Migration creation and diversion in the European Union: is Central and Eastern Europe a "natural" member of the Single Market for labour?*

Helena Marques
Manchester Business School
The University of Manchester
Booth Street West
Manchester M15 6PB, UK
Email: Helena.Marques@mbs.ac.uk

Abstract

This paper applies the concepts of trade creation and trade diversion to immigration into the EU-15 in order to investigate whether in 1986-2006 there were any significant preference effects in favour of the CEECs (Central and Eastern European Countries) that make them "natural" members of the EU Single Market for labour. If this hypothesis is true, there should have been strong migration creation but little migration diversion in the last twenty years. The results broadly support migration creation for the CEECs prior to their EU membership. At the same time, the evidence of diversion away from other world regions is mixed. The combined impact of a common language and established communities, compared to distance and a common border, may contribute to the preservation of migration channels from outside Europe. Within Europe, to be an EU outsider can have a negative impact on migration channels. Moreover, whilst liberal immigration policies increase immigration contemporaneously, restrictive immigration policies only show an impact with a two-year lag.

Keywords: migration, creation and diversion, gravity model, European integration
JEL: F15, F16, F22, J61

* Thanks are due to the participants in the 7th European Trade Study Group Annual Conference (University College Dublin), 4th European Economics and Finance Society Annual Conference (University of Coimbra), 7th International Network For Economic Research Annual Conference (London), 2nd Institutions and Policies for the New Europe Annual Conference (University of Siena) and Scottish Economic Society Annual Conference (Perth, Scotland) for comments on previous versions of the paper. The author would like to thank in particular to Badi Baltagi, Herbert Bruecker, Nauro Campos, Mathilde Maurel and Boris Najman for their insightful comments that very much contributed to improve the paper. Participation at the 7th ETSG Annual Conference was sponsored by the British Academy. Thanks are also due to the Foundation Rodolfo Debenedetti for supplying data on migration policy. The usual disclaimer applies.

1 Introduction

The 1990s saw a process of East-West integration in Europe starting with the Europe Agreements, which liberalised East-West trade and laid the foundations for the 2004 and 2007 enlargements. As the deepening of integration created the expectation of a Single Market for labour, the high income gap between old and new members generated a fear of large flows of East-West migration and most of the EU-15 countries decided not to apply the Single Market requirement of free movement of labour for up to seven years after each enlargement. When these restrictions come to an end, the new member countries may find themselves in a privileged position with respect to outsiders (Kraus and Schwager 2003). Hence the process of East-West integration could create immigration from the new member countries and at the same time divert migration from non-EU countries. International organisations such as UNESCO (UNESCO Courier 2001) expressed concern that the concept of Fortress Europe is extended from trade to migration, this is, that the EU-15 carries out internal liberalisation simultaneously with external protection. Moreover, the EU-15 countries have different stances with respect to immigration from the new member states, further inducing different levels of migration creation and diversion across old members. Whilst Finland, Greece, Ireland, Portugal, Spain, Sweden and the UK have, in one way or another, lifted restrictions to citizens of the AC2004, only Finland and Sweden have extended that policy to citizens of the AC2007.[1]

In the absence of a unified theory of migration, previous migration literature has borrowed concepts and techniques from trade theory. This is not surprising, as both trade and migration are bilateral flows determined by characteristics of the two intervening locations (countries or regions) and by bilateral variables either facilitating or hindering their relationship (Borjas 1989). This paper borrows two techniques, both previously used in the European trade integration literature, to first investigate the existence of creation and diversion effects in immigration into the EU-15 and then analyse their determinants. The first technique - Truman (1969) shares - was initially used to measure trade creation

[1] The AC2004 is the group of countries which became EU members in May 2004 (Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Slovenia and Slovak Republic). The AC2007 is the group of countries which became EU members in January 2007 (Bulgaria and Romania). See Table A1 for a more detailed summary of the current restrictions to East-West migration in the EU.

and trade diversion in Europe.[2] However, the trade creation and trade diversion concepts have not been, to the best of the author's knowledge, applied to migration. The second technique - gravity models - has been one of the main empirical tools used both in assessing the trade impact of European integration[3] and in analysing bilateral migration flows, particularly in its extended form.[4] Table 1 provides a summary of some recent migration literature that has employed gravity models. It is striking that no evidence is available beyond 2003 (none beyond 2000 for the EU) and there is little evidence focussed on the EU case. In addition, most studies are cross-section and apply crude regression methods. Using a panel of around 2000 country pairs in 1986-2006 for inflows into the EU-15, the present paper fills an important gap in the literature with relevant policy implications for the enlarged EU. By incorporating recent data, the paper is also able to discuss the case of Spain, which has become one of the most important destinations in the EU-15 in the last decade.

[Table 1 here]

The gravity model can be used to identify the existence of "natural" trading partners (Wonnacott and Lutz 1989) [5] by including dummies for those groups of countries that are either inside or outside a "natural" trading bloc (Frankel 1997). A positive and significant dummy would represent a "natural" preference effect towards the region it represents. As pointed out by Wonnacott and Lutz (1989), "natural" trading blocs should lead to high trade creation and low trade diversion due to high trade volumes among "natural" trading partners prior to integration. Similarly, if Central and Eastern Europe is a "natural" member of the Single Market for labour, the estimation of a gravity model with regional dummies should return a positive and significant dummy for that region well before accession to the EU.

The paper's findings broadly support the hypothesis of "natural" membership of the Single Market for labour in the case of the CEECs, with evidence of migration creation present in 1986-2006 and mixed evidence of migration diversion throughout the period. The factors found to increase immigration

[2] See, among others, Balassa (1967, 1974), Dayal and Dayal (1977), Sellekaerts (1973), Truman (1969), Verdoorn and Meyer-zu-Schlochtern (1964), Viner (1950). A comprehensive review is provided in Marques (2008).

[3] See, among others, Brulhart and Kelly (1999), Fidrmuc (1998), Glejser and Dramais (1969), Kreinin (1969), Paas (2000), Papazoglou et al (2006), Sanz (2000).

[4] Greenwood and Hunt (2003) present a detailed review of early migration research where they also discuss the use of the gravity model in the context of migration flows. For a comprehensive survey of the migration literature, see Ghatak et al (1996).

into the EU-15 are the average income level and the own immigrant community in the destination country, common language and border, and the implementation of liberal immigration policies. Immigration decreases with unemployment in the destination country, the average income level and political freedom in the origin country, and the distance between origin and destination. The tightening of restrictions to migration only becomes significant with a two-year lag. The joint impact of a common language and migrant communities, when compared to distance and a common border, may help preserving migration channels from outside Europe. Within Europe, shorter distances and common borders become more relevant, giving a "natural" advantage to the CEECs.

The paper is organised as follows. Section 2 presents a preliminary analysis of the data on immigration flows and stocks in the EU-15 during 1986-2006. Section 3 introduces and discusses the results of applying Truman shares to the sample data. Sections 4 and 5 present respectively the benchmark gravity model to be estimated and the regression results obtained. Section 6 discusses a number of robustness checks and Section 7 concludes.

2 Data Features and Migration Trends

In order to investigate the potential for migration creation and diversion caused by the progressive integration of the CEECs in the European economy, this paper uses two types of migration data from the Eurostat NewCronos Database: (i) code 2 (immigration flows by citizenship) covers 2092 country pairs in 1986-2006; (ii) code 6 (stock of foreign population by citizenship) covers 1889 country pairs in 1986-2006. They shall be referred to as respectively "flows" and "stocks" and their behaviour throughout the sample period is shown in Figures A1 and A2 respectively.

Germany was the country receiving the highest relative inflow of migrants, with a peak of 1.8% of Germany's population in 1993 stabilising at around 0.6% from 2001 (Figure A1). Since 1997 Austria has been receiving a relative inflow above German levels. The countries and time periods involved seem to hint at some impact of East-West migration, possibly traced to the outbreak of the war in the Balkans. Another trend noticeable since 1998 is the rapid rise of relative migration inflows in Spain and Greece.

[5] The concept of "natural" trading partners was introduced by Wonnacott and Lutz (1989) based on the criteria of high trade volumes prior to integration and of geographical proximity.

Also in these countries there is some possible impact of East-West migration, particularly from Romania and Bulgaria.

Although immigration flows have been quite volatile from year to year, the stocks of foreign citizens in each EU-15 country as a share of its population have shown more of a long-term upward trend in some countries (Figure A2). The stock data shows that Germany, Austria and Belgium have the highest percentages of foreign citizens (around 8-10% in 2006). Between 1988 and 1996 there was a sharp increase in the stock of migrants in Germany and Austria, again hinting that immigration into these countries may have been associated with the changes occurring in Eastern Europe. On the contrary, Belgium seems to have a static foreign population, possibly already resident before the start of the transition process. The most noticeable increase in the share of foreign population happened in Spain, which when becoming a EU member in 1986 had less than 1% of foreign citizens in its total population and, through a steep increase in stocks accompanying the rise of inflows since 1998, reached a share of 9% of foreign citizens in its total population in 2006.

A deeper investigation requires the disaggregation of the data by country of origin of the immigrants. As the Eurostat provides data on flows from virtually all countries in the world, a meaningful analysis also requires grouping into world regions all the countries for which data is available. These are described in Table A2 and will be used throughout the paper. The dataset obtained is unbalanced, as EU-15 countries do not report data for all origin countries in all the sample years (see Table A3 for details). Nevertheless, for the whole dataset there is a total of 21959 bilateral migration flows in 1986-2006.

The share of the world regions defined in Table A2 in total flows and stocks differs across the EU-15 countries (see Tables A4 and A5).[6] The share of CEECs nationals in total inflows per EU-15 country was the highest in Austria, Germany and Spain. The share of CEECs in the stock of foreign nationals was also above the EU-15 average in those countries, as well as in Italy and Finland. However, other world regions also show high shares. The inflow of North African nationals was quite important in France, Spain, Italy, the Netherlands and Belgium. In these countries, North African immigrants also form the largest group of foreign nationals, except in Spain, where the largest group comes from South America. This region also has a large share in Portugal, although here the largest group of foreign

[6] These shares add to less than one as the data used here only covers immigration originating outside the EU-15. Hence the last row in Tables A4 and A5 represents the share of immigration originating outside the EU-15 in total immigration into EU-15 countries.

nationals comes from Sub-Saharan Africa. South Asians have a higher share in the UK. Sweden has received a high share of immigrants from the Middle East and Former Yugoslavia.

The observation that the allocation of migration inflows tends to reinforce well-established communities can be explained by theories of path-dependence.[7] Simply put, once a migrant community becomes established throughout history, that pattern is locked-in and is self-reinforcing. It is straightforward to think of several mechanisms that create self-reinforcing patterns in migration: lower informational costs and easier access to information, facilitation of travel and accommodation arrangements, recruitment of workers in the origin country by previously established self-employed migrants.[8]

All in all, the allocation of the various regions of origin during the last twenty years has differed quite substantially across the EU-15. Despite the growth of CEEC inflows in Germany, Austria and Spain, it is not clear from the analysis of raw data whether the CEECs have benefited from any preference effect that would give them a "natural" membership of the EU Single Market for labour.

