among those from Romania, but has also been marked among those migrants originating from non-OECD countries outside the European Union (Panel B). Entry to Italy for employment is mostly through a government quota, and in both 2011 and 2012 the quota for low-skilled foreign workers was limited to seasonal workers and certain specific categories. These policy changes may partially explain the fall in non-EU work migrants in recent years (Figure 13 Panel A).



**Figure 13. Flows to Italy, 2000-2012, thousands**



Source: International Migration Database

Notes: Dashed red line represents year of relaxation of transitional agreements

36. In terms of the concentration of migrants in certain occupations and sectors, as with Spain, those labour migrants from the 12 New Member States do not appear to differ substantially from those labour migrants from third countries. Indeed, while EU15/EFTA migrants are largely concentrated in professional and managerial occupations, those from NMS12 and third countries are largely concentrated in the low- and intermediate-skilled occupations (Table 4).<sup>13</sup> That said, however, migrants from outside the European Union are marginally more likely to be working in jobs for which they are over-educated (while 54% of third country labour migrants captured in the EULFS were overeducated, among NMS12 workers this figure was 37%).

37. Immigrants in Italy have settled widely throughout the country, especially in the Centre and North. While Rome, Milan and Turin have always represented the primary places of residence in absolute terms, middle and small size cities have attracted a high share of migrants compared with many OECD countries. The proportion of migrants from NMS12 located outside of Milan and Rome, however, is significantly higher than those among third countries. At the same time the proportion working in agriculture is also significantly higher

13 The relatively low numbers of migrants from EU15/EFTA countries taking up low and intermediate skilled occupations in Italy means that the numbers are not sufficiently large to satisfy the EULFS anonymization requirements.

**Table 4. Profile of recent labour migrants to Italy**

(aged 15-64 by origin, those arriving 2004-2010, percent)

	Italy		
	EU15/EFTA	NMS12	Third
<b>Low-skilled Occupations</b>	..	39.07	45.71
<b>Intermediate Occupations</b>	..	56.11	50.37
<b>Prof/Man Occupations</b>	56.92	..	3.92
<b>Over-educated</b>	12.84	37.38	53.69
<b>Capital</b>	..	18.2	25.46
<b>Agriculture</b>	..	20.62	14.67

Notes: Migrant flows approximated by the stock of migrant with the same number of years of residence (i.e. flows in 2004 approximated using all those in the 2006 LFS with two years of residence. Labour migrants proxied by those migrants who were in employment in their first year of arrival. Cells containing an insufficient number of observations are marked as “..”

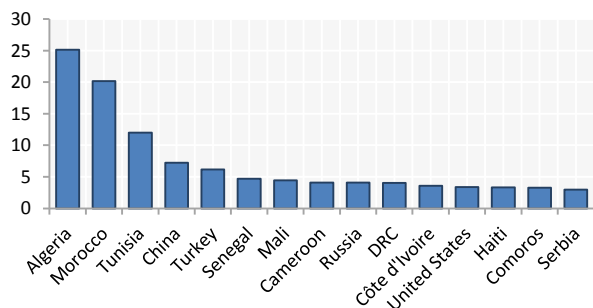
Source: EUROSTAT Labour Force Survey.

38. Similarities in the profile of labour migrants to Italy from new member state countries and from third countries suggests that, as in Spain, the labour of third country migrants and migrants from the new member states may indeed act as substitutes for one another. As in Spain, this degree of substitutability is no doubt partially due to the lack of occupation and education conditions placed upon third country nationals applying for work permits in Italy.

### **France**

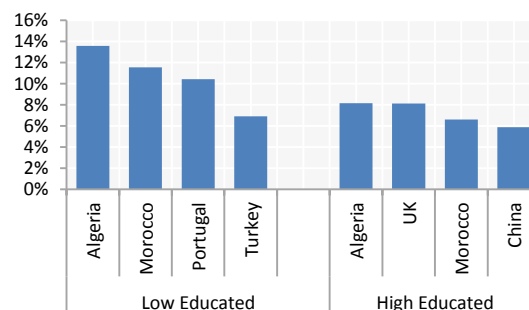
39. Flows of permanent immigrants to France reached close to 260 thousand in 2012 – close to 2.6 per 1000 inhabitants. And while, according to preliminary estimates, migration flows to France may reach a high in 2013 relative to the total population, they are still below the OECD average (OECD 2014a). The large majority of migrants arriving in France are from Northern Africa – Algeria, Morocco and Tunisia in particular (Figure 14) and arrivals from these countries are heavily represented across the skills spectrum (Figure 15). Inflows from the United Kingdom and China have also represented a substantial proportion of highly-educated immigrants in recent years.

**Figure 14. Inflows of foreign population into France**  
(Thousands, by nationality, 2012)



Source: OECD International Migration Outlook 2014

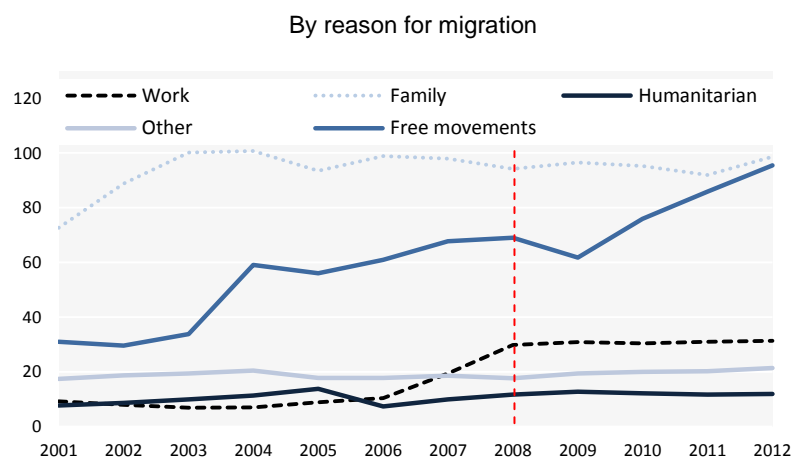
**Figure 15. Recent migrants to France by level of education and origin**  
(migrants arriving 2005-2010)



Source: Database on Immigrants in OECD Countries 2010/11.

40. Turning to the reason for migration – as obtained from permit data – as elsewhere, *free movement* flows to France have increased substantially in recent years. Indeed, the numbers arriving under free movement have grown – from 68 thousand in 2007 (prior to the relaxation of transitional arrangements) to over 95 thousand in 2012. As a result, the numbers arriving under free movement are now almost equal the numbers arriving under family reunification – traditionally the largest immigrant group in France.

41. These increased flows of free movement migrants do not, however, appear to have arisen at the expense of *labour* migrants from third countries in the years following the first EU enlargement (see Figure 16). Indeed, over the same period, the proportion of labour migrants in total annual inflows rose from 9% to 13%. This increase was largely driven by the increased number of labour migrants that followed the migration reforms of 2006/7 which opened-up labour migration to persons in occupations on shortage lists.

**Figure 16. Flows to France, 2000-2012, thousands**

Source: OECD International Migration Database

Notes: Dashed red line represents year of relaxation of transitional agreements

No data disaggregation by place of origin is possible in France.

42. Turning to the labour market characteristics of recent migrants in France (Table 5) it is clear that, free movement migrants are working largely in quite different occupations than those from third countries. While just 30% and 36% of EU15 and NMS migrants are working in low-skilled occupations, among third country migrants these low-skilled occupations account for more than half of all jobs. It is important to note, however, that these figures refer to all working recent migrants (and not just labour migrants as in the figures pertaining to other migrant destination countries in this study) this has been done due to concerns regarding the representativeness of the data if the sample is narrowed to proxy for labour migrants. It does mean that humanitarian and family migrants are more likely to be included in the figures, and as such they cannot be compared to those analysed in the UK, Spain and Italy.

