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

Final Report

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Abstract

In this study, we examine the impact of the transitional arrangements for the free movement of workers on the sending and receiving countries. The available data suggest that foreign population from the eight new member states from Central and Eastern Europe (NMS-8) who joined the EU in 2004 has increased from 900,000 in 2003 to 1.9 million in 2007. During the same period of time, the foreign population from Bulgaria and Romania (NMS-2) in the EU-15 has increased from 700,000 to almost 1.9 million, although these countries joined the EU not before 2007. The increase in migration from the NMS is accompanied by a substantial diversion of migration flows away from Austria and Germany towards Ireland and the UK in the case of migrants from the NMS-8, while Italy and Spain have been the main destination countries for Bulgarian and Romanian migrants.

The labour supply shock from the NMS-8 triggered by the EU's Eastern enlargement during the years 2004-2007 will increase the GDP of the enlarged EU by 0.2 per cent or by 24 billion Euros in the long-term. The main winners are the migrants. However, the total factor income of natives in the receiving countries will increase by 0.1 per cent in the long-term. In the short-term, wages in the receiving countries decline slightly, while the unemployment rate increases modestly. In the long-term, migration from the NMS is by and large neutral for the labour market. The impact on the different groups in the labour market is balanced, although less-skilled workers lose slightly more than medium- and high-skilled workers. The main losers are however foreign workers which live already in the EU-15, while the native workforce gains slightly.

The skill composition of the migrant workforce is relatively balanced. Migrants from the NMS are slightly better educated as the native population in the sending countries, while the educational attainment is comparable to the native population in the receiving countries. However, migrants from the NMS are employed well below their skill levels and the returns to education are very low. Nevertheless there are indications that other human capital acquired abroad such as language skills may command positive returns upon migrants' return to their home country.

We find little or no evidence that NMS migrants receive a disproportionate part of welfare benefits. They tend to receive less contributory welfare benefits than natives, and not significantly more non-contributory welfare benefits. It is therefore likely that the fiscal balance of immigrants from the NMS for the welfare state in receiving countries is positive, particularly if we consider the fact that migrants from the NMS are less affected by unemployment and have higher labour force participation rates compared to other migrant groups.

Migrants from the NMS are heavily concentrated in certain regions such as the Greater London area and the Vienna area. Nevertheless, even in these areas we expect only modest wage and unemployment effects of migration if at all.

According to our estimates, the foreign population from the NMS-8 in the EU-15 may increase from 1.9 million in 2007 to about 4.4 million in 2020 under free movement. The foreign population from the NMS-2 could grow from about 1.9 million to 4.0 million. The macroeconomic gains for the enlarged EU will increase substantially in this case. However, we expect that migration from the NMS will contract during the global recession, which in turn will reduce the economic benefits from the free movement of workers.

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Executive Summary

1. The EU Eastern enlargement was accompanied by a distinct increase in migration from the new member states (NMS) into the fifteen incumbent EU member states (EU-15). According to our analysis of the available data, the number of foreign nationals from the eight new member states (NMS-8) from Central and Eastern Europe which joined the EU at the 1st of May 2004, residing in the EU-15 has increased from about 900,000 persons before EU enlargement to about 1.9 million in 2007. This corresponds to an annual net increase of some 250,000 persons p.a. in the first four years since EU enlargement. During the same period of time, the number of foreign residents from Bulgaria and Romania in the EU has increased from about 700,000 persons to almost 1.9 million, although these countries have joined the EU not before January 1st, 2007.

2. The increasing migration from the NMS into the EU-15 is associated with a diversion of migration flows: Austria and Germany, who received about 60 per cent of the immigration inflows before EU enlargement, were replaced by Ireland and the UK (in case of immigration from the NMS-8) and by Spain and Italy (in case of immigration from Bulgaria and Romania) as the main destinations of immigrants from the NMS. While the overall increase in the number of immigrants from the NMS-8 is by and large consistent with a number of estimates of the migration potential which have been carried out prior to EU enlargement, the regional distribution of migrants across the EU-15 countries is not. This can be traced back to several causes: the selective application of transitional arrangements for the free movement of labour by the EU member states, the favourable labour market conditions and flexible labour market institutions in the new destination countries, as well as other causes such as language, culture and climate. Altogether, this has affected the regional distribution of migrants across the destinations in the EU-15 in a way which is historically unprecedented.

3. The uncertainty on the future migration potential is still high. There is first evidence e.g. in the UK that net immigration flows from the NMS-8 have started to decline even before the financial crisis. A declining net immigration from the NMS reflects not only the acceleration of the convergence in wages and labour market conditions between the EU-15 and the NMS which can be observed since EU enlargement. Migration theory and empirical evidence suggests that the propensity to migrate in the population which still lives at home is decreasing the higher the share is which already lives abroad if preferences and migration costs are not homogeneous across individuals. We thus expect that net migration rates from the NMS will tend to shrink after the initial migration hump. This expectation is confirmed by our estimation of the future migration potential from the NMS.