3 Truman Shares

Truman (1972), p. 272-73, wrote about trade flows, *"If the increase in the partners' share of imports reflects replacement of higher cost domestic production, then one has evidence of trade creation. If it were the result of the displacement of lower cost imports from non-member countries, then it was due to trade diversion."* In the context of this paper, this assertion means that an increase in the inflows of CEECs migrants, after controlling for changes in domestic population, represents migration creation; whereas migration diversion corresponds to a change in the composition of the migration inflows, with the simultaneous increase from partner countries and reduction from non-member countries, after controlling for changes in domestic population. Hence, to distinguish between migration creation and

[7] The idea that "history matters", that is, past events condition present and future outcomes has contributed to debates in diverse fields such as international trade (McCallum 1995, Feenstra and Rauch 1999, Rauch and Trindade 2003, Papazoglou et al 2006), economic geography (Krugman 1991, 1995), industrial organisation and innovation (Antonelli 1997, Dosi and Nelson 1994, Grossman and Helpman 1993).

[8] The latter aspect is quite important in the EU context, as a loophole in the Single Market legislation allows for the free movement of self-employed persons, although the movement of workers is restricted.

migration diversion, it is necessary to look at changes in inflows from the CEECs as partners and from other world regions as non-members.

The Truman Share (TS) of migration from origin country *j* into destination country *i* in year *t* can be written as the ratio of the migration inflow from country *j* (M) to the population (POP) of the destination country *i*:

$$TS_{ijt} = \frac{M_{ijt}}{POP_{it}} \tag{1}$$

This formulation corresponds to Truman's original idea that the foreign presence could either increase globally, independently of its source, or there could be the replacement of some sources with others. If there is pure migration creation, the TS of other world regions should not be affected by an increase in the TS of the CEECs. On the contrary, if the TS of other world regions decreases when that of the CEECs increases, there is an argument for migration diversion in favour of the CEECs. To apply this concept to migration from the CEECs into the EU-15, two steps are required. First, it has to be established how the share of the CEECs in the EU-15 total population has evolved. Second, this evolution has to be compared to that of other world regions in order to verify whether the variation has followed the same or an opposite trend. A case for migration diversion can be made only if trends differ between the CEECs and the rest of the world.

Table 2 shows the change in the CEECs TS as described in equation (1) for 1986-2006 and five sub-periods. The first subperiod (1986-90) covers the years between the accession of Portugal and Spain and the fall of the Berlin Wall; the second (1991-95), third (1996-2000) and fourth (2001-04) subperiods represent a time of development of integration mostly through trade and investment liberalisation; and the fifth (2004-06) is the post-enlargement subperiod.[9] Between 1986 and 2006, the CEECs TS increased for the EU as a whole and for each EU-15 country, particularly those that initially had a low share of CEECs migrants in their population (Spain is a noticeable case). This result provides evidence in favour of migration creation. In general, there is no discernible upward trend that allows the conclusion that the CEECs TS grew more in the post-enlargement period. The peaks of growth of CEECs TS occurred in different subperiods for the various EU-15 countries and before the enlargement in 1986-90 for the EU-15

as a whole. In this way it can be argued that the enlargement alone does not explain the CEECs TS growth as they were already participating in the EU-15 labour market well before the 2004 enlargement at levels not lower than those registered after the enlargement.

[Table 2 here]

The evidence on migration creation alone is compatible with both a general increase of immigration into the EU-15 and a preference for the CEECs. If the TS of other world regions also increased, then the EU-15 became more open to immigration. But if other world regions suffered a reduction in their TS, then there was diversion away from those groups towards the CEECs. Table 3 shows the P-values of a two-sided sign test and a Wilcoxon signed-rank test.[10] For each world region, each test uses the change in TS in each EU-15 country and each sample year in the period considered so that the number of observations varies between 22 in 2004-06 and 181 in 1986-2006. The null hypothesis is that the TS of each world region varies in the same direction as that of the CEECs. When the P-values are higher than a threshold (for example, a P-value of 0.1), the sign of the change in the TS of the CEECs and of other world regions does not significantly differ. In this case there is migration creation for both the CEECs and other world regions. When the P-values are lower than 0.1, the sign of the change in the TS of the CEECs and of other world regions significantly differs. In this case there is migration creation for the CEECs and migration diversion away from other world regions.

[Table 3 here]

For the full sample period, Table 3 shows that the sign of TS changes for most world regions significantly differs from that of the CEECs (12 to 14 cases out of a total of 19). Moreover, this overall result is mostly due to the behaviour in the last years of the sample (2001-06), when the TS of the CEECs increased and the TS of most other world regions decreased (11 to 13 cases in 2001-04 and 14 to 16 cases in 2004-06). Hence for most world regions there is evidence of migration diversion, particularly in the post-enlargement period. This result differs from what was found for migration creation: whilst the TS of the CEECs has grown since the start of the sample period, only since 2001 that growth was accompanied by a significant decrease in the TS of other world regions. In sum, migration creation with respect to the CEECs is not a recent phenomenon, but migration diversion away from other world regions is.

[9] Note that the AC2004 accession occurred in May 2004. Since the data is annual, 2004 is a border year which can be included either in a pre- or in a post-enlargement period.
[10] The first simply classifies changes as negative and positive, whilst the second additionally ranks them according to magnitude.

Nevertheless, taking a twenty-year perspective, the CEECs qualify as "natural" members of the Single Market for labour.

The share analysis presented here gives an indication of the extent of migration creation and diversion, but it does not explain which characteristics of origin and destination countries may influence the outcome. Although the growing integration of the CEECs is one sensible explanation for the migration diversion found in 2001-06, it is necessary to account for other factors that may determine migration flows into the EU-15. The next section presents a gravity model approach to isolating the effects of characteristics of origin and destination countries, and of bilateral impediments and facilitators, in order to obtain the net migration trends specific to each world region.

4 Gravity Model Specification

Gravity models have been extensively used to model bilateral flows of goods and factors. The gravity model used in this paper is built around three main hypotheses supported by the migration literature (Ghatak et al 1996, Greenwood and Hunt 2003). First, bilateral migration flows are directly related to the size (GDP) of the origin and destination countries, and inversely related to the physical distance (DIST) between them, as distance increases the financial and perceived psychological costs of migrating, including costs of travel and acquiring information. Second, migration flows are a function of average income, as measured by GDP per capita (GDPPC). Migration flows should decrease with the origin country GDP per capita and increase with the destination country GDP per capita. Third, migration flows are a function of unemployment rates (UR), which proxy for the perceived probability of (not) finding a job. Migration flows should increase with the origin country unemployment rate and decrease with the destination country unemployment rate.

Other determinants of migration suggested by previous work (see Ghatak et al 1996, Greenwood and Hunt 2003) are the average years of schooling (HK),[11] an index of political environment (POL), the existing stock of migrants (STOCK) from the origin country that is already present in the destination country, and an index of migration policy reforms (RMP for restrictive policy reforms and LMP for liberal policy reforms). First, if migration leads to a "brain drain", skilled migration would occur from

countries with low average years of schooling to those with high average years of schooling, and vice-versa for unskilled migration. The opposite result would correspond to a "brain gain". Second, migration is expected to decrease with political freedom in origin countries and increase with political freedom in destination countries. Third, the stock of migrants represents networking effects having a positive impact on the flows of migrants (Rauch 1999). Fourth, restrictive migration policy reforms are expected to reduce immigration, and more liberal migration policy reforms are expected to increase immigration.

Finally, a number of dummies is included: common borders (BORDER), common language (LANG), and world regions (REGION). First, common borders facilitate movement and have also been interpreted as facilitating cultural exchanges that bring people closer together, thus are expected to have a positive impact on migration flows. Second, common languages can also proxy for a common culture and/or former colonial ties that act as an incentive to migration by lowering the psychological costs involved. Third, the REGION dummy for the origin world regions described in Table A2 controls for region-specific preferences that cannot be explained by the other factors, similarly to the approach suggested by Frankel (1997) in the context of "natural" trading blocs. In the regressions, the coefficients for each region are estimated using deviations from the sample average as suggested by, among others, Krueger and Summers (1988) and Zanchi (1998). Hence those world regions with negative coefficients would be less preferred than average and those with coefficients lower than that of the CEECs can be regarded as less preferred than the CEECs. A region bearing a positive coefficient would be a "natural" member of the Single Market for labour.

The benchmark specification of the gravity model to be estimated for migration flows from country *j* to country *i* in year *t* takes the form:

$$\begin{aligned}\ln M_{ijt} = {} & \alpha + \ln GDP_{it}\beta_1 + \ln GDP_{jt}\beta_2 + \ln GDPPC_{it}\beta_3 + \ln GDPPC_{jt}\beta_4 + UR_{it}\beta_5 + UR_{jt}\beta_6 + POL_{it}\beta_7 + POL_{jt}\beta_8 + \\ & + \ln STOCK_{ijt}\beta_9 + \ln DIST_{ij}\beta_{10} + BORDER_{ij}\beta_{11} + LANG_{ij}\beta_{12} + RMP_{it}\beta_{13} + LMP_{it}\beta_{14} + REGION_j + \delta_i + \gamma_t + u_{ijt}\end{aligned} \quad (2)$$

with δ_i the effects specific to each EU-15 country, γ_t the time effects, α the constant and u_{ijt} the i.i.d. error term. The δ_i dummies control for destination country effects, whilst the $REGION_j$ dummies control for origin country effects. Baltagi et al (2003) suggest interactions between all effects. However, in this paper their full interaction specification cannot be followed. On one hand, the panel is very unbalanced

[11] Unfortunately, this data is not available after 1999 and so the regressions for the full period exclude this variable. For comparability, the main regressions are run without human capital and this variable is introduced in section 6 for the period 1986-99 as a robustness check.

(see Table A3) and full interaction effects remove a great number of degrees of freedom. On the other hand, given the very large number of origin countries included in the regressions (see Table A2), it is computationally efficient and more meaningful to use regional dummies for origin countries instead of individual country dummies (see Table 1 for other approaches of this kind). Also a great deal of observed and unobserved heterogeneity, such as economic cycles, history and geography, is well picked up at the regional level. However, in order to investigate whether the country effects may have changed over time, the regressions are also run for the five subperiods indicated in the previous section. The sources of data and construction of variables are fully explained in Table A6.

5 Benchmark Regression Results

The benchmark regression results for equation (2) in the full 1986-2006 period and in the five subperiods described previously are provided in Table 4. The coefficients are net of effects specific to each EU-15 country and each sample year.

[Table 4 here]

5.1 Determinants of immigration flows into the EU-15

Taking GDP as a measure of country size, immigration flows increase with the size of both the origin and the recipient country. This size effect does not change much over time.

As would be expected, immigration flows into the EU-15 responded negatively to the GDP per capita of the origin country, and positively to the GDP per capita of the destination country. In particular, in 1986-2006, a 1% increase in the GDP per capita of the origin country would reduce immigration by approximately 0.3%, whereas the same increase in the case of the destination country would increase immigration by 2.1%. The push effect at the origin country, although small, is very significant and does not change much over time. However, in 2001-06 the magnitude of the pull effect of average income in EU-15 countries was less than half when compared to 1986-2000. This noticeable reduction can be linked to a process of income convergence in the last decade. The role of income differences will be investigated further in the next section.