**Table 5. Profile of recent migrants to France**

(aged 15-64 by origin, those arriving 2004-2010, percent)

<b>France</b>			
	<b>EU15/EFTA</b>	<b>NMS12</b>	<b>Third</b>
<b>Low-skilled Occupations</b>	30.02	36.49	53.73
<b>Intermediate Occupations</b>	35.23	45.1	25.34
<b>Prof/Man Occupations</b>	34.74	..	20.93
<b>Over-educated</b>	..	..	..
<b>Capital</b>	28.82	39.73	41.69
<b>Agriculture</b>	..	2.85	3.17

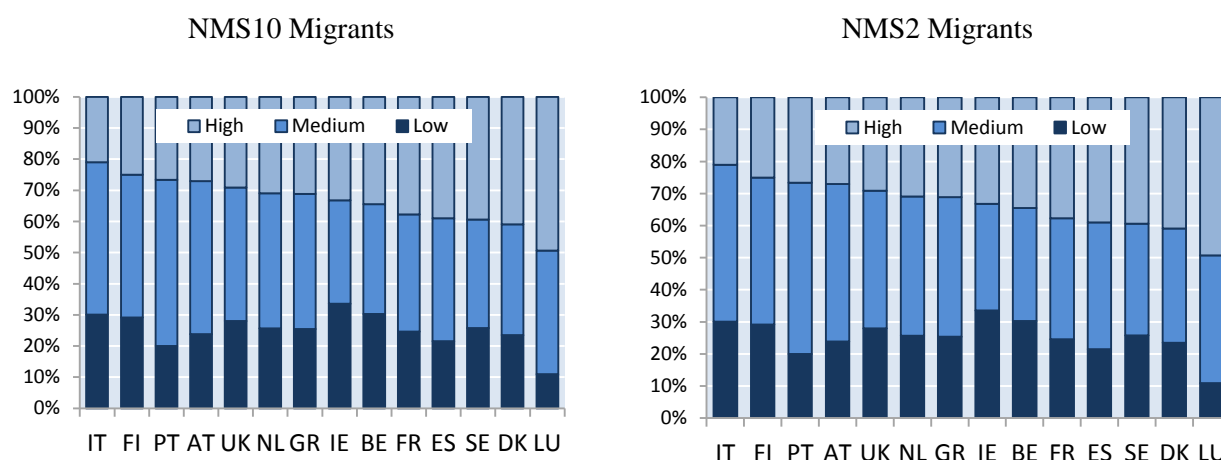
Notes: Migrant flows approximated by the stock of migrant with the same number of years of residence (ie flows in 2004 approximated using all those in the 2006 LFS with two years of residence. The proxy for labour migrant flows used in the other countries in this study are not possible in France due to more stringent anonymisation restrictions that require cell sizes that were not achievable with a focus on proxied labour migrants. Thus these figures are not directly comparable to those elsewhere in this paper. Cells containing an insufficient number of observations are marked as “..”

Source: EUROSTAT Labour Force Survey.

### ***Elsewhere in the EU15***

Outside from the ‘big five’ destination countries, there has been a mixed picture with respect to the changing patterns of work and free movement migration (see Figure A1). In some countries – such as Belgium and, to a more limited extent, Denmark – trends in the number of free movement arrivals, and the number of work migrants do appear to be moving in opposing directions (see Panels B and C of Figure A3). And, while it is difficult to disentangle the effects from an inspection of these macro trends, such a pattern may indicate that, in these countries, free movement migrants are to some extent crowding out third country work migrants. Interestingly, both of these countries (Belgium and Denmark) are among those countries in which the highest proportion of migrants from the new member states is highly educated (see Figure 17 Panels A and B). These educated new free movement migrants may be a closer substitute for work migrants from third countries, than the less educated new member state arrivals in other EU destinations.

**Figure 17. Distribution of educational attainment of new member state migrants across the EU15 destinations**



Source: EULFS

43. In other EU15 countries trends in work migrants from third countries appear to be largely unaltered following enlargement – and the concomitant increase in free movement migrants. This is the case, for example, in countries such as Austria, Netherlands, and Sweden (see Panels A, G and I in Figure A3). The number of third country migrants arriving under work permits is, however, at relatively low levels in these countries. Lastly in other countries, such as Portugal, Ireland and Finland the trends in those migrants arriving for work, and those arriving under free movement appear to follow largely similar patterns. Again, while it not possible to determine the cause of these patterns from the macro data, these correlated trends may indicate that both these flows have been largely determined by economic factors driving labour demand.

44. The composition of migrant inflows – in terms of the reason for migration, the country of origin, and the education of the migrant – differs substantially across EU countries and throughout time. Much of compositional difference is driven by differences in national policy regimes and, as such, an overview of migration pattern across the ‘big five’ EU destinations is an important place to start. However, in order to draw some conclusions regarding the interactions between differing migrant groups in labour markets across the EU, the analysis will now turn to a cross-country investigation based upon the micro-data from the EULFS.

## Part B: Empirical Analysis

45. The analysis of the previous section has unpacked the composition of migrant flows in the largest EU destination countries and illustrated the differing trends in the arrivals of free movement migrants from EU countries and those of arrivals from outside the European Union. The analysis of this section uses the harmonized micro data of the European Labour Force Survey (EULFS), based upon country specific surveys at the European level, to examine the impact of increases in the free movement migrants that accompanied EU enlargement on two aspects of third country labour migration. First, the extent to which third country migrants were displaced by the migrants arriving from the new member states, and second the extent to which the employment prospects of those third country migrants that did migrate were hampered by the increased labour supply of new member state migrants.

46. For each individual, the EULFS contains data on country of birth, age, education level, employment status, as well as country and (in some cases) region of residence. The analysis is restricted to the working age population (15-64) and, because the availability of variables such as country of birth is more limited in the years prior to 2004, is based upon the micro data from the years 2004-2013. The exception to this is the creation of the instrumental variable (outlined in equation 2) in which, to proxy for diaspora, rather than using the micro EULFS I use an aggregated extraction (provided by Eurostat) that captures the entire population in the year 2000.

47. The key challenge in estimating the impact of immigration on the employment outcomes of other workers – whether those with a foreign or native background – is to construct a counterfactual. Investigating the impact free movement migrants on the labour market outcomes of those from outside Europe, we would ideally compare the outcomes of third country migrants in the context of EU freedom of movement with the outcomes of these migrants had there been no freedom of movement. Clearly, however, the existence of freedom of movement precludes the direct observation of such a counterfactual.

48. One way to construct such a counterfactual is to divide the labour market into sub-markets (at the country, region, occupational or industry level) and utilise the variation in the magnitude of immigration flows to compare wage changes across these submarkets. The most common approach has been to divide the market into regions. However, this approach has been criticized on the grounds that spatial equilibrium re-establishes at the regional level as workers respond to worsening labour outcomes by moving across regional labour markets.<sup>14</sup>

49. An alternative strategy, proposed by Borjas (2003), relies on the observation that workers holding the same level of education, but who differ in terms of age or experience, are unlikely to be perfect substitutes. Hence, if the composition of the immigrant inflow is concentrated, not only among certain education groups but also among experience groups within education groups, it is possible to use many more quasi-independent data points with which to achieve identification. This approach ameliorates the

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14 This concern is attenuated in this paper by the more limited mobility – particularly across countries – of third country migrants.

concern that compensatory worker flows will re-establish equilibrium because disequilibrium across skill cells is likely to be more persistent than disequilibrium across local labour markets.

