

**Labour mobility within the EU in the context of enlargement and the functioning
of the transitional arrangements**

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Literature review

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Abstract

This literature review is part of the study "Labour mobility within the EU in the context of enlargement and the functioning of transitional arrangements" (VC/2007/0293). The purpose of this very brief review is to provide an overview on the literature relevant to this study. More detailed discussions of the literature will be included in the background reports to the individual deliverables. This review has two sections. In the first section we consider the determinants and forecasts of migration following the recent EU enlargement and associated transition arrangements. In the second section we consider the literature on the impacts of increased migration as a result of enlargement and the transition arrangements. These impacts include the aggregate effects on wages and employment, but also issues such as: the "brain drain", the regional concentration of migrants, the effect on the welfare state and social cohesion and, finally, the impact of remittances from migrants to their home countries.

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1 Determinants and forecasts of migration

The substantial income gap between the incumbent EU member states and the accession candidates from Central and Eastern Europe has motivated numerous studies which attempt to forecast potential migration from the new Member States (NMS) prior to enlargement. These studies have estimated the long-run stock of residents from the NMS at between 3 and 5 per cent of the population in the origin countries, while annual net migration flows have been predicted to be between 300,000 and 400,000 persons in the first years following enlargement, which corresponds to 0.3-0.4 per cent of the population in the countries of origin.¹

These migration forecasts rely on the assumption that all Member States of the EU-15 open their labour markets at the same time. However, the selective application of transitional arrangements has affected both the scale and the direction of migration from the NMS. Nevertheless, at an annual net migration flow of between 200,000 and 250,000 persons from the NMS-8 into the EU-15, the post-enlargement experience is not entirely inconsistent with most of the projections, although migration flows into Ireland and the UK have greatly exceeded the forecasts.

There are essentially three methods which have been used for forecasting the potential flows of migration from the NMS. The first derives medium- and long-term migration forecasts from surveys of migration intentions in the sending countries. The second extrapolates the South-North migration flows in Europe during the 1960s and early 1970s to future East-West migration. Finally, the third and largest part of the literature bases migration forecasts on econometric models, which explain migration stocks and flows by economic and institutional variables. In this section we briefly outline the results from these three methods.²

1.1 Surveys of migration intentions

A number of studies base forecasts of potential migration on surveys of migration intentions in the NMS (Fassmann/Hintermann 1997; Wallace, 1998; Krieger 2003; Fassmann and Münz, 2002; see also Fouarge and Ester, 2007). Krieger (2003) is based on the Eurobarometer Labour Mobility Survey, which covers all accession countries; the other studies are based on smaller surveys which focus only on a limited number of countries.

Studies of migration intentions suffer from a number of problems. First, and most importantly, it is unclear whether or when the expressed migration intention will be realised, and if so, how long an individual will actually stay abroad. Second, the migration intentions revealed differ a lot depending on the questionnaire and other aspects of the

¹ See e.g. Alvarez-Plata *et al.*, 2003; Boeri/Brücker *et al.*, 2001; Bruder, 2003; Hille/Straubhaar, 2001; Krieger, 2003; Layard *et al.*, 1992; Zaiceva, 2006). Some studies have obtained however lower (Fertig, 2001; Fertig/Schmidt, 2001; Dustmann *et al.*, 2003; Pytlikova, 2007) and higher projections (Flaig 2001; Sinn *et al.*, 2001).

² For previous literature reviews see Brücker/Siliverstovs, 2006a, 2006b; Fassmann/Münz, 2002; Hönekopp, 2001; Straubhaar, 2002; Zaiceva/Zimmermann, 2007.

survey design. Third, it is unclear whether migration intentions refer to a situation without legal barriers to migration or whether migration intentions reflect institutional barriers and are therefore a biased measure for migration under the conditions of free movement. Many of these problems could be circumvented by panel studies which would allow one to show whether migration intentions are realised or not. Unfortunately, panel studies of migration intentions do not yet exist in the NMS.