In addition to income motives, the prospect of finding a job abroad relative to the same prospect at home is traditionally seen as a determinant of migration flows. A higher unemployment rate in the

recipient country should reduce immigration and a higher unemployment rate in the origin country should increase emigration. The first effect turns out as expected for the full 1986-2006 period, but this overall result hides two distinct periods where the magnitude of the effect is similar but the sign is reversed: pre-2001 (negative relationship) and post-2001 (positive relationship). It is possible that the post-2001 result is linked to some endogeneity of unemployment, such that the cumulative effect of the previous period is felt in the second period. Note however that the magnitude of the effect is in any case quite small (immigration flows changing around 0.03% for a 1% increase in the unemployment rate). In the next section the endogeneity issue will be further investigated. On the other hand, emigration does not respond to unemployment in the origin country. This result is explained by the fact that, in very poor countries, potential migrants may not have the resources to emigrate when they are put out of employment due to liquidity/borrowing constraints. Some evidence of this effect is provided by Ghatak et al (1996) and Hunt (2004). Although data for unemployment is not available for a large number of countries, particularly in Africa, Asia and the Middle East, the sample of origin countries is still very diverse (see Table A2). In this context, the relationship between unemployment and emigration can be positive for those with higher income and negative for those with lower income, such that the two effects cancel each other out for the entire sample.[12]

The degree of political rights and civil liberties was a significant pull factor for the EU-15 destination countries in the period 1991-2000, whilst it has become a significant push factor for the origin countries since 1996. A higher degree of political rights and civil liberties in the destination countries fosters immigration, whereas in the origin countries it decreases emigration.

In addition, the existing stock of migrants in the destination country has a consistently positive impact on the flows of migrants: a community 10% larger gives rise to inflows about 7% higher. This result is very robust over time and shows the importance of networking effects in migration. Similar results were obtained by Pedersen et al (2008) for a sample of OECD countries in 1990-2000, although in their case the effect is about half of the one found here. Given the sample differences, a comparison to the results of the present paper could suggest that the impact of migrant networks is higher in the EU-15 than in the rest of the OECD (namely North America), or that the network effect has increased over time and is

[12] Not being the main focus of the paper, this issue is not investigated further; however some supporting evidence is provided by Pedersen et al (2008) for immigration into the OECD in 1990-2000.

higher in the more recent 2001-06 period. It is likely that the difference in magnitude is due to a combination of these two effects.

Distance diminishes bilateral migration flows, as other studies using gravity models have also found for various types of bilateral flows in space, such as trade and foreign direct investment. Migration is higher between pairs of countries sharing a border, although this effect seems to have been lost since 2001. In the sample used, only the CEECs share a border with the EU-15, so a possible explanation is the rise of Spain as a major recipient country in the EU-15 and, unlike Germany or Austria, Spain does not share any border with the CEECs. On the contrary, the impact of sharing a common language is comparable in magnitude and sign to that of migrant communities and is very robust over time. Former colonies in Africa, America, Asia and Oceania share an official language with some EU-15 countries such as the UK, France, Spain and Portugal. All in all, the high impact of migrant communities and a common language may help explaining a mitigated diversion of immigration from other countries in favour of the CEECs. However, the official language variable used here is a crude measure. If there were data available on languages spoken as foreign languages, perhaps the CEECs would show a stronger position.

In the full 1986-2006 period, migration policy seems to have had an asymmetric impact: liberal policy changes have had the desired effect of increasing immigration, but restrictive policy changes show no impact on immigration levels overall. It is interesting to note that in both cases the impact of policy has changed over time. Liberal and restrictive policy changes have really only been effective during 1991-2000. Moreover, after 2001 restrictive policy changes seem to have been counterproductive. It is possible that migration policy is endogenous, to some extent reacting to observed migration flows. This issue of endogeneity is explored further in the next section.

5.2 Is Central and Eastern Europe a "natural" member of the Single Market for labour?

Returning to the question placed at the introduction, after controlling for all the factors described above, does evidence of a preference towards the CEECs still remain? If this evidence is found well before the 2004 enlargement, it can be argued that these countries are "natural" members of the EU's Single Market for labour. In the context of Table 4, a general preference towards particular origin regions - due to any unobservable factors beyond all those already accounted for - can be detected by observing the behaviour of the region-specific effects, defined with respect to the sample average. In most cases, they tend to be

either at average levels (insignificant) or below the average (negative). In the full 1986-2006 period, in addition to the CEECs, only Albania, the former USSR countries, and Oceania show above average (positive) region-specific effects.

However, only for the former USSR countries and Oceania the region-specific effects are consistently above average across all subperiods and only the former shows an overall effect above that of the CEECs. When looking at the CEEC effect across subperiods, it was the highest in 1986-90, it faded to average levels in 1991-2000 and it went back to above average levels from 2001. This result confirms what was said previously about the migration peak reached early in the sample period, stabilising throughout the 1990s and apparently increasing again in more recent years. Note, however, that this recovery occurs at least three years before the 2004 enlargement. Hence, once again there does not seem to be a well-defined post-2004 change in migration behaviour. What seems to have happened since 2001 is that the EU-15 has become more closed to immigration and in relative terms flows have been partly diverted away from the rest of the world in favour of the CEECs. It could be the case that due to the perceived need to accommodate larger flows from the new member countries the EU-15 has tightened general restrictions, similarly to the Fortress Europe concept highlighted by UNESCO. In the end, the post-2004 inflows were not as high as initially feared, to some extent also due to the reduction of income pull effects following one and a half decades of catching-up.

The effects presented in Table 4 are defined with respect to a sample that changes across subperiods due to the unbalanced nature of the panel. The position of each region with respect to the sample average may change because the sample has changed. Another way of measuring the region-specific effects would be to use the CEECs as benchmark. This alternative formulation would also have the advantage of identifying the significance of the difference between the effects for the CEECs and for the remaining regions. Although in general the choice of a particular reference group may raise questions of robustness, in this case the choice is not random. On the contrary, the paper is searching for evidence indicating the existence of a preference towards the CEECs and, if it exists, of its persistence in time.

An alternative regression defining the region-specific effects with respect to the CEECs was run and the estimated effects are shown in Table 5. The results provide additional evidence that, for the whole 1986-2006 period, all other world regions, except the former USSR countries, were less preferred than the CEECs. Breaking down this general result by subperiods, only in 1991-2000 there are four cases of a

preference level above that evidenced for the CEECs and one of them again corresponds to the former USSR countries. Hence the results seem to indicate that the opening of the EU-15 borders to the CEECs could potentially have a stronger diversion effect on non-European countries than on other European countries that were not part of the CEECs group. Turkey is however an exception, always showing significantly negative specific effects, which became more negative over time. Interestingly, it is in Germany that immigration from both Turkey and CEECs is strongest (see section 2).

[Table 5 here]

6 Robustness Checks

Although the benchmark results are broadly consistent with the findings of previous literature (see Table 1), they contain a number of caveats that require a deeper investigation. First, for some origin and destination country variables, the gap between origin and destination countries may be more relevant than each country's absolute position. Second, a measure of human capital could not be included for the whole time period as worldwide data is available only up to 1999. Third, unemployment data is not available for a number of countries, which as a consequence were excluded from the main sample. Fourth, unemployment and migration policies could be endogenous to migration flows. Finally, the robustness of the benchmark regression method is checked against alternative methods. In general, the benchmark results are robust to various model specifications (Table A7) and regression methods (Table A8).[13]

6.1 Economic and political gap between origin and destination countries

It is important to test whether migration flows depend on the characteristics of each origin and destination country in an absolute or relative manner (see Table 1 for the use of relative variables, or origin to destination ratios, in previous literature). The absolute position of each origin and destination country is given respectively by the j-variables and i-variables as shown in equation (2): GDP, GDP per capita (GDPPC), unemployment rate (UR), and the political environment index (POL). The relative position of each origin and destination country is represented by the (logged) ratio of their absolute positions (represented by D). This ratio is defined for each variable as follows: (i) $DGDP=\ln(GDP_i/GDP_j)$, (ii)

[13] Tables A7 and A8 only report the results for 1986-2006 for the sake of brevity, but the results for each subperiod are available upon request. Reference to the subperiods will be made in this section where appropriate.

DGDPPC=ln($GDPPC_i/GDPPC_j$), (iii) DUR=(UR_i/UR_j), and (iv) DPOL=(POL_i/POL_j). The modified equation is written as:

$$\ln M_{ijt} = \alpha + DGDP_{ijt}\beta_1 + DGDPPC_{ijt}\beta_2 + DUR_{ijt}\beta_3 + DPOL_{ijt}\beta_4 + \ln STOCK_{ijt}\beta_7 + \\ + \ln DIST_{ij}\beta_8 + BORDER_{ij}\beta_9 + LANG_{ij}\beta_{10} + RMP_{it}\beta_{11} + LMP_{it}\beta_{12} + REGION_j\beta_{13} + \delta_i + \gamma_t + u_{ijt} \quad (3)$$

It would be expected that favourable differences in income, unemployment and policy environment would increase the relative attractiveness of the EU-15 and thus contribute to increased migration inflows. This is in fact the case for income and policy environment (Table A7). A 1% increase in the GDP per capita gap between the destination and the origin country increases migration flows by 0.26%. However, that impact falls to 0.16% in 2001-04 and 0.11% in 2004-06. The falling impact of the income gap confirms the role of income convergence in more recent years, noticeably in some CEECs such as Slovenia and the Czech Republic, making the EU-15 relatively less attractive for income reasons. Differences in unemployment rates are not relevant as in any case the unemployment rate in the origin country bears no impact on migration. Size differences, on the other hand, have a negative impact as flows are larger between two large countries (gravity hypothesis).

Stocks, distance and liberal migration policy reforms are robust in this specification. Border, language and restrictive migration policy reforms remain significant in particular time periods and within these have the same sign as in Table 4.

6.2 Including human capital

The most consistent worldwide data on human capital stocks (average years of schooling) is provided by the Barro-Lee dataset. Unfortunately, this dataset only goes up to 1999 and in order to cover the more recent years the human capital variable had to be excluded from the benchmark regressions. Nevertheless, its inclusion does not fundamentally change the results (Table A7). Note that these results only cover the period 1986-99, so that the average impact of policy environment and reforms in migration policy is equivalent to that of Table 4 in the same time period.

The average educational level is not significant as a push factor, but it has a positive impact as a pull factor. This result implies that it is the absorptive capacity of labour markets in the EU-15 countries that matters, given the important differences in average schooling levels across the EU-15. In the period 1986-99, the cross-sectional averages of the average years of schooling range from 5 in Portugal to 10 in

Germany and Sweden. Thus, some differences in the skill distribution of the migrants can be expected according to the schooling level of the destination country.

6.3 Excluding unemployment

Data for unemployment is not available for a large number of countries, particularly in Africa, Asia and the Middle East, which may affect the results. Although the inclusion of those countries demands the exclusion of the unemployment variable, it is still worthwhile to check the robustness of the results to this modification. As Table A7 shows, there is no impact on the results.

6.4 Endogeneity

When examining the benchmark results in the period 2001-06, the issue of endogeneity arose in the case of the unemployment rate and restrictive migration policy reforms. Higher unemployment and more restrictive migration policies in the EU-15 appeared to increase immigration. This result seems more compatible with a reversed process, whereby it could be more immigration that creates higher unemployment and induces more restrictive migration policies. Hence the unemployment rate and migration policy changes are lagged to control for the possibility of endogeneity (Table A7).

The signs of unemployment or restrictive migration policy reforms in 2001-04 are corrected when lagging these variables, but it does not make a difference in 2004-06. Only when lagging both for two periods the signs are as expected in 2004-06 and the impact of restrictive migration policy reforms becomes negative for the whole sample period (1986-2006). Hence whilst the impact of liberal migration policy reforms is felt immediately, restrictive reforms and economic downturns significantly dampen immigration with a two-year lag. To some extent, restrictive migration policy can be seen as reactive. The Eastern enlargements are in any case a good example: because large inflows were anticipated, most EU-15 states implemented restrictive policies (see also Boeri 2004 on this point).