50. The analysis of this section of the paper adopts this skill cell approach, developed by Borjas (2003), in which workers with same education level, but differing experience (or conversely the same experience but differing education levels) are considered as imperfect substitutes.<sup>15</sup> To create the dataset I therefore collapse the data into ‘skill cells’, where each skill cell is stratified by three levels of education, and five age categories covering all males aged 15-64. Here age categories are used to capture ten year intervals of potential experience.<sup>16</sup>

51. On the basis of these data, to assess the extent to which new member state migrants arriving under free movement arrangements displaced migration from elsewhere I estimate the following equation where  $(Pop_{s,c,t}^o / Pop_{s,c,t}^{Total})$  is the population share of individuals from origin  $o$ , where  $o \in (TCM, EU15/EFTA)$ , such that  $(Pop_{s,c,t}^{NMS} / Pop_{s,c,t}^{Total})$  represents the share of the population in skill cell  $s$ , country  $c$ , and year  $t$ , that is accounted for by immigrants from the New Member States.

$$\ln\left(\frac{Pop_{s,c,t}^o}{Pop_{s,c,t}^{Total}}\right) = \beta \ln\left(\frac{Pop_{s,c,t}^{NMS}}{Pop_{s,c,t}^{Total}}\right) + \alpha_{c,t} + \delta_{s,t} + e_{s,c,t} \quad (1)$$

52. Fixed effects for country-time and skill-time trends are also included. Table 6 below presents the results of an ordinary least squares estimation equation 1. The positive and significant coefficients capture the correlation between increases in the population of new member state migrants and the population of migrants from elsewhere – third country migrants (TCM) in column (1) and migrants from EU15/EFTA countries in column (2). These OLS estimates, suggest a positive and significant association between the relative population of third country migrants in a given country-year-skill cell and the relative population of migrants from EU15/EFTA countries in the same country-year-skill cell – that is, a 10% increase in the population share of migrants from the NMS10 is associated with an increase of 1.6% increase in the population share of third country migrants and an increase of 1.7% increase in the population share of migrants from EU15 and EFTA countries. Columns (3) and (4) repeat the analysis of Columns (1) and (2) allowing for a lag of one year in the impact of the effect of changes in the population share of migrants from new member state countries. The magnitude of the coefficients is broadly similar.

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15 As elsewhere in the literature, the analysis in this paper uses age as a proxy for potential experience.

16 Thus each country contains 15 skill cells for each of the nine years. I exclude from the analysis both Germany (where no country of origin data is available) and Belgium (where there have been concerns over the weighting) leaving 3,375 potential observations across 25 countries: Austria, Bulgaria, Switzerland, Cyprus, Czech Republic, Denmark, Estonia, Spain, France, Greece, Hungary, Iceland, Italy, Lithuania, Luxembourg, Latvia, Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Slovakia, United Kingdom. Data from Bulgaria are not available prior to 2006. Data from Sweden are not included because they do not distinguish between NMS10 and NMS3 in the country of birth variable.



**Table 6. OLS Estimates of the Impact of Migrants from the New Member State (NMS) on the Employment of Third Country Migrants (TCM)**

VARIABLES	(1)	(3)	(3)	(4)
	OLS	OLS	OLS	OLS
	Log migrant Stock (TCM)	Log migrant Stock (EU15/EFTA)	Log migrant Stock (TCM)	Log migrant Stock (EU15/EFTA)
Log migrant Stock (NMS)(t)	0.162*** (.0570)	0.173*** (0.0444)		
Log migrant Stock (NMS) (t-1)			0.162** (0.0642)	0.149*** (0.0406)
Country-time FEs	YES	YES	YES	YES
Skill-time FEs	YES	YES	YES	YES
Constant	-1.672*** (0.2448)	-3.467*** (0.196)	-1.635*** (0.275)	-3.563*** (0.184)
Observations	2,374	2,155	2,084	1,902
R-squared	0.8647	0.842	0.867	0.848

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

53. Given that we have included country specific time trends and skill specific time trends we can be confident that this result is insulated both from country-specific time varying shocks and from technological factors affecting overall demand for certain skills. However, before interpreting this as evidence of a complementarity between migrants of differing origins, a number of concerns persist.

54. In the first place, aside from policy changes, migration trends are driven by factors relating both to labour demand and to labour supply. Immigrants are typically not randomly allocated across countries; rather they choose where to go on the basis of where demand is strongest. That is a thriving local economy may attract more migrants, irrespective of their origin. The variation in the population of new member state migrants may not be exogenous if common demand factors of this type are pulling new migrants into the country from multiple origins.

55. Ordinary least squares estimates make no attempt to overcome the potential endogeneity caused by these demand side factors. Residual correlation could still be present if economic factors driving local demand were influencing both NMS migrant population and third country migrant population. Attaching a causal interpretation on the basis of such a correlation in trends is, therefore, problematic. To isolate the exogenous supply-push component, I instrument for the stock of new member state migrants using a combination of a dummy variable reflecting the timing of the enlargement of the EU to include the ten new member states and, on a cross-country version of the more standard Card (2001, 2009) instrument.

56. The first component of the instrument is based upon a cross-country version of the standard Card instrument that captures the tendency of migrant flows to follow their existing diaspora. To form this component I take the number of migrants from a given origin that are located in each country in 2000 as a share of the total number of migrants to all EU countries in 2000 from the same origin. I then interact this country-origin specific share from the year 2000 with the overall annual change in the total number of migrants to the EU from that origin. The intuition behind the Card instrument is that migrants tend to follow their diaspora, thus if most Polish migrants have historically located in the UK, then the UK will likely receive a larger proportion of the migrants leaving Poland in future years.<sup>17</sup> The tendency of migrants to follow existing diaspora ensures that settlement patterns capture supply side effects while remaining orthogonal to any demand-pull factors that would, instead, influence departures from these historical settlement patterns.<sup>18</sup> The exclusion assumption is that the 2000 distribution of immigrants by origin is unrelated to country-specific changes in labour demand over the period 2004-2013.

57. I combine this component based upon the Card instrument with an enlargement dummy,  $enlarge_{c,t}$ , that captures the cross-country variation in the timing of the relaxation of transitional arrangements following the EU expansion to cover the ten new member state countries. Thus when transitional arrangements are still in place in country  $c$ ,  $enlarge_{c,t}$  will take the value of zero, when transitional arrangements are relaxed  $enlarge_{c,t}$  will take the value of one. For example, in Spain, where transitional arrangements prevented the free movement of migrants from the new member states until 2006,  $enlarge_{c,t}$  is equal to zero in the years 2004 and 2005, and one in all years from 2006, in France – where transitional arrangements were not relaxed until 2008 – the  $enlarge_{c,t}$  dummy switches on only in 2008. When transitional arrangements were relaxed midway through the year,  $enlarge_{c,t}$  takes the value equal to the proportion of the year that transitional arrangements no longer were in place (see Appendix B for full details of timing).

58. As a result, this  $enlarge_{c,t}$  dummy introduces some exogenous cross-country variation into the Card instrument. Furthermore, since the  $enlarge_{c,t}$  dummy is policy based, as it reflects a relaxation of restrictions on supply, it is plausibly exogenous to subsequent changes in demand. The final instrument is composed as follows:

$$Z_{c,t} = \left( \frac{Pop^{NMS}_{c,2000}}{Pop^{\Sigma O}_{c,2000}} \right) * \left( \frac{Pop^{NMS}_{c,t} - Pop^{NMS}_{c,t-1}}{Pop_{c,t-1}} \right) * Enlarge_{c,t} \quad (2)$$

59. Using the variable constructed according to equation (2) to instrument for the potentially endogenous population of new member state migrants, Table (7) re-estimates this relation using two stage

17 Unfortunately the country of birth variable within the EU LFS micro data is aggregated into origin groups (EU15/EFTA, NMS, Other, Native). As a result I must treat NMS migrants as a homogenous group. This is likely to dampen the strength of the instrument.