However, surveys of migration intentions can provide valuable information which is not available from other studies. First, they deliver important insights on the human capital characteristics of potential migrants (see Fouarge and Ester, 2007; Krieger, 2003, for a detailed analysis). Second, the latest Eurobarometer survey provides information on the destination countries, which may help to analyse the spatial distribution of migrants from the NMS across the EU Member States.

1.2 Extrapolation studies

The extrapolation of South-North to East-West migration in Europe relies on the hypothesis that the economic and institutional conditions of "guestworker" migration in the 1960s and early 1970s resemble migration conditions in the enlarged EU of today. Under this assumption, about 3 per cent of the population from the NMS would move to the EU-15 within 15 years (Layard et al., 1992).

The income difference measured in purchasing power parities between the EU-15 and the NMS-8 is similar to that between the members of the European Economic Community (EEC) and their neighbours in Southern Europe during the 1960s. However, there are also important differences between the current enlargement and previous episodes. First, the present per capita GDP gap between the EU-15 and the NMS-8 at current exchange rates is substantially larger than that between the North and the South in Europe during the 1960s. Income differences at current exchange rates may affect migration decisions since a part of the income obtained in host countries can be consumed in the sending countries. Second, labour market conditions (such as unemployment rates) in the main destination countries in the EU-15 are generally less favourable today compared to those in Europe during the 1960s. Third, transport and communication costs are substantially lower today compared to the 1960s, which in turn reduces migration costs. Finally, the institutional and legal framework for migration was different during the guestworker recruitment period compared to the legal framework for the free movement of workers in the Community of today.

Thus, actual migration movements from the NMS into the EU-15 may deviate in one way or another from the South-North migration episode in the 1960s. Nevertheless, the extrapolation exercises provide a useful hint to the magnitudes involved given that the European continent faced a similar income gap in history.

1.3 Econometric models

The largest part of the migration forecasts rely on econometric models, which explain migration flows or stocks by economic and institutional variables. The key explanatory variables are in most models the wage and (un-)employment rates in the receiving and sending countries, the (lagged) migration stock, and a number of dummy variables, which capture institutional conditions in the destination and sending countries, particularly legal immigration barriers.

Although the theoretical foundations may differ, most macro migration models are remarkably similar regarding the variables they consider and with respect to their functional forms. One important difference in the literature is between stock and flow models, which need not however necessarily yield different estimates of the migration potential if properly applied. A second difference is the identifying restrictions which are imposed by different estimators. Both methodological arguments and tests of the forecasting performance suggest that standard fixed effects models outperform pooled OLS models as well as most sophisticated heterogeneous estimators.

Table 1 summarises the estimation results of different studies including their data source and methodological foundations. The estimation results for migration stocks and flows are expressed in per cent. This allows one to compare the findings, since the sample of sending countries differs across the studies.³

We can distinguish studies which refer to Germany, the UK and the total EU-15 as a destination, where the latter studies are based on estimates for a panel of destination and sending countries. The large number of studies in the literature which refer to Germany can be traced back to the fact that about 60 per cent of the immigrants from the NMS in the EU-15 resided in Germany before enlargement. Moreover, the German migration statistics provides detailed data on migration stocks and flows by country of origin which facilitates migration estimates compared to many other destinations in the EU-15. Many studies have therefore estimated the migration potential for Germany and then extrapolated the estimate to the EU-15 under the counter-factual assumption that all EU Member States will open their labour markets at the same time and that the regional distribution of migrants remains constant over time (Alvarez-Plata et al., 2003; Boeri/Brücker et al., 2001).

³ Note that Table 1 is a selection of the literature. There exist numerous other studies which, by and large, resemble the findings represented in Table 1.