Looking closely at the policy changes carried out by the EU-15 countries in 2001-06, in all countries except Germany there was conflicting legislation that embodies both restrictive and liberal policy changes. Hence, when considered together, the step dummies for restrictive and liberal policies go hand in hand in 2001-06. For this reason, it is not possible to detect a significant contemporaneous impact of restrictive measures on immigration flows. This is a fundamental identification problem generated by

the conflicting nature of the legislation. As argued by Boeri and Brucker (2005), the fear of large migration inflows led the EU-15 countries to a "race-to-the-bottom" allowed by the lack of policy coordination at the EU level. Nevertheless, discounting the impact of the latest years, which will be felt with a lag, the overall impact of national migration policies in the EU-15 seems to be more of a liberal nature. This result is in accordance to the idea that over 1986-2006 there has been migration creation in the EU-15.

6.5 Alternative regression methods

Although the full time period of the sample (1986-2006) contains data for 20 years of migration inflows, due to reporting deficiencies by each EU-15 country the panel is imbalanced and contains gaps, so that the time intervals are not equally spaced (see Table A3). The benchmark regression method, OLS with Panel-Corrected Standard Errors (PCSE), is adequate when the time-series dimension is not very long for each cross-sectional unit, and certainly shorter than the cross-sectional dimension, as is the case in this sample. However, in order to verify the robustness of the results to the use of this particular method, Table A8 presents the results obtained with three alternative methods: (i) random effects Generalised Least Squares (GLS); (ii) Feasible Generalised Least Squares (FGLS) with heterogeneous panels; (iii) Weighted Least Squares (WLS). In general, the results remain qualitatively unchanged and the quantitative differences in the magnitude of coefficients are negligible.

Random effects GLS does not account for cross-panel correlation and so returns higher standard errors. Even so the baseline results remain very robust. On the other hand, the FGLS estimator with heterogeneous panels is a very efficient estimator but as it places more emphasis on the time-series component it drops those observations that only occur once for the same cross-sectional unit (a total of 100 observations, or 100 country-pairs, are lost). In general, those regression methods that require more consistent time-series data (dynamic panels, for example) are not appropriate given the characteristics of the dataset used. Of more interest is the WLS, which places more emphasis on the cross-sectional properties of the data, using the variance of each group as weights. The standard errors of the WLS estimation are roughly in line with those returned by FGLS and PCSE.

7 Conclusions

This paper investigated, using migration inflows into the EU-15 in 1986-2006, whether there is any evidence, of a preference towards the CEECs that makes them "natural" members of the Single Market for labour. As East-West integration proceeded, and more recently the enlargements of May 2004 and January 2007 took place, there might have been migration creation towards the integrating CEECs, but also migration diversion from the rest of the world towards the CEECs. The paper's findings reveal that, after controlling for a range of factors, the inflows of CEECs citizens may have negatively affected inflows from other world regions, although the evidence is somewhat mixed in time and space. Integration of the CEECs seems to have had a weaker impact on the former USSR countries and on Oceania, but Turkey seems to have been negatively affected. Also the negative impact is stronger after 2001. Hence there is some evidence of the formation of a Fortress Europe liberalising migration within its borders but keeping restrictions towards outsiders. However, due to the presence of strong inflows from the CEECs over the course of twenty years, there is some basis for arguing in favour of their "natural" membership of the Single Market for labour.

The gravity estimation shows that the factors increasing migration inflows into the EU-15 are the average income level and the own immigrant community in the destination country, a common language and border, and the implementation of liberal immigration policies; whilst the factors found to decrease those flows are the unemployment rate in the destination country, the average income level and political freedom in the origin country, and the distance between origin and destination countries. The paper also shows that national migration policies have an asymmetric impact on immigration, as the tightening of restrictions to migration only becomes significant with a two-year lag. These variables explain why some EU-15 countries are more sought after than others, why the distribution of migration stocks is remarkably stable and self-reinforcing, and why immigration from other world regions may suffer mitigated diversion in favour of the CEECs. The common (official) language is largely the product of former colonial relationships. These took precedence over East-West integration and were already firmly established when the CEECs started integrating with the EU-15. Language and migrant communities have a significant impact compared to sharing a border with, or being at a short distance from, the EU-15, and

this may help preserving migration channels from outside Europe. Within Europe, shorter distances and common borders become more relevant, giving a "natural" advantage to the CEECs.

Hence, the removal of all restrictions to the free movement of workers from the new member countries, by 2011 and 2013 at most for the May 2004 and the January 2007 enlargements respectively, may be expected to reinstate the CEECs "normal" membership of the Single Market for labour, although with a differentiated impact for each EU-15 country and each world region.

References

Antonelli, C. (1997) The Economics of Path-Dependence in Industrial Organization, *International Journal of Industrial Organization*, 15, 643-75

Balassa, B. (1967) Trade Creation and Trade Diversion in the European Common Market, *Economic Journal*, 77, 305, 1-21

Balassa, B. (1974) Trade Creation and Trade Diversion in the European Common Market: An Appraisal of the Evidence, *Manchester School of Economic and Social Studies*, 42, 2, 93-135

Baltagi, B., Egger, P. and Pfaffermayr, M. (2003) A Generalized Design for Bilateral Trade Flow Models, *Economics Letters*, 80(3), 391-97

Beine, M., Docquier, F. and Rapoport, H. (2007), Measuring International Skilled Migration: A New Database Controlling for Age of Entry, *World Bank Economic Review*, 21 (2), 249-54

Boeri, T. (2004) New Citizens, Old Borders, *Finance & Development*, 36-37

Boeri, T. and Brucker, H. (2005) Why Are Europeans So Tough on Migrants?, *Economic Policy*, 20(44), 629-703

Borjas, J. G. (1989) Economic Theory and International Migration, *International Migration Review*, 23, 457-85

Brulhart, M. and Kelly, M. (1999) Ireland's Trade Potential with Central and Eastern European Countries: A Gravity Study, *Economic and Social Review*, 30, 2, 159-74

Dayal, R. and Dayal, N. (1977) Trade Creation and Trade Diversion: New Concepts, New Methods of Measurement, *Weltwirtschaftliches Archiv*, 113

Dosi, G. and Nelson, R. (1994) An Introduction to Evolutionary Theories in Economics, *Journal of Evolutionary Economics*, 4, 153-72

Feenstra, R. and Rauch, J. (1999), Symposium on Business and Social Networks in International Trade, *Journal of International Economics*, 48(1), 1-6

Fertig, M. (2001), The Economic Impact of EU Enlargement: Assessing the Migration Potential, *Empirical Economics*, 26, 707-20

Fidrmuc, J. (1998) Application of Gravity Models to Commodity Groups and Trade Projections between the EU and the CEEC, *mimeo, Institute for Advanced Studies, Vienna*

Frankel, J. (1997) *Regional Trading Blocs in the World Economic System*, Institute for International Economics, Washington DC

Gallardo-Sejas, H., Gil-Pareja, S., Llorca-Vivero, R. and Martínez-Serrano, J. (2006) Determinants of European Immigration: a Cross-Country Analysis, *Applied Economics Letters*, 13(12), 769-73

Ghatak, S, Levine, P., Price, S (1996) Migration Theories and Evidence: An Assessment, *Journal of Economic Surveys*, 10(2), 159-89

Glejser, H. and Dramais, A. (1969) A Gravity Model of Interdependent Equations to Estimate Flow Creation and Diversion, *Journal of Regional Science*, 9, 3

Greenwood, M. and Hunt, G. (2003) The Early History of Migration Research, *International Regional Science Review*, 26(1), 3-37

Grossman, G. and Helpman, E. (1993) Innovation and Growth in the Global Economy, MIT Press, Canbridge (MA)

Helliwell, J. (1997) National Borders, Trade and Migration, *Pacific Economic Review*, 2(3), 165-85

Hunt, J. (2004) Are Migrants More Skilled Than Non-migrants? Repeat, Return and Same Employer Migrants, *Canadian Journal of Economics*, 37(4), 830-49

Karemera, D., Oguledo, V. and Davis, B. (2000), A Gravity Model Analysis of International Migration to North America, *Applied Economics*, 32, 1745-55

Kraus, M. and Schwager, R. (2003) EU Enlargement and Immigration, *Journal of Common Market Studies*, 42(2), 165-81

Krueger, A. and Summers, L. (1988) Efficiency Wages and the Interindustry Wage Structure, *Econometrica*, 56, 259-93

Krugman, P. (1991) *Geography and Trade*, MIT Press, Cambridge (MA)

Krugman, P. (1995) *Development, Geography and Economic Theory*, MIT Press, Cambridge (MA)

Kumo, K. (2007) Inter-regional Population Migration in Russia: Using an Origin-to-Destination Matrix, *Post-Communist Economies*, 19 (2), 131-52

Marques, H. (2008) Trade and Factor Flows in a Diverse EU: What Lessons for the Eastern Enlargements?, *Journal of Economic Surveys*, 22(2), 364-408

McCallum, J. (1995) National Borders Matter: Canada-US Regional Trade Patterns, *American Economic Review*, 85, 615-23

Paas, T. (2000) The Gravity Approach for Modelling International Trade Patterns for Economies in Transition, *International Advances in Economic Research*, 6, 4, 633-48

Papazoglou, C., Pentecost, E. and Marques, H. (2006) A Gravity Model Forecast of the Potential Trade Effects of EU Enlargement: Lessons from 2004 and Path-Dependency in Integration, *World Economy*, 29 (8), 1077-89

Pedersen, P., Pytlikova, M. and Smith, N. (2008) Selection and Network Effects: Migration Flows into OECD Countries 1990-2000, *European Economic Review*, 52, 1160-86

Rauch, J. (1999) Networks versus markets in international trade, *Journal of International Economics*, 48(1), 7-35

Rauch, J. and Trindade, V. (2003) Information, International Substitutability and Globalization", *American Economic Review*, 93, 775-91

Sanz, F. (2000) A Kalman Filter-Gravity Equation Approach to Assess the Trade Impact of Economic Integration: The Case of Spain, 1986-92, *Weltwirtschaftliches Archiv*, 136, 1, 84-110

Sellekaerts, W. (1973) How Meaningful Are Empirical Studies on Trade Creation and Trade Diversion?, *Weltwirtschaftliches Archiv*, 109

Shen, J. (1999) Modelling Regional Migration in China: Estimation and Decomposition, *Environment and Planning*, 31, 1223-38

Truman, E. (1969) The EEC: Trade Creation and Trade Diversion, *Yale Economic Essays*

Truman, E. (1972) The Production and Trade of Manufactured Products in the EEC and EFTA: A Comparison, *European Economic Review*, 3, 271-90

UNESCO Courier (2001) Fortress Europe Bids You Welcome - Immigration Policy, September

Verdoorn, P. and Meyer-zu-Schlochtern, F. (1964) Trade Creation and Trade Diversion in the Common Market, In *Integration Europeene Et Realite Economique*, Vol. (Ed, Brugmans, H.) de Tempel, Bruges, pp. 95-137

Viner, J. (1950) *The Customs Union Issue*, Stevens and Sons, London

Wonnacott, P. and Lutz, M. (1989) Is there a Case for Free Trade Areas?, in: Schott, J. (ed.) *Free Trade Areas and US Trade Policy*, Washington DC: Institute for International Economics, 59-84

Zanchi, L. (1998) Interindustry Wage Differentials in Dummy Variable Models, *Economics Letters*, 60(3), 297-301