18 Recent work by D'Amuri and Peri (2014) uses a similar instrument however rather than interacting the initial distribution with the overall changes in EU wide migration flows from that origin the authors multiply the initial distribution by the total growth in the stock of immigrants from that country of origin for each year and each origin. I avoid this approach, however, for fear that using country specific growth in the stock of immigrants by origin fails to overcome the endogeneity generated by demand side factors.

least squares. Where the OLS results detailed in Table 6 suggest a positive association between the population of migrants from the new member states and those from third countries, when instrumenting for the migrant population from new member states to account for endogeneity, this seemingly positive effect disappears. Indeed the two stage least squares results suggest that migrants from the new member states may be crowding out those from third countries. Columns (1) and (2) of Table 7 below provide the 2SLS results for the regressions in which the dependent variable is the log population share of third country migrants (Column 1) and the log population share of EU15/EFTA migrants (Column 2) respectively. Columns (3) and (4) similarly capture the effects on the migrant populations from third countries and EU15/EFTA respectively, however, this time the instrumented independent variable (logged population share of new member state migrants) is lagged one year in order to allow some time for the decisions of potential migrants to adjust.

60. When accounting for the endogeneity caused by demand factors in this manner the positive association identified in Table 6 is no longer apparent. Indeed, when demand pull factors are accounted for, a 10% increase in the population share of migrants from new member states is associated with a reduction in the population share of third country migrants of between 5% and 6% (Columns (1) and (3) of Table 7).<sup>19</sup> There is, however, no significant impact upon migrants from EU15/EFTA countries.

61. The disparity in the impacts identified in Table 6 and Table 7 suggests that, indeed, the endogeneity driven by the impact of labour demand on migrant populations was playing a significant role. Those country specific skill-cells experiencing strong growth attract migrants both from new member states and from third countries. The positive association between these population shares should not be attributed to a complementarity in their labour input.

62. Lastly, Column (5) restricts the sample to the proxy for labour migrants outlined in the previous section.<sup>20</sup> Here the stock of NMS migrants is lagged two periods; this is because the proxy for labour migrants considers migrants with two years of residence (*ie* those that made their migration decision two years previous). When the sample is restricted to third country migrants moving for employment purposes, the magnitude of the displacement effect increases substantially. A 10% increase in the population share of new member state migrants is now associated with an almost equivalent fall in the population share of third country labour migrants.

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19 Clearly an automatic effect operating through the denominator is also present to some extent. However, given the relatively small size of the NMS migrant population it is unlikely that this effect is driving the result.

20 Labour migrants are proxied by those migrants who were in employment in their first year of arrival. This proxy reduces the sample size substantially because to establish whether a migrant moved immediately into work relies on the variable detailing employment status one year previously. Thus only migrants with two years of residence can be considered.

**Table 7. The Impact of Migrants from the New Member State (NMS) on the Population of Third Country Migrants (TCM)**

VARIABLES	(1)	(2)	(3)	(4)	(5)
	2SLS	2SLS	2SLS	2SLS	2SLS
	Log migrant Stock (TCM)	Log migrant Stock (EU15/EFTA)	Log migrant Stock (TCM)	Log migrant Stock (EU15/EFTA)	Log Labour migrant Stock (TCM)
Log migrant Stock (t) (NMS)	-0.573* (0.305)	0.0629 (0.134)			
Log migrant Stock (t-1) (NMS)			-0.601* (0.308)	0.0942 (0.122)	
Log migrant Stock (t-2) (NMS)					-0.967*** (0.204)
Country-time FEs	YES	YES	YES	YES	YES
Skill-time FEs	YES	YES	YES	YES	YES
Constant	-4.802*** (1.250)	-3.904*** (0.560)	-4.896*** (1.260)	-3.736*** (0.505)	-10.62*** (0.825)
Observations	1,406	1,344	1,223	1,170	571
R-squared	-0.089	0.689	-0.211	0.696	0.579

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

63. To establish the extent to which new member state migrants act as a substitute or complement for third country workers in the labour market I now turn to the impact of changes in the population stocks of NMS migrants on the employment population ratio of third country migrants. However, having established above that - after accounting for demand pull factors - population stocks of third country migrant groups do indeed adjust to the labour supply changes prompted by the entrance of new member state migrants, it is clear that an examination of the impact of NMS migrants on the employment prospects of third country migrants must attempt to account for this displacement.

64. In the first place, again considering different (education-age) skill cells as separate labour markets, I estimate the following equation, where  $(Empl^{TCM}_{s,c,t}/Pop^{TCM}_{s,c,t})$  represents the employment population ratio of third country migrants in skill cell  $s$ , country  $c$ , and year  $t$ , and  $(Pop^{NMS}_{s,c,t}/Pop^{Total}_{s,c,t})$  again represents the share of the population in skill cell  $s$ , country  $c$ , and year  $t$ , that is accounted for by immigrants from the New Member States. As in equation 1, fixed effects for country specific time trends and for demand changes common to skill groups over time are captured by  $\alpha$  and  $\delta$ , respectively.

$$\ln\left(\frac{Empl^{TCM}_{s,c,t}}{Pop^{TCM}_{s,c,t}}\right) = \beta \ln\left(\frac{Pop^{NMS}_{s,c,t}}{Pop^{Total}_{s,c,t}}\right) + \alpha_{c,t} + \delta_{s,t} + e_{s,c,t} \quad (3)$$

65. Having controlled for technological factors affecting skill demand (with the skill-time fixed effects,  $\delta_{s,t}$ ), and for country specific time trends such as those resulting from the disparate impacts of the financial crisis (with country-time fixed effects,  $\alpha_{c,t}$ ) it is common to assume that the remaining variation between skill-country cells is driven by exogenous changes in the supply of NMS migrants ( $Pop^{NMS}_{s,c,t}/Pop^{total}_{s,c,t}$ ). However residual correlation may still be present in equation 3 if increasing employment in one cell is driving demand for migrant labour in the same cell. An estimate of the impact of new member state migrants on the employment prospects of third country migrants may therefore find a positive impact where, in reality, none exists.

66. The analysis that follows takes two approaches to ameliorating this problem. In the first place, as is common in the literature, I consider changes within each cell in the relative *population* shares of NMS migrants ( $Pop^{NMS}_{s,c,t}/Pop^{total}_{s,c,t}$ ) as the explanatory variable rather than changes in the relative *employment* shares ( $Empl^{NMS}_{s,c,t}/Empl^{total}_{s,c,t}$ ). Population shares are relatively more insulated from demand shocks than are employment shares and, while migrant flows may be attracted to high employment skill cells, in the short-term immigrant populations are determined, in large part, by supply-side factors such as legislation changes and by factors in the sending countries. In the second place I again use the instrument, as outlined in equation 2, to enable a two stage least squares estimation of equation 3.

67. Table 8 illustrates the results of the analysis outlined in equation 3. The results of both the ordinary least squares analysis, Columns (1) and (2), and the two stage least squares regression, Column (3) and (4), reveal a negative association between the population share of new member state migrants and the employment prospects of third country migrant arriving from outside the EU. However, the magnitude of these coefficients is negligible and not significant at standard levels.

**Table 8. The Impact of Migrants from the New Member State (NMS) on the Employment of Third Country Migrants (TCM)**

VARIABLES	(1)	(2)	(3)	(4)
	OLS	OLS	2SLS	2SLS
	Log employment ratio (TCM)	Log employment ratio(TCM)	Log employment ratio (TCM)	Log employment ratio(TCM)
Log migrant Stock (t) (NMS)	-0.0131 (0.0273)		-0.0996 (0.0799)	
Log migrant Stock (t-1) (NMS)		-0.00961 (0.0257)		-0.0906 (0.0707)
Country-time FEs	YES	YES	YES	YES
Skill-time FEs	YES	YES	YES	YES
Constant	-1.217*** (0.0982)	-1.199*** (0.0976)	-1.481*** (0.300)	-1.427*** (0.260)
Observations	2,334	2,049	1,396	1,212
R-squared	0.749	0.748	0.782	0.799

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

68. However, in addition to the labour demand considerations discussed above, examining the extent of the substitutability between migrant inflows from the enlarged EU and from third countries through the impact of new member state migrants on the employment prospects of third country migrants raises a second concern; it is complicated by the supply side reactions of other migrant groups. If immigration from NMS countries deters immigration from other countries (either from other EU15/EFTA countries and from third countries), or if it pushes previous cohorts of immigrants to return to their home country or move elsewhere (see Poeschel 2016 for an analysis of the mobility of third country nationals in the EU) then the apparent lack of employment effect may be the result of this displacement and potentially of selective sorting.