Table 1 Econometric forecasts of potential migration from the NMS

Study	Database	Type of model	Estimator	Initial net inflow	Long-run stock
Estimates of potential immigration into Germany (extrapolations to EU-15 in parentheses)					
Alvarez-Plata et al. (2003)	Panel of migration stocks from 18 sending countries, 1967-2001	Dynamic stock model	Fixed effects	0.22% (EU-15: 0.33%)	2.33% (EU-15: 3.82%)
Boeri/Brücker et al. (2001), Brücker (2001)	Panel of migration stocks from 18 sending countries, 1967-1998	Dynamic stock model	Fixed effects	0.22% (EU-15: 0.34%)	2.53% (EU-15: 3.89%)
Dustmann et al. (2003)	Panel of migration flows from 18 sending countries, 1960-1994	Static flow model	GMM with individual effects	0.02% - 0.2%	-
Fertig (2001)	Panel of migration flows from 17 sending countries, 1960-1997	Dynamic flow model	Fixed effects	0.07%	-
Fertig/Schmidt (2001)	Panel of migration flows from 17 sending countries, 1960-1997	Static error-components model	GMM	0.01% -0.06%	-
Flaig (2001), Sinn et al. (2001)	Panel of migration stocks from 5 sending countries, 1974-1997	Dynamic stock model	Pooled OLS	0.64%	7.2%
Estimates of potential immigration into the United Kingdom					
Dustmann et al. (2003)	Panel of migration flows from 18 sending countries, 1960-1994	Static flow model	GMM with individual effects	0.004% - 0.01%	-
Estimates of potential immigration into the EU-15					
Alvarez-Plata et al. (2003)	Panel of labour migration stocks from 20 sending and 15 destination countries, 1993-2001	Dynamic stock model	GMM-system estimator with individual effects	EU-15: 0.11% - 0.15% (labour force)	EU-15: 2.2% - 2.7% (labour force)
Hille/Straubhaar (2001), Straubhaar (2002)	Panel of migration flows from 3 sending and 8 destination countries, 1988-99	Static flow model (gravity equation)	Pooled OLS	EU-15: 0.27%	-
Pytlikova (2007)	Panel of gross and net migration flows from 7 NMS into 15 EU/EEA countries, 1990-2000	Static and dynamic flow model	Fixed effects	EU/EEA-13: 0.04-0.08% (net), (gross inflows: 0.53-0.57)	EU/EEA-13: 1.5%-1.8%
Zaiceva (2006)	Panel of migration flows from 3 sending and 15 receiving countries, 1986-1997.	Static flow model (gravity equation)	Fixed effects	EU-15: 0.23-0.34%	EU-15: 3.5%-5.0%

Altogether, the estimates of these studies are by and large consistent with the migration development from the NMS-8 since enlargement. The annual net inflow or growth in the stock of the foreign residents from the NMS-8 can be estimated at about 200,000 p.a. in 2004, and at about 250,000 p.a. in 2006 and 2007.⁴ This corresponds to between 0.27 and 0.34 per cent of the population in the NMS-8.

The regional structure of migration across the EU, however, is very different from that before the EU enlargement as a result of the selective application of the transitional arrangements. Hence, those studies which have used the regional distribution of migrants before enlargement to extrapolate future estimates for a particular country tend to be less accurate. In particular, actual migration into the UK and Ireland has been much larger, while actual migration to Austria and Germany has been much lower than projected. Actual migration inflows into the UK have been 100,000–150,000 p.a. larger than the net flows predicted in the Dustmann et al. (2003) study for the UK (4,000–13,000). The flows to the Scandinavian countries have been at or below the predicted levels.

Future estimates of the migration potential from the NMS have to consider the third-country effects which arise because of the transitional arrangements, since migration restrictions in one country may affect the scale of migration in other countries. There exist meanwhile three annual observations since enlargement for migration from the NMS-8 into the EU-15 which can be exploited for an identification of the role of migration restrictions. However, counterfactual experience from migration under free movement is not available for the NMS-8 sample. A possible way to circumvent this problem is to use the migration data from other sending countries, which perhaps allows estimating 'normal' regional migration patterns based on gravity-type migration equations.