Table 1: Use of gravity models in some recent migration literature					
	Sample period	***Geographical units***	***Regression method***	***Dependent variable***	***Independent variables (sign of significant coefficients)***
Ashby (2007)	2000	Interregional: USA states	Cross-section with spatial dependence	Migration rate	Economic freedom (+), population (+), density (-), income (+), employment growth (+), retired (+), heating days (+), precipitation (-), distance (-)
Beine et al (2007)	1990 and 2000	International: worldwide flows into OECD countries	Panel OLS with dummy for 2000	Inflows of skilled migrants	GDP per capita ratio (+), distance (+), colonial link (-), linguistic proximity (-), destination social expenditure (+), destination education expenditures (-), openness to immigration (-), origin democracy index (+), origin public education expenditure (+)
Fertig (2001)	1960-94	International: flows from OECD countries into Germany	Panel GLS with origin country dummies	Migration rate	Per capita income ratio (+), destination employment (+), origin employment (-), lagged migration rate (-), stock of migrants, guest worker dummy, EU free movement dummy (+)
Gallardo-Sejas (2006)	2000	International: worldwide flows into 13 EU countries	Cross-section OLS	Stock of immigrants	Population (+), GDP per capita (+), distance (-), common language (+), common border, non-landlocked (+), share of young population, origin schooling, destination schooling (+), origin civil liberties (-), unemployment (+), origin inflation (+), destination inflation (-), origin GINI (+), destination GINI (-), trade (+), destination welfare state (+)
Helliwell (1997)	1991	International: USA into Canada Interregional: Canadian provinces	Cross-section OLS	Migration inflows	Population (+), distance (-), origin income (-), destination income (+)
Karemera et al (2000)	1976-86	International: worldwide flows into North America	Panel with time and country pair fixed effects and origin region dummies	Migration inflows	Distance (-), origin population (+), destination population (-), origin income (+), destination income (+), origin inflation (-), destination inflation, origin unemployment, destination unemployment (+), origin finance ratings (+), origin political instability (-), origin political rights (-), origin civil liberty (-), origin relative freedom (+), immigration policy (-), common border (+), common language, population density (+)
Kumo (2007)	2003	Interregional: Russian regions	Cross-section OLS	Total migration flows	Distance (-), population (+), share of young (-), share of elderly, gender ratio (+), paved roads (+), average income, poverty index, telephone facilities, privatised houses, common border (+), regional dummies
Pedersen et al (2008)	1990-2000	International: worldwide flows into OECD countries	Panel fixed effects for destination country, WLS, GEE with destination or country pair dummies	Migration inflows	Stock of migrants (+), common border (+), common language (+), colony dummy (+), distance (-), trade (+), population ratio (+), destination GDP per capita (-), origin GDP per capita (-), destination unemployment (-), origin unemployment, destination social expenditure (+), origin illiteracy (-), freedom house index (-)
Shen (1999)	1985-90	Interregional: Chinese provinces	Panel OLS	Total migration flows	Distance (-), population (+), GNP growth rate (+), illiteracy (-), agricultural employment (-), population growth (-), population density (-)

Table 2: Change in the Truman Share of the CEECs (%)						
	1986-2006	***1986-90***	***1991-95***	***1996-2000***	***2001-04***	***2004-06***
Austria	4.74			0.61	13.37	1.79
Belgium	11.52	23.96	15.65	21.88	***-19.03***	
Germany	6.33	34.09	***-9.00***	***-2.41***	9.07	6.81
Denmark	12.03	10.17	1.95	17.38	6.09	34.24
Spain	92.73		***-5.10***	222.40	44.44	21.81
Finland	28.32	53.41	44.29	0.97	22.12	30.74
France	17.36	28.74	11.53	11.05	17.19	14.70
Greece	15.76	22.82	***-0.89***	22.67	22.33	13.86
Italy	58.14			69.30	44.19	
Netherlands	17.77	38.98	***-2.41***	13.10	29.43	45.07
Portugal	37.33		***-38.14***	50.84	38.47	104.02
Sweden	8.58	12.11	***-15.27***	0.25	26.90	56.52
United Kingdom	45.98	***-0.24***	37.95	65.39	96.59	73.69
EU-15	10.28	33.12	***-8.23***	6.04	16.88	6.22

Table 3: P-values for inequality of signs between the change in the Truman Shares of the CEECs and other world regions in the EU-15 (Ho: same sign)						
	Two-sided sign test					
	1986-2006	***1986-90***	***1991-95***	***1996-2000***	***2001-04***	***2004-06***
turkey	0.00	0.00	0.88	0.02	0.05	0.00
albania	1.00	1.00	0.17	0.88	0.42	0.28
exyugo	0.00	1.00	0.02	0.00	0.01	0.00
exussr	0.26		0.02	0.77	0.70	0.00
tiny	0.08	0.17	0.58	0.54	0.71	1.00
eastaf	0.70	0.85	0.02	0.06	0.05	0.21
noraf	0.00	0.21	0.30	0.12	0.05	0.00
cenaf	0.08	0.42	0.10	0.00	1.00	0.03
souaf	0.00	0.48	0.67	1.00	0.12	0.00
westaf	0.00	0.86	0.47	0.21	0.24	0.00
noram	0.00	0.05	0.20	0.00	0.05	0.02
cenam	0.03	0.26	0.65	0.25	0.05	0.03
souam	0.03	0.31	0.38	0.32	0.00	0.02
eastas	0.29	1.00	0.11	0.48	0.05	0.00
seastas	0.07	1.00	0.38	0.20	0.05	0.00
souas	0.13	0.22	0.20	0.21	0.12	0.15
mideast	0.00	0.12	0.47	0.33	0.00	0.00
oce	0.32	1.00	0.56	1.00	0.05	0.02
# p-values < 0.1	***12***	***2***	***3***	***5***	***11***	***14***
	Wilcoxon signed-rank test					
	1986-2006	***1986-90***	***1991-95***	***1996-2000***	***2001-04***	***2004-06***
turkey	0.00	0.00	0.83	0.00	0.01	0.00
albania	0.17	0.69	0.00	0.28	0.19	0.06
exyugo	0.01	0.86	0.00	0.00	0.00	0.00
exussr	0.42		0.00	0.38	0.10	0.00
tiny	0.55	0.15	0.86	0.63	0.87	0.78
eastaf	0.33	0.47	0.03	0.01	0.01	0.02
noraf	0.00	0.16	0.10	0.03	0.00	0.00
cenaf	0.35	0.47	0.05	0.01	0.90	0.10
souaf	0.00	0.44	0.92	0.23	0.00	0.00
westaf	0.08	0.75	0.73	0.44	0.22	0.00
noram	0.00	0.00	0.34	0.01	0.00	0.00
cenam	0.03	0.51	0.26	0.07	0.01	0.00
souam	0.00	0.26	0.86	0.06	0.00	0.00
eastas	0.02	0.75	0.25	0.26	0.00	0.00
seastas	0.01	0.74	0.42	0.06	0.01	0.00
souas	0.01	0.22	0.96	0.30	0.02	0.03
mideast	0.00	0.15	0.57	0.19	0.00	0.00
oce	0.02	0.41	0.96	0.58	0.00	0.00
# p-values < 0.1	***14***	***2***	***5***	***9***	***13***	***16***

Table 4: Benchmark regression results for immigration by citizenship and subperiods						
	1986-2006	***1986-90***	***1991-95***	***1996-2000***	***2001-04***	***2004-06***
lgdpi	0.289*** (0.027)	0.369*** (0.103)	0.438*** (0.053)	0.160*** (0.043)	0.250*** (0.045)	0.329*** (0.050)
lgdpj	0.232*** (0.017)	0.243*** (0.064)	0.230*** (0.028)	0.226*** (0.025)	0.198*** (0.027)	0.302*** (0.030)
lgdppci	2.104*** (0.176)	2.571* (1.396)	2.250*** (0.382)	2.756*** (0.239)	0.998*** (0.280)	0.878* (0.471)
lgdppcj	-0.311*** (0.030)	-0.065 (0.087)	-0.339*** (0.053)	-0.300*** (0.049)	-0.269*** (0.050)	-0.326*** (0.058)
uri	-0.024*** (0.005)	-0.021** (0.010)	-0.011 (0.009)	-0.036*** (0.008)	0.030*** (0.008)	0.030** (0.014)
urj	0.002 (0.003)	-0.011 (0.013)	0.006 (0.005)	0.007 (0.005)	-0.006 (0.005)	-0.009 (0.007)
poli	0.090 (0.101)	-0.485 (0.300)	0.505** (0.201)	1.449*** (0.198)	0.323 (0.235)	0.000 (0.000)
polj	-0.045*** (0.013)	0.057 (0.041)	-0.015 (0.026)	-0.051** (0.023)	-0.049** (0.024)	-0.060** (0.025)
lstocks	0.708*** (0.014)	0.775*** (0.045)	0.612*** (0.021)	0.685*** (0.019)	0.801*** (0.023)	0.741*** (0.031)
ldist	-1.930*** (0.315)	2.840 (2.582)	-3.711*** (0.589)	-2.502*** (0.413)	-1.174*** (0.446)	-1.817*** (0.428)
border	0.040** (0.020)		0.149*** (0.029)	0.076*** (0.025)	-0.032 (0.026)	-0.023 (0.022)
lang	0.668*** (0.088)	0.419 (0.257)	0.836*** (0.130)	0.525*** (0.138)	0.709*** (0.138)	0.592*** (0.182)
rmp	-0.009 (0.008)		-1.322*** (0.139)	-0.379*** (0.094)	0.021** (0.010)	0.023*** (0.008)
lmp	0.030*** (0.008)	-0.085 (0.211)	0.417*** (0.095)	0.075*** (0.027)	-0.009 (0.015)	0.011 (0.010)
Constant	-26.391*** (1.975)	-45.544*** (14.207)	-27.895*** (4.021)	-30.699*** (2.651)	-17.887*** (3.263)	-18.940*** (5.612)
Region dummies						
ceecs	0.342*** (0.075)	1.129** (0.523)	-0.090 (0.125)	0.097 (0.100)	0.537*** (0.102)	0.575*** (0.092)
turkey	-0.426*** (0.075)	-0.402 (0.266)	-0.225 (0.148)	-0.208 (0.134)	-0.586*** (0.128)	-0.725*** (0.140)
albania	0.284** (0.130)	-0.202 (0.603)	0.050 (0.215)	0.254 (0.220)	0.279* (0.147)	0.211 (0.162)
exyugo	0.096 (0.188)		0.638 (0.463)	0.146 (0.233)	0.058 (0.171)	0.010 (0.311)
exussr	0.485*** (0.068)		0.635*** (0.153)	0.470*** (0.091)	0.349*** (0.094)	0.268*** (0.099)
tiny	-0.242** (0.117)	-0.328 (0.421)	-0.418* (0.229)	-0.492*** (0.176)	-0.130 (0.155)	0.250* (0.151)
eastaf	-0.079 (0.244)	0.898 (0.671)	-0.543 (0.352)			
noraf	-0.254*** (0.061)	0.433** (0.204)	-0.407*** (0.100)	-0.401*** (0.089)	-0.171* (0.103)	-0.295** (0.122)
souaf	-0.277*** (0.094)		-0.196 (0.161)	-0.236* (0.143)	-0.154 (0.126)	-0.107 (0.145)
westaf	-0.225 (0.192)		-0.541*** (0.192)	-0.288 (0.264)		
noram	0.015 (0.084)	-0.368* (0.201)	0.250** (0.122)	0.197* (0.106)	-0.168 (0.116)	-0.119 (0.144)
cenam	-0.194*** (0.062)	-0.463* (0.252)	-0.233** (0.097)	-0.106 (0.080)	-0.132 (0.090)	-0.251** (0.102)