69. While this problem is common to the literature examining the impact of immigration on the labour market outcomes of natives, it is potentially more worrisome when looking at the impact on the labour market outcomes of other migration streams since they are, by definition, more mobile and likely to be more flexible in their location choices. Indeed, having established the existence of a displacement effect of increased new member state migrants on the population of those migrants from third countries (Table 7), there remains a concern that the lack of identifiable impact of NMS migrants on the employment prospects of third country migrants (Table 8) is indeed the result of the reactive outflows – or altered migration plans – of other workers.

70. Indeed if there was endogenous selection in the quality of migrants whose location decisions were affected; if those third country migrants who, in the face of increased labour market competition from new member state migrants decided not to migrate – or to migrate elsewhere – were those that were most vulnerable to labour market competition from new member state migrants, selective sorting may exacerbate the degree to which displacement mitigates the identifiable employment effects.

71. To address this concern I derive a selection adjusted measure of employment rate of third country migrants. Since it is impossible to observe the counterfactual employment outcomes of those third country migrants that were displaced, I develop two scenario's representing both an upper and lower bound of the potential employment impact on the basis of extreme assumptions. Under scenario A I assume that all those migrants that were displaced would have been employed in the destination country had they decided to migrate. Thus the estimated employment population ratio under scenario A would be:

$$\left(\frac{\widehat{Empl}^{TCM}}{Pop^{TCM}}\right)^A = \frac{Empl^{TCM} + Displaced^{TCM}}{Pop^{TCM} + Displaced^{TCM}}$$

72. In this estimation of the employment population ratio under scenario A the variable  $displaced^{TCM}$  is estimated using the coefficients detailed in Table 7 column 3 to proxy for the counterfactual migration flows that would have arisen in the absence of enlargement. This scenario can be taken to represent the case in which those that were deterred by the increased competition generated by the presence of new member state migrants were the most employable third country migrants. This scenario is therefore the more likely if migrants whose profile renders them most competitive on the labour market are also those with more alternatives – and therefore flexibility – regarding destination choice.

73. Under scenario B, on the other hand, I assume that none of those migrants that were displaced would have been employed in their destination country. That is, those who were deterred from migrating were the least competitive on the labour market. This scenario is the more likely if those that were deterred from migration in the face of EU enlargement were the migrants whose profile rendered them least competitive in the labour market.

$$\left(\frac{\widehat{Empl}^{TCM}}{Pop^{TCM}}\right)^B = \frac{Empl^{TCM}}{Pop^{TCM} + Displaced^{TCM}}$$

74. The results of Table 9 Columns (1) and (2) report this selection adjusted measure of impact. Column (1) estimates the specification under scenario A and suggests that, if all those third country migrants that chose not to migrate, or to migrate elsewhere, as a result of the NMS labour supply shock were those most likely to find employment upon arrival, then in the absence of this displacement – as in the results of Table 8 where displacement is not accounted for – the employment rate of third country migrants would not have been significantly affected. If, on the other hand, those third country migrants that were displaced by the labour supply shock had instead entered their host country without finding employment – scenario B – then column (2) suggests that there would have been a negative and significant impact on the employment rate of third country migrants.

**Table 9. The Impact of Migrants from the New Member State (NMS) on the Employment of Third Country Migrants (TCM) Adjusted for Displacement**

VARIABLES	(1)	(2)
	2SLS	2SLS
	Log employment ratio (TCM) Scenario A	Log employment ratio (TCM) Scenario B
Log migrant Stock (t-1) (NMS)	0.0540	-0.362***
	(0.125)	(0.120)
Country-time FEs	YES	YES
Skill-time FEs	YES	YES
Constant	-0.937*	-2.416***
	(0.512)	(0.505)
Observations	1,206	1,210
R-squared	0.639	0.493

Robust standard errors in parentheses

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

75. Given that third country *labour* migrants are more likely to be employed upon arrival in their destination country than those that migrate from third countries for *humanitarian* reasons or to re-unite with *family* members. And given the fact that these labour migrants are likely to be more flexible in their location decisions (confirmed by the results of Table 7 when the displacement effect is estimated on the basis of the proxy for labour migrants) it is perhaps more likely that, when considering the impact on labour migrants from third countries, scenario A, in which there is no significant impact on the employment population ratio of third country migrants is likely to be the more accurate representation. However, the assumption that *all* displaced third country migrants would have found employment had they chosen to migrate is extreme and the true impact is likely to lie between these estimates. Furthermore, as discussed in section A, the restrictions on migration from third countries for employment purposes differ from country to country; in countries requiring labour migrants to hold an offer of employment prior to migration scenario A is likely to be the more appropriate assumption while in countries with no such restrictions it is less reasonable to assume the displaced migrants would all have entered employment.

76. The employment prospects of third country migrants do not appear to have been significantly affected by the increased labour market competition that followed EU enlargement. However, this absence of effect is driven partially by the displacement of third country migrants who, as a result of the increased number of new member state migrants, chose not to migrate, migrated elsewhere, or were not offered the employment necessary to migrate as a labour migrant. If these third country migrants had not altered their plans as a result of the changed labour market realities and if, upon arrival, some had failed to find employment there may well have been an employment impact alongside the impact on the arrivals of third country migrants.



## Conclusion

77. Examining the impact of the free flow of migrants within the EU on the prospects of migrants from third countries is not a straightforward exercise. In the first place, demand pull factors are likely to affect the flows of migrants from all destinations, as well as their employment outcomes. These demand pull factors are likely to confound a naïve examination of patterns in correlations. In the second place, any attempt to capture the impact of EU free movement policies must take into account the potential displacement of other migrant streams and the possible selectivity of displaced migrants. This paper makes a first attempt to overcome these hurdles in order to address these questions.

78. The first section of this paper looks at the recent trends in migration to the European Union, with a particular focus on trends in the ‘big five’ recipient countries. The analysis is supplemented by the use of micro data from the EU Labour Force Survey, to examine the extent to which the socio-economic and job characteristics suggest that EU migrants and third country migrants provide a similar labour input. Aggregate migrant flows, however, are driven by both supply and demand factors; a comparison of aggregate trends is therefore insufficient to disentangle the disparate drivers of these trends. While a booming economy will attract migrants, both from the EU and from third countries, the positive relation between these flows cannot be attributed to a complementarity between these labour inputs but rather to the demand side factors that drive them both.

79. Similarly, while a naïve analysis of correlations among migrant flows from differing origins suggests a positive relation between the flows of migrants from the EU’s new member states and those from third countries, when endogeneity concerns are taken seriously and a natural experiment of EU enlargement is used to isolate the supply side impact of arrivals from elsewhere within the EU, the relation between migrants arriving under free movement, and those arriving from third countries is found to be negative. Indeed a 10% increase in the population share of migrants from new member states is associated with a reduction in the population share of third country migrants of between 5% and 6%.

80. Finally, turning to the impact of free movement on the employment outcomes of third country migrants in EU destinations while no significant effect is identified, this lack of identifiable impact on the employment rate of third country migrants is dependent on assumptions regarding the counterfactual employment outcomes of these displaced third country migrants.