2 The impacts of migration

2.1 Impacts on wages, employment and the macro-economy

The analysis of the macroeconomic impact of migration is typically based on general equilibrium trade models. This type of macroeconomic modelling is very flexible and provides a comprehensive framework which facilitates the analysis of the interaction between trade, migration and capital movements and their subsequent labour market impacts.

The effect of migration on wages and unemployment depends largely on the skill composition of immigrants. Assuming that the low-skilled and high-skilled labour force in Austria would increase by respectively 10.5 and 2.1 per cent, Keuschnigg and Kohler (1999) estimate a 5% decrease in wages for low-skilled workers. Heijdra et al. (2002) estimate the effect of the migration from the NMS to Germany. They assume that migration from eastern European countries to Germany would rise from 550,000 in 2008

⁴ This estimate refers to the change in the number of foreign residents as reported by national statistical sources in the Member States of the EU-15 and, for those countries which do not report, by the Eurostat Labour Force Survey. The 2007 figures refer to summer 2007 and are very preliminary.

to 2.5 million in 2030, with 35% of the migrant population entering the labour market. 40% of the migrants are skilled and 60% unskilled. As a result, less skilled workers suffer from reduced wages and higher unemployment, while skilled labour benefits from migration through higher wages and lower unemployment. Brücker and Kohlhaas (2004) find that, depending on the assumptions on the qualifications of the migrant population, wages can decline by 0.5–0.6% for an immigration rate of 1% of the labour force, while the unemployment rate increases by 0.02–0.1 percentage points. Brücker (2007) demonstrates that if 4 % of the population from the NMS migrate into the EU-15, the main winners of migration are the migrants themselves, while blue-collar workers are negatively affected through higher unemployment in the destination countries.

However, these relatively modest negative effects of migration on wages and unemployment of the low-skilled are likely to be outweighed by positive and strong effects of a more liberalized goods market (e.g. Brown et al. 1995, Baldwin et al. 1997). This is why most models predict that Eastern enlargement results in lower aggregate unemployment and higher wages in both the EU-15 and the NMS. Among other things, a significant trade creation between the NMS and EU-15 is likely to affect negatively the economies of China, Japan, Korea and the NAFTA countries, but to have a positive impact on the economies of Russia and other members of the CIS (Ko 2006).

In all models, the EU enlargement leads to a higher level of GDP. In earlier studies, this effect was predicted to vary between 0.1% and 0.5% in the EU-15, and between 5% and 18% in the NMS. More recent studies, which take into account trade creation between the old and new member countries, estimate slightly larger effects on GDP of the EU-15. Boeri and Brücker (2005) estimate a 0.5% gain in income per capita if 3% of the population from the NMS migrate into the EU-15. However, these aggregate and per capita income gains may be reduced if rigidities in the labour market exist. Finally, analysing possible diversion effects due to transitional periods, Baas and Brücker (2008) conclude that the closure of labour markets in Germany has reduced the GDP effect there, while the opening-up of the UK has led to higher GDP in that country.

2.2 Brain drain, brain gain and brain waste

The mobility of high-skilled labour has become one of the most prominent issues in the recent migration debate. The stock of high-skilled immigrants living in OECD countries increased from 12.4 million in 1990 to 20.4 million in 2000, whereas the total number of working-aged immigrants increased from 42 million to 59 million over the same period (Docquier and Marfouk (2004)). There is a general agreement that there has been a significant outflow of the highly skilled from Central and Eastern Europe, particularly from the Baltic countries, Poland and countries of the Western Balkan (Inzelt 2003; Kaczmarczyk and Okólski 2005; Okólski 2006; Ribickis 2003).

From the theoretical point of view, the push-pull framework is commonly used to explain migration of the high-skilled. Factors contributing to the outflow of qualified individuals include: differences in wages, living standards, working conditions, chances for professional advancement and so on. In addition, the scale and structure of migration

flows is largely affected by immigration policies of receiving states which often target skilled (and young) people.