souam	0.055 (0.052)	-0.420 (0.279)	0.150 (0.093)	0.122* (0.071)	0.125* (0.065)	-0.022 (0.075)
eastas	0.071 (0.076)	-0.555* (0.287)	0.251** (0.117)	0.218** (0.099)	0.037 (0.122)	-0.070 (0.114)
seastas	0.020 (0.062)	-0.274 (0.230)	0.031 (0.110)	0.075 (0.091)	-0.094 (0.078)	0.101 (0.085)
souas	-0.238*** (0.076)	-0.124 (0.195)	-0.023 (0.111)	-0.242** (0.119)	-0.284** (0.121)	-0.418*** (0.148)
mideast	0.110 (0.078)	0.640*** (0.208)	0.065 (0.102)	-0.152 (0.110)	0.008 (0.103)	0.005 (0.104)
oce	0.457*** (0.093)	0.036 (0.376)	0.606*** (0.156)	0.545*** (0.126)	0.328*** (0.115)	0.588*** (0.122)
EU-15 (countryi) dummies F-test	561.60***	3.91	31.90***	474.75***	62.88***	64.54***
Time dummies F-test	259.81***	3.57	98.89***	53.29***	10.11**	10.23***
Observations	5069	398	1125	1641	1202	1117
Country pairs	712	135	383	541	634	433
R-squared	0.8923	0.9299	0.9131	0.8958	0.9358	0.9326
Chi-squared	21435.91***	3100.48***	8685.74***	11137.53***	12360.06***	9784.73***
NOTE: All regressions carried out by PCSEs (Panel-Corrected Standard Errors) with robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The region dummies are defined as deviations from the sample average. All F-tests reported are transformed Wald statistics based on the use of the robust variance-covariance matrices.						

Table 5: Regression results using regional dummies defined with respect to the CEECs						
	1986-2006	***1986-90***	***1991-95***	***1996-2000***	***2001-04***	***2004-06***
Region dummies						
turkey	-0.768*** (0.088)	-1.532*** (0.346)	-0.135 (0.163)	-0.305* (0.165)	-1.122*** (0.157)	-1.300*** (0.160)
albania	-0.058 (0.141)	-1.331** (0.591)	0.140 (0.223)	0.157 (0.243)	-0.258 (0.165)	-0.364** (0.177)
exyugo	-0.246 (0.201)		0.728 (0.494)	0.049 (0.256)	-0.479** (0.189)	-0.565* (0.327)
exussr	0.143* (0.083)		0.725*** (0.150)	0.373*** (0.117)	-0.188 (0.134)	-0.307** (0.134)
tiny	-0.584*** (0.120)	-1.457*** (0.445)	-0.329 (0.238)	-0.589*** (0.179)	-0.666*** (0.166)	-0.325** (0.154)
eastaf	-0.421 (0.275)	-0.232 (1.023)	-0.453 (0.404)			
noraf	-0.596*** (0.085)	-0.696 (0.424)	-0.317** (0.141)	-0.498*** (0.125)	-0.708*** (0.147)	-0.869*** (0.165)
souaf	-0.619*** (0.131)		-0.106 (0.221)	-0.333* (0.185)	-0.691*** (0.177)	-0.682*** (0.187)
westaf	-0.567** (0.223)		-0.451* (0.252)	-0.385 (0.303)		
noram	-0.327*** (0.108)	-1.497** (0.626)	0.340* (0.174)	0.100 (0.140)	-0.705*** (0.157)	-0.694*** (0.165)
cenam	-0.536*** (0.104)	-1.593** (0.709)	-0.143 (0.176)	-0.204 (0.138)	-0.669*** (0.147)	-0.826*** (0.146)
souam	-0.287*** (0.102)	-1.549** (0.769)	0.239 (0.176)	0.025 (0.139)	-0.411*** (0.145)	-0.597*** (0.138)
eastas	-0.271** (0.112)	-1.684** (0.744)	0.341* (0.183)	0.121 (0.154)	-0.499*** (0.174)	-0.645*** (0.152)
seastas	-0.322*** (0.106)	-1.403* (0.720)	0.121 (0.187)	-0.022 (0.149)	-0.631*** (0.152)	-0.474*** (0.144)
souas	-0.580*** (0.112)	-1.253** (0.615)	0.067 (0.175)	-0.339** (0.163)	-0.820*** (0.177)	-0.993*** (0.196)
mideast	-0.232** (0.098)	-0.489 (0.413)	0.155 (0.139)	-0.249* (0.138)	-0.529*** (0.144)	-0.570*** (0.125)
oce	0.115 (0.131)	-1.093 (0.862)	0.696*** (0.228)	0.448** (0.179)	-0.208 (0.179)	0.013 (0.166)

NOTE: All regressions carried out by PCSEs (Panel-Corrected Standard Errors) with robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The region dummies are defined as deviations from the CEECs (omitted category). All other coefficients are the same as in Table 3 so were omitted from this table. All F-tests reported are transformed Wald statistics based on the use of the robust variance-covariance matrices.

Appendix

Figure A1: Immigration flows as a share of the recipient country's population (code(2))

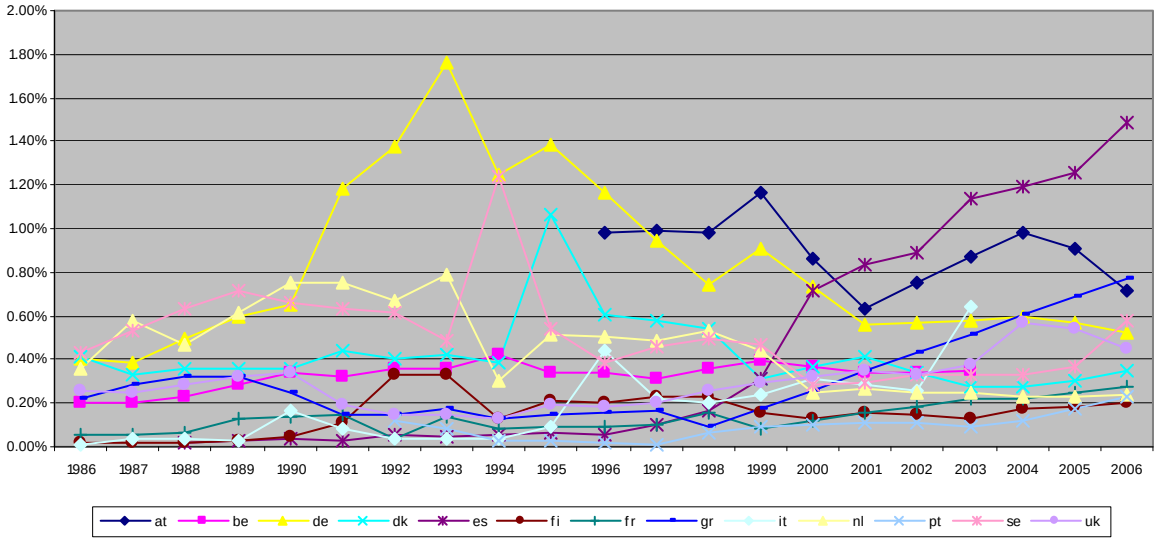

Figure A2: Stock of foreign citizens as a share of the recipient country's population (code (6))

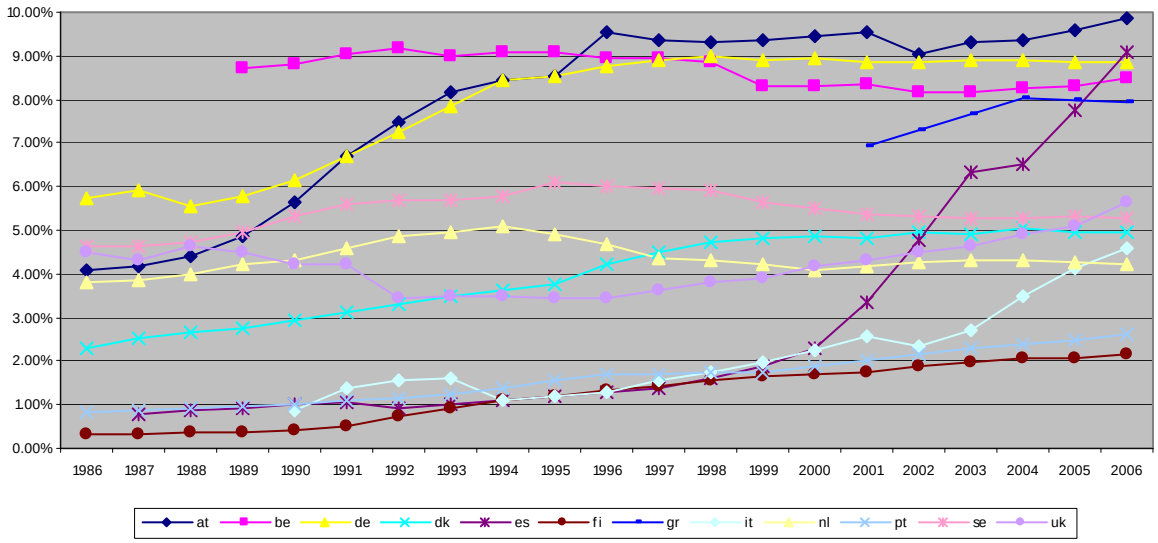

Table A1: Summary of current restrictions to East-West migration in the EU	
EU-15 Countries	***Level of Restrictions***
Austria	AC2004 + AC2007: work permit system until at least 2009
Belgium	AC2004 + AC2007: work permit system with some flexibility for regions and sectors in need of workers
Germany	AC2004 + AC2007: work permit system until at least 2009
Denmark	AC2004 + AC2007: work permit system with job search facility up to 6 months until 2009
Spain	AC2004: no restrictions AC2007: work permit system until 2009
Finland	AC2004 + AC2007: no restrictions
France	AC2004 + AC2007: work permit system with fast-tracking facility for some sectors in need of workers
Greece	AC2004: no restrictions AC2007: work permit system
Ireland	AC2004: no restrictions (but no access to benefits for two years) AC2007: work permit system
Italy	AC2004: no restrictions AC2007: work permit system for some workers
Luxembourg	AC2004 + AC2007: work permit system with fast-tracking facility for some sectors in need of workers
Netherlands	AC2004 + AC2007: work permit system with fast-tracking facility for some sectors in need of workers
Portugal	AC2004: no restrictions AC2007: work permit system
Sweden	AC2004 + AC2007: no restrictions
United Kingdom	AC2004: no restrictions (but registration compulsory and no access to benefits for at least a year) AC2007: work permit system for skilled workers, 20 000 quota for unskilled workers, part-time work allowed for students, and no restrictions for self-employed
Note: AC2004 comprises the countries that became EU members in May 2004 - Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Slovenia and Slovak Republic. AC2007 comprises the countries that became EU members in January 2007 - Bulgaria and Romania.	