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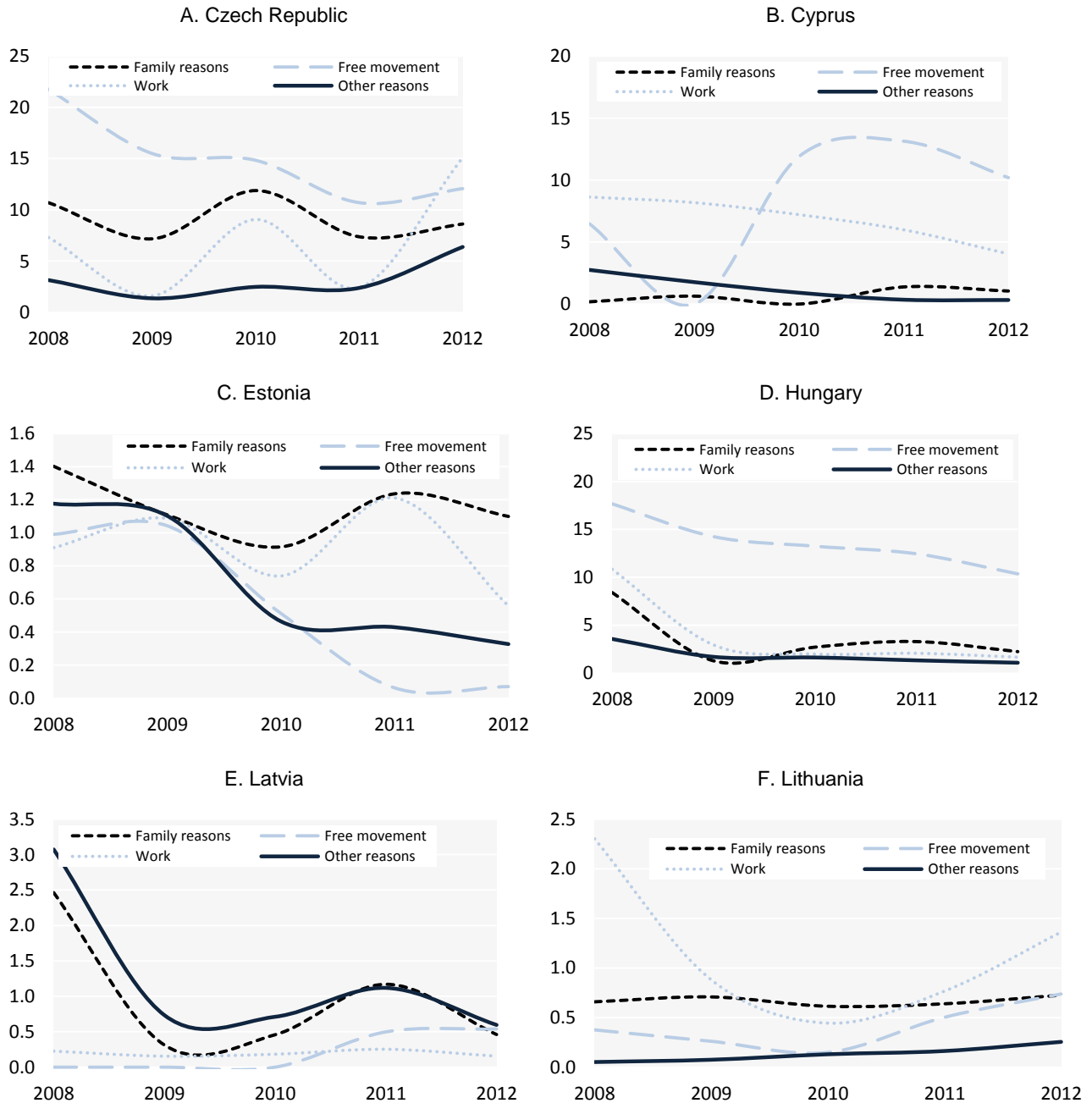
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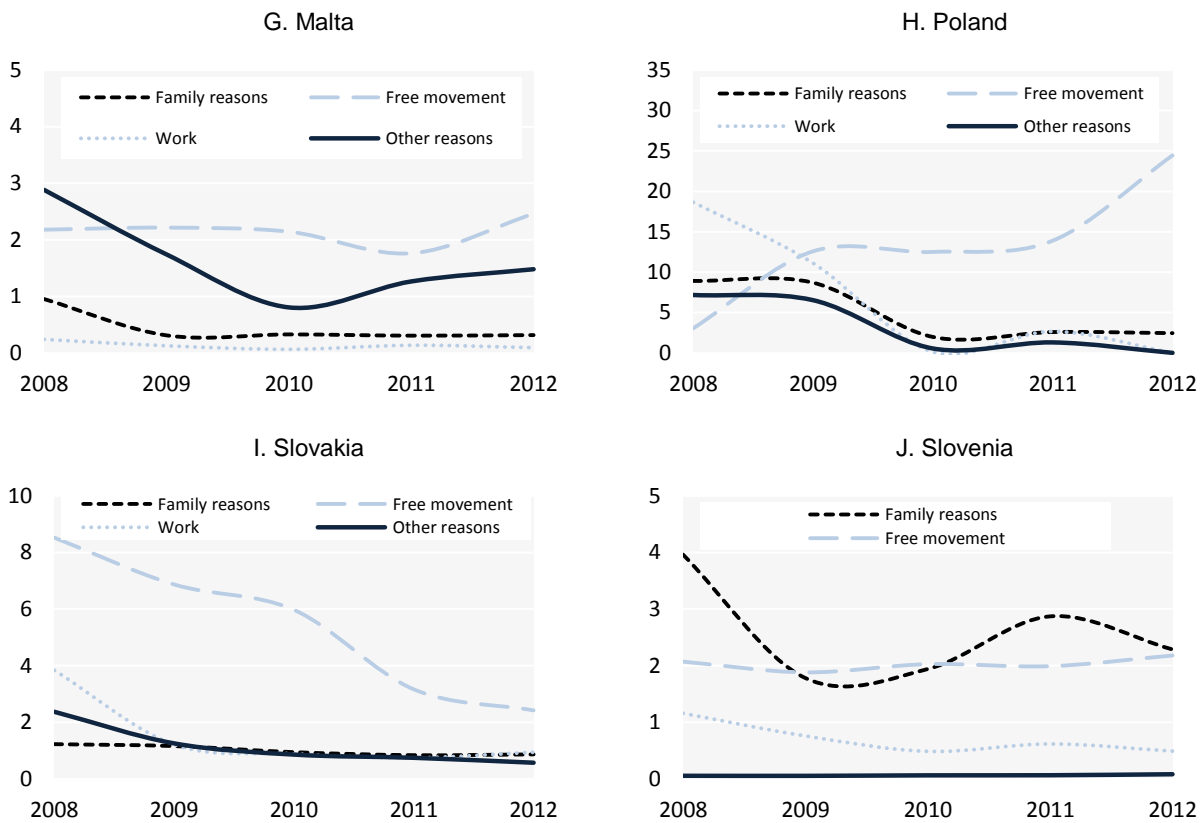
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APPENDIX A: SUPPLEMENTARY FIGURES