The consequences of the mobility of high-skilled labour are far more controversial. Traditionally, the economic approach analyzing the consequences of the "brain drain" is based on the assumption that a country's competitiveness and economic growth should be directly linked to the stock of human capital. Consequently, in a zero-sum game, sending countries are assumed to be losers and receiving countries winners from skilled migration. (Grubel and Scott 1969, Berry and Soligo 1969, Bhagwati and Dellafar 1973, Bhagwati 1976, 1979).

Recent theoretical and empirical contributions have emphasized more positive or "brain gain" effects of high-skilled migration on sending countries. First, the outflow of high-skilled labour may have a positive impact on human capital formation by creating incentives to invest in education and influencing propensity to acquire higher skills (e.g. Stark 2004, 2005, Mountford 1997, Beine, Docquier and Rapoport 2001). Second, remittances sent by migrants significantly reduce poverty rates in the countries of origin. Third, migrants who accumulated human and financial capital abroad contribute to higher productivity at home upon their return (Klagge et al. 2007). Fourth, a skilled diaspora can facilitate technology transfer and bridge information gaps between potential exporters, importers and investors at home and host countries (Docquier et al 2007). Finally, Beine, Docquier and Rapoport (2003) show that the mobility of high-skilled labour can reduce the level of discrimination and corruption in sending countries.

Another important phenomenon related to the migration of high-skilled labour is occupational over-qualification, or the "brain waste". In practically all OECD countries immigrants are more likely to be overqualified than the native born (OECD 2006). This "brain waste" is usually attributable to unobserved differences in the value of education, problems with the recognition of qualifications acquired in the home country, a lack of human and social capital specific to the host country (such as language proficiency), the local labour market situation or, finally, various forms of discrimination. Women, recent immigrants, and migrants from outside the OECD are typically found to have a higher probability of being over-qualified. The problem of "brain waste" might also be relevant for the post-enlargement migrants. While 80-90% of migrants from the NMS-8 countries are hired for occupations that need no professional qualifications (WRS data), national sources suggest that, among Polish migrants in the UK, the share holding a university degree exceeds 25-30%. Nevertheless, relatively high rates of emigration of the skilled in Poland and other NMS countries might also be a consequence of the over-supply of qualified individuals and inefficient use of human capital resources at home countries.

2.3 Regional impacts

Migrate or commute?

The choice between migration or cross-border commuting has recently been examined by a number of authors (Zax, 1994, Rouwendal, 1998, Van Ommeren, Rietveld and

Nijkamp, 2000). Such research has concluded that commuting may be of sufficient importance that cross-border labour markets may be emerging (Overman and Puga, 2000), with regional linkages in unemployment rates being equally strong across national borders as within countries. This has led policy makers to argue that cross-border commuting flows should be considered in addition to migration when considering the potential derogation periods following the EU enlargement in 2004 (see Huber 2001, Untiedt and Alecke 2001).

What affects the region of migration?

A robust stylised fact from the empirical literature is that migrants are highly regionally concentrated. Bartel (1989) shows that close to 75% of migrants live in the 25 largest SMAS of the United States, although only 50% of the native population resides in these regions. Similar concentrations occur in other countries (e.g. Huber (2002) for Austria; Chiswick, Lee and Miller (2002) for Australia; Edin, Fredrikson and Aslund (2001) for Sweden; Hou (2005) for Canada).

There are a variety of alternative explanations for such regional concentrations. Firstly, network effects, whereby migrants take advantages of positive externalities in consumption and information arising from living in proximity to each other (Winters, de Janvry and Sadoulet 2001, Bauer, Epstein and Gang, 2002a). Secondly, herd effects, whereby informational advantages in the home country lead to the spatial clustering (see Epstein, 2002, Bauer Epstein and Gang, 2002b). Finally, welfare magnet effects, where migrants gravitate to regions in which the welfare system is most generous (see Borjas, 1999, Levine and Zimmermann, 1995).