Table A2: Origin Countries grouped by World Regions	
World Regions	***Countries***
CEECS (Central and Eastern European Countries)	Bulgaria*, Czech Republic*, Estonia*, Hungary*, Lithuania*, Latvia*, Poland*, Romania*, Slovenia*, Slovak Republic
TURKEY	Turkey*
ALBANIA	Albania*
EXYUGO (Former Yugoslavia)	Bosnia and Herzegovina**, Croatia**, FYROM*, Serbia and Montenegro
EXUSSR (Former Soviet Union)	Armenia*, Azerbaijan*, Belarus*, Georgia*, Moldova*, Russian Federation*, Ukraine*, Kazakhstan*, Kyrgyzstan*, Tajikistan**, Turkmenistan**, Uzbekistan**
TINY	Andorra, Cyprus*, Faroe Islands, Gibraltar, Malta*, Monaco, San Marino
EASTAF (East Africa)	Burundi**, Djibouti**, Eritrea, Ethiopia*, Kenya**, Rwanda**, Somalia, Uganda**, Tanzania**
NORAF (North Africa)	Algeria*, Egypt*, Libya**, Morocco*, Tunisia*
CENAF (Central Africa)	Cameroon**, Central African Republic**, Chad**, Democratic Republic of the Congo**, Congo**, Gabon**, Equatorial Guinea**, Sao Tome and Principe**, Zaire
SOUAF (South Africa)	Angola**, Botswana, Comoros**, Lesotho, Madagascar**, Mauritius*, Malawi**, Mayotte, Mozambique**, Namibia, Seychelles**, St. Helena, Swaziland, South Africa*, Zambia**, Zimbabwe**
WESTAF (West Africa)	Burkina Faso**, Benin**, Côte d'Ivoire*, Cape Verde**, Gambia**, Ghana**, Guinea**, Guinea Bissau**, Liberia**, Mali**, Mauritania**, Niger**, Nigeria**, Senegal**, Sierra Leone**, Sudan**, Togo**, Western Sahara
NORAM (North America)	Bermuda, Canada*, Greenland, St. Pierre and Miquelon, United States Minor Outlying Islands, United States*
CENAM (Central America)	Anguilla, Antigua and Barbuda**, Aruba, Bahamas*, Barbados*, Belize*, British Virgin islands, Cayman Islands, Costa Rica*, Cuba, Dominica**, Dominican Republic*, El Salvador*, Grenada**, Guatemala**, Haiti**, Honduras**, Jamaica*, Mexico*, Montserrat, Netherland Antilles, Nicaragua*, Panama*, Puerto Rico, Saint Lucia, Saint Vincent and the Grenadines, St. Kitts and Nevis**, Trinidad and Tobago*, Turks and Caicos Islands, US Virgin Islands
SOUAM (South America)	Argentina*, Bolivia*, Brazil*, Chile*, Colombia*, Ecuador*, Falkland Islands, Guyana**, Paraguay*, Peru*, South Georgia and the South Sandwich Islands, Suriname*, Uruguay*, Venezuela*
EASTAS (East Asia)	China (excluding Hong Kong)*, Hong Kong, Japan*, Taiwan**
SEASTAS (Southeast Asia)	Brunei Darussalam**, Cambodia**, East Timor, Indonesia**, Korea (North), Korea (South)*, Lao**, Macau, Malaysia*, Mongolia**, Myanmar, Philippines*, Singapore*, Thailand*, Vietnam**
SOUAS (South Asia)	Afghanistan**, Bangladesh*, Bhutan**, British Indian Ocean Territory, India**, Maldives**, Nepal**, Pakistan*, Sri Lanka*
MIDEAST (Middle East)	Bahrain*, Iran**, Iraq, Israel*, Jordan**, Kuwait**, Lebanon**, Oman**, Palestinian Authority, Qatar**, Saudi Arabia**, Syrian Arab Republic*, United Arab Emirates**, Yemen**
OCE (Oceania)	Antarctica, Australia*, American Samoa, Bouvet Island, Christmas Islands, Cocos Islands, Cook Islands, Federated States of Micronesia, Fiji*, French Polynesia, French southern territories, Guam, Heard and McDonald Islands, Kiribati, Marshall Islands, Nauru, New Caledonia, New Zealand*, Niue, Norfolk Island, Northern Mariana Islands, Palau, Papua New Guinea**, Pitcairn, Solomon Islands*, Tokelau, Tonga**, Tuvalu, Vanuatu**, Wallis and Futuna Islands, Western Samoa
*Note: * countries for which unemployment data is available. ** additional countries for which all other data is available. For the remaining countries, immigration data is available but data for at least one dependent variable other than unemployment is not available.*	

Table A3: Data on immigration flows by citizenship (code (2)) across time and recipient country						
Destination country	***Time period***	***Origin countries (min – max)***	***Obs***	***Mean***	***Min***	***Max***
Austria	1996-2006	4 – 147	1136	405	1	13851
Belgium	1986-2003	14 – 147	712	440	1	8444
Germany	1986-2006	24 – 167	1736	5025	1	258956
Denmark	1986-2006	46 – 142	2411	135	1	16156
Spain	1988-2006	28 – 164	2192	1545	1	131457
Finland	1986-2006	40 – 124	1935	65	1	3078
France	1986-2006	41 – 162	1367	820	1	28554
Greece	1986-2006	58 – 125	1481	178	1	36841
Italy	1986-2003	15 – 162	1283	1072	1	74463
Netherlands	1986-2006	44 – 152	2850	330	1	12821
Portugal	1992-2006	3 – 108	1045	94	1	7063
Sweden	1986-2006	113 – 148	2837	222	1	25655
United Kingdom	1986-2006	2 – 95	974	3076	23	59771
EU			21959	946	1	258956

Table A4: Share of world regions in total immigration flows (%, code (2), 1986-2006 average)														
	at	***be***	***de***	***dk***	***es***	***fi***	***fr***	***gr***	***it***	***nl***	***pt***	***se***	***uk***	***EU***
ceecs	17.29	4.09	17.45	10.15	19.75	13.70	0.78	8.19	10.44	4.88	2.70	7.13	6.12	13.40
souam	0.71	2.22	0.76	2.27	42.32	1.04	0.92	0.45	7.11	7.35	10.79	4.82	0.96	6.66
noraf	1.24	12.10	1.07	1.58	14.42	1.11	11.15	3.16	14.31	9.56	0.44	1.27	0.48	4.63
exussr	3.93	0.49	5.32	3.31	4.25	21.03	1.14	2.55	4.94	1.53	9.87	2.62	0.45	3.97
souas	2.05	2.20	1.93	7.76	1.93	3.86	0.74	1.47	4.72	3.71	1.12	3.61	13.93	3.71
turkey	6.81	6.02	5.42	5.20	0.06	1.86	1.60	0.35	0.26	10.04	0.04	2.50	0.49	3.68
exyugo	8.73	0.52	4.02	5.27	0.10	1.29	0.21	0.08	1.95	1.02	0.05	5.39	0.05	2.59
noram	1.41	8.91	1.70	7.96	0.77	2.40	0.77	1.11	1.05	4.67	0.66	2.49	6.67	2.49
seastas	1.41	1.84	1.45	5.67	0.62	4.14	0.84	1.74	2.50	4.36	0.16	4.74	5.40	2.19
mideast	2.08	1.47	1.67	10.86	0.33	4.83	0.53	2.58	0.54	3.27	0.07	18.61	1.60	2.16
westaf	1.44	1.05	0.89	1.25	3.68	1.45	2.85	0.39	3.88	2.87	10.48	1.14	2.01	1.81
eastas	0.67	3.57	0.93	2.34	0.59	1.77	0.41	0.25	1.79	3.22	0.18	1.63	2.86	1.33
oce	0.25	0.37	0.17	1.56	0.08	0.52	0.08	0.25	0.20	1.07	0.05	0.67	9.03	1.31
cenam	0.45	0.34	0.25	0.62	5.28	0.47	0.81	0.76	1.36	0.87	0.34	0.98	0.58	1.06
souaf	0.15	0.67	0.20	0.54	0.10	0.37	0.92	0.13	0.27	1.11	4.48	0.33	5.34	0.93
albania	0.24	0.06	0.23	0.07	0.04	0.10	0.08	5.67	9.84	0.07	0.02	0.09	0.02	0.86
eastaf	0.28	0.82	0.31	5.08	0.06	3.70	0.14	0.60	0.89	2.25	0.02	4.94	0.96	0.73
cenaf	0.13	4.11	0.20	0.29	0.56	0.38	2.12	0.07	0.26	0.50	1.73	0.26	0.05	0.44
tiny	0.02	0.01	0.01	0.02	0.04	0.04	0.00	0.10	0.09	0.04	0.01	0.04	0.21	0.05
TOTAL	49.27	50.88	43.99	71.80	94.99	64.07	26.09	29.91	66.41	62.40	43.19	63.27	57.21	54.00

Table A5: Share of world regions in total stock of foreign citizens (%, code (6), 1986-2006 average)												
	at	***be***	***de***	***dk***	***es***	***fi***	***it***	***nl***	***pt***	***se***	***uk***	***EU***
turkey	5.41	1.15	11.32	5.81	0.03	1.46	0.27	3.50	0.01	0.59	0.25	5.86
ceecs	4.38	0.28	3.64	2.30	9.49	10.91	7.21	0.88	0.56	1.55	0.80	3.47
souam	0.24	0.10	0.40	0.56	24.44	0.57	4.02	0.66	3.18	0.79	0.26	2.56
noraf	0.36	2.30	0.79	0.83	10.92	0.88	11.05	3.34	0.10	0.19	0.16	2.37
exyugo	7.48	0.02	2.67	3.46	0.08	1.37	2.41	0.17	0.02	0.99	0.08	1.86
exussr	0.93	0.05	2.39	1.02	2.37	17.62	2.88	0.34	1.97	0.59	0.12	1.71
souas	0.58	0.12	1.13	3.64	1.10	2.23	4.13	0.46	0.32	0.68	2.15	1.43
mideast	0.48	0.08	1.53	4.77	0.22	4.09	0.59	0.35	0.08	2.84	0.38	1.06
seastas	0.47	0.13	1.20	2.46	0.49	3.28	2.51	0.89	0.05	0.84	0.67	1.04
westaf	0.36	0.09	0.47	0.52	2.41	0.89	3.77	0.40	4.97	0.23	0.59	0.90
noram	0.31	0.27	0.72	1.25	0.55	1.82	0.55	0.64	0.59	0.54	0.99	0.70
albania	0.07	0.01	0.07	0.03	0.02	0.04	7.24	0.01	0.00	0.02	0.05	0.56
cenam	0.12	0.02	0.16	0.19	2.80	0.31	0.97	0.14	0.06	0.16	0.41	0.46
eastaf	0.05	0.05	0.21	2.74	0.04	3.67	0.64	0.16	0.04	0.79	0.57	0.34
souaf	0.04	0.04	0.11	0.14	0.08	0.27	0.36	0.16	2.14	0.06	1.19	0.34
eastas	0.09	0.07	0.33	0.38	0.10	0.93	0.71	0.24	0.05	0.11	0.16	0.27
oce	0.05	0.01	0.06	0.25	0.04	0.37	0.08	0.15	0.03	0.12	0.69	0.18
cenaf	0.04	0.13	0.14	0.11	0.39	0.24	0.24	0.08	0.56	0.07	0.00	0.13
tiny	0.01	0.00	0.01	0.01	0.03	0.02	0.09	0.01	0.00	0.01	0.12	0.03
TOTAL	21.47	4.93	27.36	30.46	55.60	50.99	49.72	12.57	14.77	11.17	9.66	25.28