Figure A.1. Flows to new member state countries - first enlargement

By reason for migration, thousands

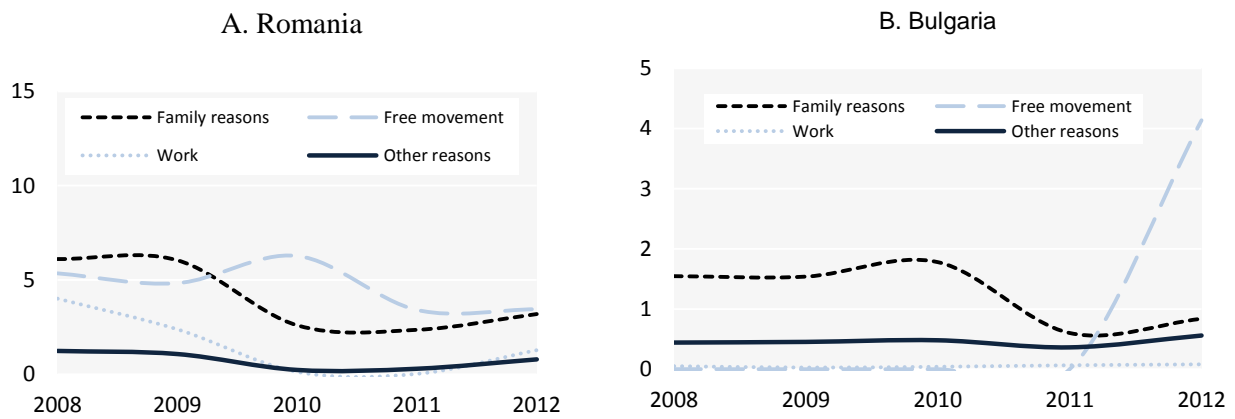




Source: EUROSTAT permit data and demography data  
 Notes: No data for Croatia

**Figure A.2. Flows to new member state countries - second enlargement**

By reason for migration

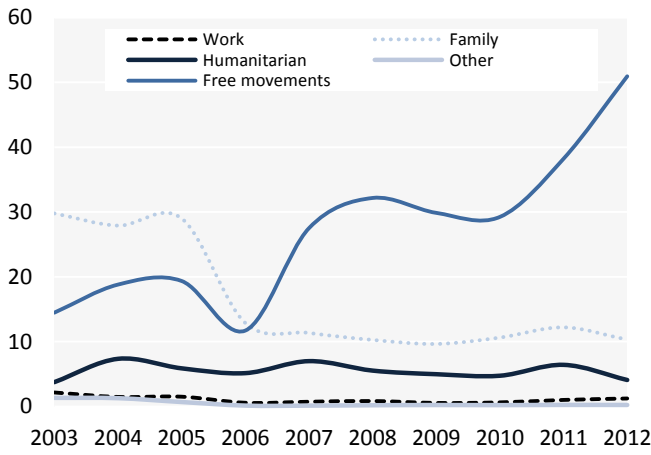


Source: EUROSTAT permit data and demography data  
 Notes: No data for Croatia

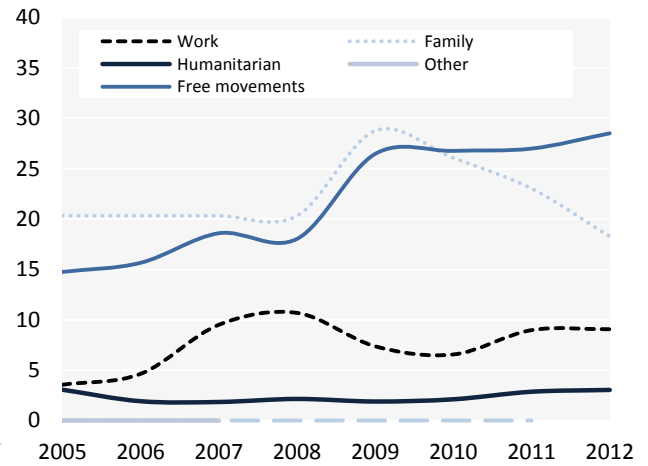
**Figure A.3. Flows to EU 15 countries**