2.4 Public finances, the welfare state and social cohesion

Studies of the US suggest that the participation of immigrants in welfare programs has increased in the last thirty years such that immigrants now have a higher probability of receiving public assistance than U.S. natives. When considering non-cash benefits, the difference is even larger. The reasons behind this growth are still debated but appear to include changes in the demographic characteristics of immigrants, quicker assimilation of the immigrants to the welfare system (Borjas and Trejo, 1991; Borjas and Hilton, 1996), and increases in the number of refugees who have a higher welfare dependency (Borjas 1995).

A number of studies have examined whether such an increase might also be due to a "welfare magnet" effect, whereby immigrants are attracted by generous welfare benefits. For the US, Blank (1988), Borjas (1999), Gramlich et al. (1984), Meyer (2000), McKinnish (2005), and Gelbach (2004) find a significant impact of the generosity of welfare provision on the location decision of migrants.

The welfare magnet literature is less developed in Europe. Hansen and Lofstrom (1999, 2001, 2003), suggest that immigrants are more likely to receive both unemployment benefits and social assistance than natives, although this is largely due to differences in

the characteristics of migrants vis a vis natives. Such results have been replicated in studies for Germany, where foreigners are less likely to depend on welfare than natives once observable characteristics are controlled for (Bird et al. 1999; Fertig and Schmidt, 2001; Frick et al. 1996; Riphahn, 1998; Sinn et al., 2001) and Denmark (Riphahn and Rosholm, 2001).

The European studies have also found that, in contrast to evidence from the US (e.g. Borjas and Hilton, 1996), foreigners tend to assimilate out of welfare assistance. In Germany, welfare dependency declines with the duration of stay of migrant households, all other factors being equal (Fertig and Schmidt, 2001). Further, welfare usage of non-humanitarian migrants is well below that of humanitarian migrants and non-humanitarian migrants tend to assimilate even more rapidly out of welfare (Hansen and Lofstrom, 1999).

2.5 Remittances

Migrant remittances are income earned in a host country that is sent or brought to the home country. These include: earnings paid to migrant employees who are not resident in the host country, such as border and seasonal workers; transfers abroad by resident workers; and cash and goods transferred by re-migrating individuals.⁵

The motives for remittance payments may be manifold; first, individuals may seek to support family consumption with their income from abroad; second, migrants may seek to accumulate savings that will be invested at home; third, remittances may protect against negative income shocks to the family in the home country. For bilateral flows from the EU to neighbouring countries, Schiopu and Siegfried (2006) present evidence in support of the consumption rather than the investment motive. They also show that remittances are increasing with the skill level of the remitters. Other authors have shown a role for unemployment in the home country (Dragutinovic Mitrovic and Jovicic (2006) and Schrooten (2005)). Schrooten (2005) also suggests that remittances diminish with increasing economic development, economic openness and the development of the banking sector in the home country.

Effects of remittances

Although remittances serve to boost the household income of the recipients, and may provide a means out of poverty, remittances may have a negative impact on economic activity in the home country if they result in the reduction of labour supply.⁶ Large remittance inflows may also result in the appreciation of the real exchange rate, comparable to the Dutch disease effect, and therefore diminish the competitiveness of

⁵ Recently, a number of reviews of the existing findings on remittances were produced (Ghosh, 2006, Mansoor and Quillin, 2006, OECD, 2006, Page and Plaza, 2006, Ratha and Shaw, 2006). Below, we will focus on the experience of central and eastern Europe and the western Balkans and most recent findings for other European economies.

⁶ See Adams and Page (2003) on the poverty-alleviating effect of remittances and Chami et al. (2003) on the possible negative effect on labour supply.

the home country (Mansoor and Quillin, 2006). Dragutinovic Mitrovic and Jovicic (2006) also raise the prospect that countries may become dependent on remittances to finance trade deficits.

The empirical evidence using macroeconomic datasets is controversial. Although Chami et al. (2003) suggest a negative impact of remittances on economic growth, Mansoor and Quillin (2006) and Catrinescu et al. (2006) find that both the short- and the long-run impact of remittances on economic growth appears to be small but positive.

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