Table A6: Sources of regression data		
Variable	***Definition***	***Source***
M STOCKS	Legal migration flows and stocks.	Eurostat NewCronos Database
DIST	Measured in km between the partner countries' economic centres. These correspond to the capital city except for Germany (Hamburg is the city used).	CEPII website (www.cepii.fr)
BORDER	Countries are considered to share a common border when they share a land border and its length is given in km.	www.nationmaster.com
GDP (and population)	Taken at PPP value.	IMF's World Economic Outlook
UR	Unemployment rate.	IMF's International Financial Statistics
HK	Average years of schooling.	Barro-Lee dataset (www.worldbank.org/research/growth/ddbarle2.htm)
POL	The political environment index is obtained by averaging the political rights and civil liberties ratings measured on a one-to-seven scale, with one representing the highest degree of Freedom and seven the lowest in the original data. In order to make the interpretation of the coefficients more intuitive, the scale was reverse in this paper.	Freedom House (www.freedomhouse.org/ratings)
RMP LMP	There are two migration policy dummies for each EU-15 country, one for restrictive policy changes and another for liberal policy changes. They increase in value during the years the EU-15 country enforced a more restrictive, or more liberal, migration policy. Each dummy is constructed as a step dummy, where the increase in value is the number of reform measures introduced either with restrictive or liberal objectives. In this way, these dummies track the evolution of migration policies in each EU-15 country.	Social Reforms Database Foundation Rodolfo Debenedetti (www.frdb.org)

Table A7: Regression results for alternative specifications						
	Gap between i and j variables (1986-2006)	***Human capital (1986-99)***	***No unemployment (1986-2006)***	***Lagged unemployment (1987-2006)***	***Lagged migration policies (1987-2006)***	***Lagged unemployment and migration policies (1988-2006)***
dlgdp	-0.034*** (0.011)					
lgdpi		0.334*** (0.039)	0.235*** (0.018)	0.283*** (0.032)	0.307*** (0.029)	0.211*** (0.028)
lgdpj		0.295*** (0.023)	0.153*** (0.009)	0.250*** (0.019)	0.246*** (0.018)	0.201*** (0.017)
dlgdppc	0.262*** (0.032)					
lgdppci		2.362*** (0.268)	2.406*** (0.120)	1.835*** (0.233)	1.943*** (0.189)	2.581*** (0.285)
lgdppcj		-0.263*** (0.054)	-0.127*** (0.017)	-0.311*** (0.035)	-0.310*** (0.032)	-0.258*** (0.032)
dur	-0.000 (0.009)					
uri		-0.030*** (0.007)			-0.035*** (0.005)	
uri(-1)				-0.034*** (0.006)		
uri(-2)						-0.008 (0.006)
urj		0.003 (0.004)			0.003 (0.003)	
urj(-1)				0.001 (0.003)		
urj(-2)						-0.004 (0.003)
dpol	0.230*** (0.079)					
poli		0.625*** (0.153)	-0.095 (0.077)	-0.059 (0.114)	0.080 (0.111)	0.060 (0.104)
polj		-0.005 (0.020)	-0.030*** (0.008)	-0.045*** (0.014)	-0.038*** (0.014)	-0.040*** (0.013)
lhki		0.596*** (0.215)				
lhkj		-0.023 (0.118)				
lstocks	0.868*** (0.010)	0.645*** (0.019)	0.733*** (0.008)	0.729*** (0.016)	0.710*** (0.015)	0.791*** (0.014)
ldist	-1.002*** (0.318)	-3.048*** (0.636)	-1.844*** (0.272)	-2.089*** (0.340)	-2.047*** (0.329)	-1.347*** (0.310)
border	0.022 (0.021)	0.080*** (0.019)	0.040** (0.019)	0.032 (0.021)	0.048** (0.022)	0.026 (0.022)
lang	0.119 (0.087)	0.730*** (0.107)	0.643*** (0.060)	0.695*** (0.094)	0.669*** (0.091)	0.597*** (0.084)
rmp	0.001 (0.008)	-0.371*** (0.101)	0.000 (0.005)	0.005 (0.008)		
rmp(-1)					-0.007 (0.008)	
rmp(-2)						-0.028*** (0.010)
lmp	0.018** (0.007)	0.040 (0.070)	0.025*** (0.006)	0.058*** (0.010)		
lmp(-1)					0.059*** (0.009)	
lmp(-2)						0.083*** (0.013)
Constant	0.759 (0.690)	-31.093*** (3.032)	-27.767*** (1.338)	-15.885** (6.427)	-27.456*** (2.272)	-32.321*** (3.106)
Region dummies						
ceecs	0.369*** (0.075)	0.124 (0.140)	0.318*** (0.063)	0.343*** (0.081)	0.350*** (0.080)	0.394*** (0.075)
turkey	-0.527*** (0.082)	-0.348*** (0.128)	-0.356*** (0.061)	-0.571*** (0.082)	-0.483*** (0.080)	-0.631*** (0.077)
albania	0.190 (0.132)		0.272** (0.122)	0.201 (0.136)	0.306** (0.145)	0.407*** (0.120)
exyugo	-0.113 (0.202)		-0.211** (0.090)	0.301* (0.167)	0.227 (0.161)	0.103 (0.161)

exussr	0.510*** (0.069)	0.612*** (0.134)	0.509*** (0.050)	0.472*** (0.072)	0.499*** (0.072)	0.412*** (0.066)
tiny	-0.265** (0.120)	-0.346 (0.222)	-0.558*** (0.097)	-0.217 (0.134)	-0.227* (0.130)	-0.196 (0.124)
eastaf	-0.306 (0.211)		-0.050 (0.057)	-0.114 (0.254)	-0.219 (0.277)	-0.217 (0.257)
noraf	-0.341*** (0.064)	-0.499*** (0.102)	-0.223*** (0.049)	-0.264*** (0.064)	-0.283*** (0.064)	-0.264*** (0.058)
cenaf			0.048 (0.067)			
souaf	-0.233** (0.108)	-0.112 (0.139)	-0.180*** (0.050)	-0.191* (0.115)	-0.227** (0.107)	-0.165 (0.108)
westaf	-0.121 (0.194)		-0.040 (0.041)	-0.110 (0.193)	-0.221 (0.193)	-0.045 (0.191)
noram	0.285*** (0.102)	-0.007 (0.087)	0.031 (0.064)	-0.041 (0.094)	0.006 (0.092)	-0.047 (0.078)
cenam	-0.145** (0.064)	-0.174** (0.081)	-0.141*** (0.044)	-0.183*** (0.066)	-0.234*** (0.065)	-0.096 (0.062)
souam	0.104* (0.054)	0.047 (0.070)	0.107** (0.042)	0.095 (0.058)	0.080 (0.056)	0.060 (0.052)
eastas	0.356*** (0.080)	-0.043 (0.085)	0.151** (0.064)	-0.021 (0.082)	0.019 (0.081)	0.020 (0.074)
seastas	0.099 (0.063)	-0.070 (0.094)	0.005 (0.046)	-0.000 (0.068)	0.033 (0.066)	-0.011 (0.061)
souas	-0.328*** (0.075)	0.045 (0.127)	0.144*** (0.045)	-0.236*** (0.083)	-0.253*** (0.081)	-0.236*** (0.077)
mideast	0.059 (0.081)	0.117 (0.090)	-0.203*** (0.042)	0.032 (0.092)	0.123 (0.085)	0.085 (0.075)
oce	0.405*** (0.099)	0.655*** (0.120)	0.378*** (0.072)	0.505*** (0.103)	0.505*** (0.101)	0.427*** (0.100)
EU-15 (countryi) dummies F-test	738.23***	108.70***	561.74***	304.25***	526.85***	534.95***
Time dummies F-test	138.78***	174.14***	656.89***	181.74***	254.41***	148.64***
Observations	5069	2221	10483	4416	4548	4228
Country pairs	712	373	1446	649	640	644
R-squared	0.8789	0.8747	0.8601	0.8899	0.8858	0.9079
Chi-squared	17938.77***	12407.50***	47640.91***	177558.55***	18817.84***	21024.76***
NOTE: All regressions carried out by PCSEs (Panel-Corrected Standard Errors) with robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The region dummies are defined as deviations from the sample average. All F-tests reported are transformed Wald statistics based on the use of the robust variance-covariance matrices.						

Table A8: Regression results for alternative regression methods (1986-2006)			
	Random effects GLS	***FGLS with heterogeneous panels***	***WLS***
lgdpi	0.383*** (0.031)	0.353*** (0.016)	0.266*** (0.021)
lgdpj	0.299*** (0.021)	0.266*** (0.010)	0.214*** (0.012)
lgdppci	2.286*** (0.179)	2.494*** (0.114)	2.358*** (0.151)
lgdppcj	-0.383*** (0.042)	-0.297*** (0.020)	-0.283*** (0.022)
uri	-0.037*** (0.005)	-0.017*** (0.003)	-0.028*** (0.004)
urj	0.009*** (0.003)	0.004* (0.002)	-0.001 (0.002)
poli	0.036 (0.087)	0.014 (0.053)	0.074 (0.101)
polj	-0.041*** (0.015)	-0.040*** (0.009)	-0.042*** (0.011)
lstocks	0.616*** (0.014)	0.690*** (0.008)	0.748*** (0.010)
ldist	-2.510*** (0.467)	-2.675*** (0.235)	-1.858*** (0.223)
border	0.047 (0.036)	0.041*** (0.014)	0.043*** (0.015)
lang	0.849*** (0.114)	0.505*** (0.058)	0.476*** (0.068)
rmp	-0.001 (0.007)	0.000 (0.004)	-0.005 (0.006)
lmp	0.039*** (0.008)	0.025*** (0.005)	0.061*** (0.008)
Constant	-29.768*** (2.229)	-31.089*** (1.343)	-28.342*** (1.616)
Region dummies			
ceecs	0.356*** (0.101)	0.237*** (0.053)	0.297*** (0.054)
turkey	-0.247 (0.163)	-0.478*** (0.057)	-0.612*** (0.062)
albania	0.215 (0.174)	0.049 (0.099)	0.207** (0.083)
exyugo	-0.022 (0.189)	0.035 (0.116)	0.131 (0.120)
exussr	0.432*** (0.082)	0.358*** (0.046)	0.401*** (0.050)
tiny	-0.172 (0.154)	-0.292*** (0.082)	-0.283*** (0.078)
eastaf	-0.402 (0.292)	0.004 (0.198)	0.157 (0.204)
noraf	-0.235** (0.100)	-0.322*** (0.042)	-0.317*** (0.044)
souaf	-0.273** (0.129)	-0.138** (0.061)	-0.177*** (0.065)
westaf	-0.471* (0.247)	-0.124 (0.114)	0.019 (0.126)
noram	0.100 (0.137)	0.067 (0.049)	0.023 (0.059)
cenam	-0.189** (0.083)	-0.153*** (0.045)	-0.195*** (0.044)
souam	0.090 (0.077)	0.075** (0.037)	0.035 (0.038)
eastas	0.093 (0.138)	0.046 (0.051)	0.025 (0.057)
seastas	0.096 (0.095)	0.179*** (0.042)	-0.005 (0.043)
souas	-0.150 (0.119)	-0.241*** (0.057)	-0.298*** (0.053)
mideast	0.201 (0.133)	0.006 (0.053)	0.059 (0.051)
oce	0.577*** (0.134)	0.692*** (0.058)	0.533*** (0.064)
EU-15 (countryi) dummies F-test	283.66***	354.88***	57.12***

Time dummies F-test	309.64***	770.68***	17.74***
Observations	5069	4969	5069
Country pairs	712	612	712
R-squared	0.9046		0.912
Log likelihood		-2456.604	
Chi-squared	13105.06***	44826.88***	
F-test			919.09***
NOTE: All regressions carried out by PCSEs (Panel-Corrected Standard Errors) with robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The region dummies are defined as deviations from the sample average. All F-tests reported are transformed Wald statistics based on the use of the robust variance-covariance matrices.			