By reason for migration, thousands

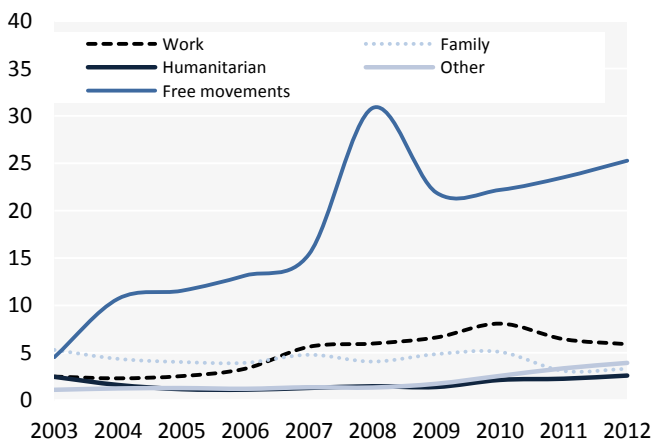
**A. Austria**



**B. Belgium**



**C. Denmark**



**D. Finland**

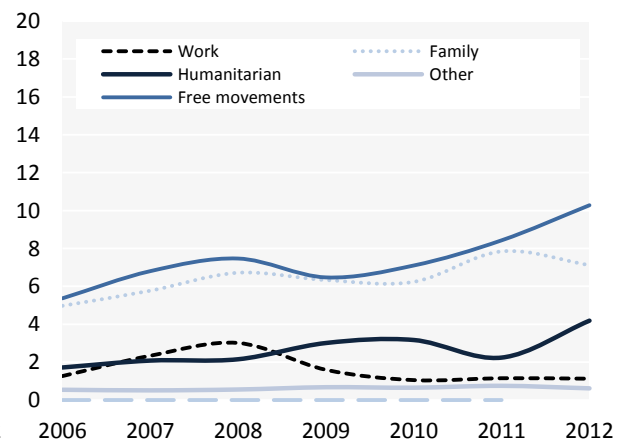
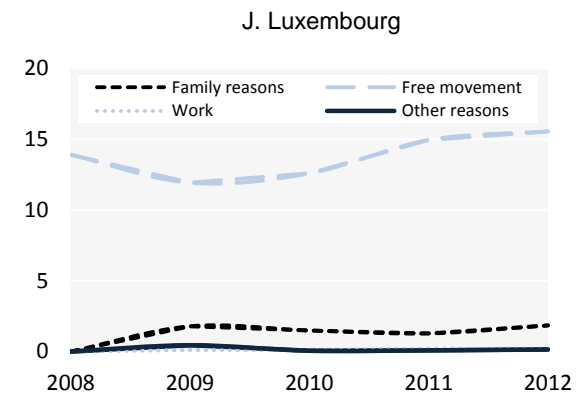
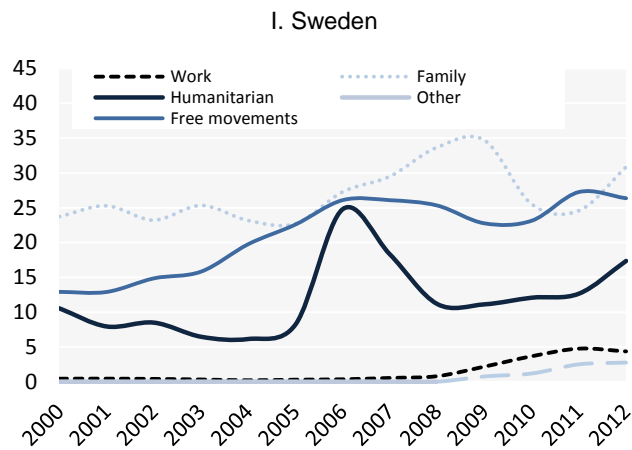
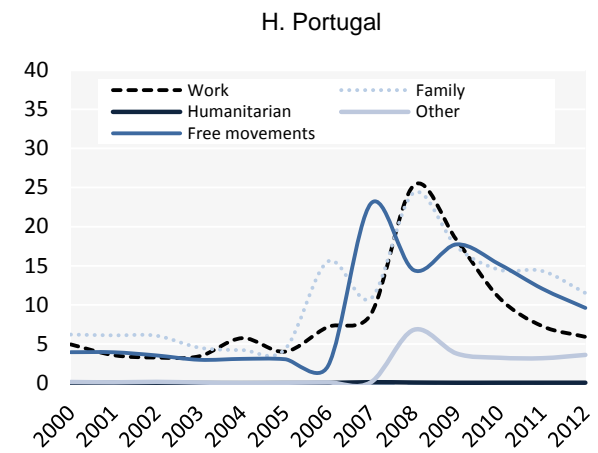
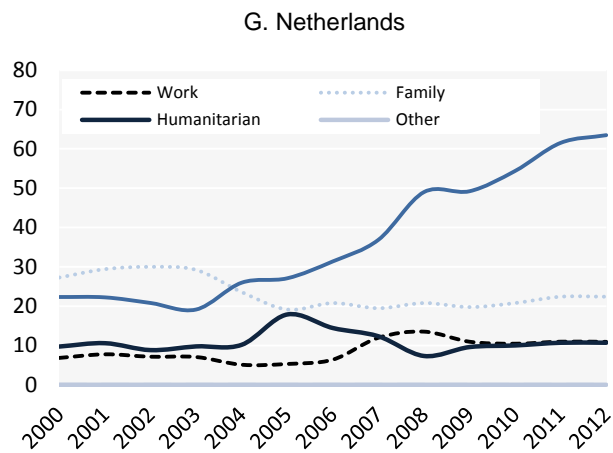
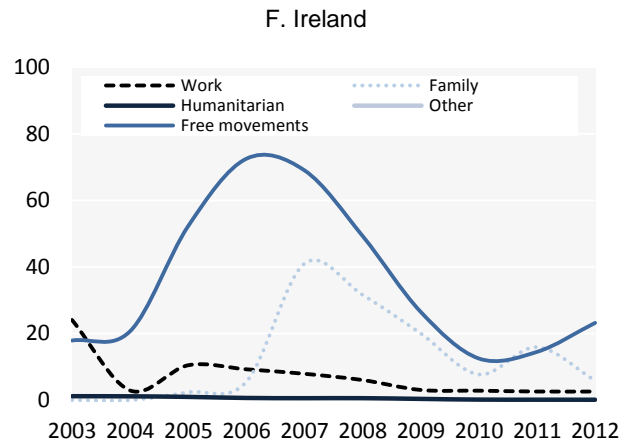
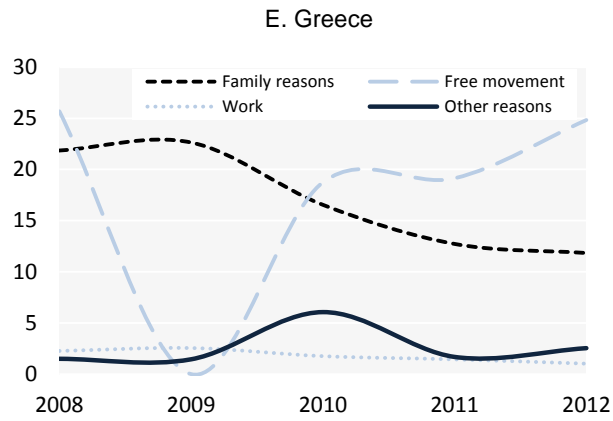
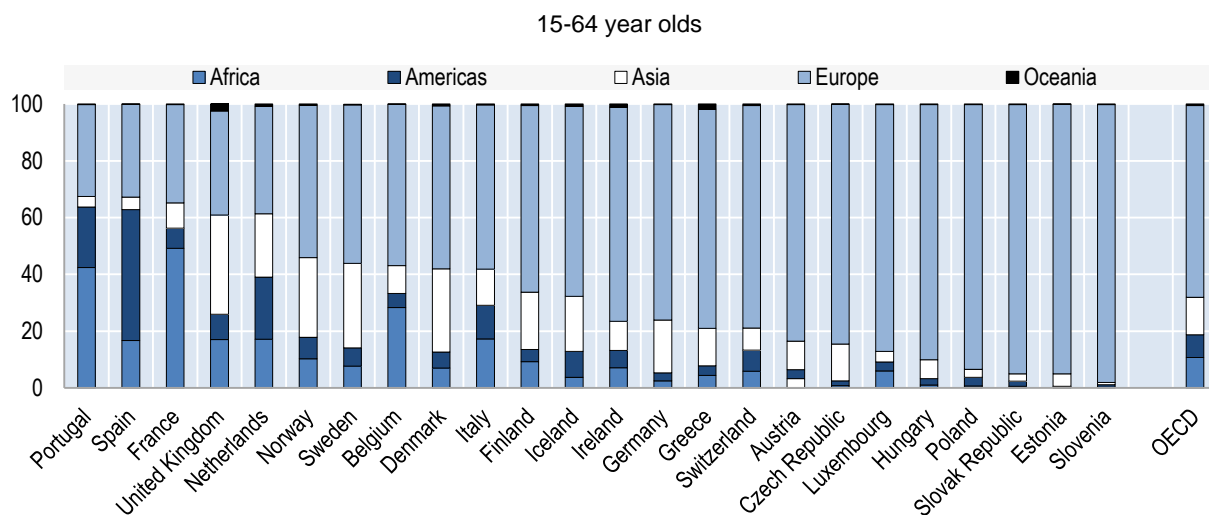


Figure A.3. Continued



Source: EUROSTAT permit data and demography data  
 Notes: No data for Croatia

Figure A.4. Distribution of the immigrant population by continent of birth, 2010/2011



Source: Database on Immigrants in OECD Countries (DIOC) 2010/11.



## APPENDIX B: TIMETABLE OF ENLARGEMENT

Table B.1 . Enlargement to NMS10

Enlargement to NMS10			
EEA/EFTA countries	Lifting restrictions on free movement of workers	Pre-treatment period	Post-treatment period
<b>Austria</b>	May 2011	2004-2013	-
<b>Belgium</b>	May 2009	2004-2008	2009-2013
<b>Denmark</b>	May 2009	2004-2008	2009-2013
<b>Finland</b>	May 2006	2004-2005	2006-2013
<b>France</b>	July 2008	2004-2007	2008-2013
<b>Germany</b>	May 2011	2004-2013	-
<b>Greece</b>	May 2006	2004-2005	2006-2013
<b>Iceland</b>	May 2006	2004-2005	2006-2013
<b>Ireland</b>	May 2004	2004-2003	2004-2013
<b>Italy</b>	July 2006	2004-2005	2006-2013
<b>Luxembourg</b>	November 2007	2004-2007	2008-2013
<b>Netherlands</b>	May 2007	2004-2006	2007-2013
<b>Norway</b>	May 2009	2004-2008	2009-2013
<b>Portugal</b>	May 2006	2004-2005	2006-2013
<b>Spain</b>	May 2006	2004-2005	2006-2013
<b>Sweden</b>	May 2004	2004-2003	2004-2013
<b>Switzerland</b>	May 2011	2004-2013	-
<b>UK</b>	May 2004	2004-2003	2004-2013

## APPENDIX C: FIRST STAGE STATISTICS FOR INSTRUMENTS

Table C.1. First stage statistics for the instruments

<b>Table 10a</b>		<b>Population</b>			
VARIABLES	Log migrant Stock (TCM)	Log migrant Stock (EU15/EFTA)	Lagged Log migrant Stock (TCM)	Lagged Log migrant Stock (EU15/EFTA)	Log Labour migrant Stock (TCM)
Coefficient	-115.32*** (38.255)	-119.65*** (37.225)	-119.28*** (37.57)	-122.88*** (36.41)	-246.59*** (54.92)
F test	9.1	10.3	10.1	11.4	20.2
Observations	1406	1223	1344	1170	571

<b>Table 10b</b>		<b>Employment</b>		
VARIABLES	Log employment ratio (TCM)	Log employment ratio (TCM)	Log employment ratio (TCM) Scenario A	Log employment ratio (TCM) Scenario B
Coefficient	-115.2*** (38.346)	-119.81*** (37.043)	-118.54*** (39.907)	-119.72*** (37.07)
F test	9.026	10.461	8.823	10.430
Observations	1396	1212	1206	1210