4. We estimate that the stock of migrants from the NMS-8 in the EU-15 could increase from 1.9 million in 2007 to 3.8 million in 2020 under the present institutional conditions, and to 4.4 million when the free movement is eventually introduced by all EU-15 member states. The stock of migrants from Bulgaria and Romania is estimated to increase from almost 1.9 million in 2007 to 3.9 million in 2020 under the current immigration conditions, and to slightly more than 4.0 million if the free movement of workers is introduced. Thus, as a rule of the thumb, migration stocks from the NMS could

double in a period of about 12 years. We expect that the net migration from the NMS into the EU-15 will decline in the course of the financial crisis; even a net return migration is possible. This can be traced back inter alia to the fact that migration is largely determined by employment opportunities in destination countries and the foreign workers are more than proportionally affected by dismissals in an economic downturn.

5. These projections are based on a new approach to estimate the migration potential. Migration can be understood as a decision, which maximises utility across a large set of destinations. Economic and other variables in alternative destinations can therefore not be ignored if bilateral migration potentials are estimated. This methodological problem is particularly relevant in the context of the EU's Eastern enlargement, since the choice of Germany and Austria to maintain immigration restrictions has certainly affected the scale of migration in other destinations such as the UK and Ireland. We have therefore pooled all EU-15 member states to one destination, which enables us to circumvent this problem. We thus provide a projection migration potential from the NMS for the entire EU-15, but not for the individual EU-15 countries. A forecast for individual EU-15 destination countries is in our view not possible for methodological reasons at present. Needless to say that numerous caveats apply to the estimates of the migration potential presented in this study. The identification of the relevant elasticities suffer from very few observations which are available since the transitional arrangements for the NMS-8 and the more liberal immigration conditions for Bulgaria and Romania have been introduced. Moreover, the free movement scenario relies on the assumption that the migrants from the NMS respond in the same way as migrants from the EU-15 to explanatory variables such as the income differential. This need, however, not to be the case. Moreover, the projections focus on long-term developments and do not consider short-term fluctuations of the business-cycle which can impact the scale of migration substantially. Thus, our estimates should be understood as no more than a clue to the possible magnitudes involved.

6. The additional labour mobility triggered by the EU's Eastern enlargement has increased income in the enlarged EU substantially. On basis of different macroeconomic models we find that the additional migration caused by the EU Eastern enlargement has raised the GDP of the enlarged EU (i.e. the joint GDP of the EU-15 and the NMS-8) by about 0.11 per cent in the short-run and by about 0.2 per cent in the long-run during the 2004-2007 period. Thus, the GDP of the enlarged EU tends to increase by 24 billion in the long-run. It will further increase in the course of future immigration. By about 2020, the overall gains are about twice as high if the migration potential is realised. Introducing the free movement will create additional gains compared to a prolongation of the transitional arrangements.

7. The benefits and costs of migration are, however, not evenly distributed across all factors of production and the sending and receiving countries. The impact of migration on the total factor income of the native population in the receiving countries is slightly declining in the short-run, while it tends to increase in the long-run when capital stocks have adjusted to their equilibrium levels. The converse holds for the sending countries. Wages will decline slightly in the receiving countries and increase in the sending countries in the short-term, while the aggregate impact on the aggregate wage level is

neutral in the long-run. The aggregate unemployment rate has slightly increased in the receiving countries and fallen in the sending countries in the short-term. The overall level of unemployment shrinks in the enlarged EU slightly. In the long-run, the impact of migration on aggregate unemployment is, however, by and large neutral.

8. The impact of migration from the NMS on the different groups in the labour market is relatively balanced. Less-skilled workers in the receiving countries are slightly more affected by competition from migrants from the NMS than high- and medium skilled workers. This can be traced back to the fact that migrant workers from the NMS are employed well below their skill levels, such that they compete more than proportionally with less-skilled workers. While foreign workers tend to lose, the impact on native workers in the receiving countries is neutral or positive.

9. The modest effects of labour mobility on wages and employment which we find here can be traced back to the fact that the labour market effects of migration are mitigated by the adjustment of other markets to labour supply shocks. There exists robust empirical evidence that the capital-output ratio and, hence, the productivity adjusted capital-labour ratio remains constant in the long-term. Thus, capital stocks tend to adjust to labour supply shocks over time. Moreover, economies adjust to labour supply shocks by changing their sectoral structure and the trade vector. Both effects mitigate the impact of labour migration and have been considered by the models employed here.

10. We find only a moderate selection bias of the migrant population from the NMS with respect to their skill structure. The overwhelming share of the migrants from the NMS is concentrated at the medium skill levels. The educational attainment of the migrant population is slightly higher than that of the native population in the sending countries and comparable to that of the native population in the receiving countries. The increased migration from the NMS is accompanied by increasing investment in education in the home country. Particularly investment in tertiary education has substantially accelerated during the last decade. Whether improved migration opportunities have contributed to these increasing human capital investments in Central and Eastern Europe is, however, an open question. Altogether, our findings suggest that neither the 'brain drain' nor the 'brain gain' will have a considerable impact on labour markets and the economies in the sending and the destination countries.

11. Migrants from the NMS are employed well below their education levels in the EU-15. Although the educational attainment of migrants from the NMS is relatively high, the overwhelming share of the NMS migrants is employed in occupations which require only elementary skills. Moreover, the returns to education and work experience are extremely low for NMS immigrants in the UK, particularly for workers which have arrived since Eastern enlargement. In Germany and some other important destination countries, employment patterns tend to match more education levels of migrants from the NMS, but employment and participation rates of NMS migrants are there well below those of the UK and Ireland. The phenomenon that migrants from the NMS are in many EU member states employed below their education levels does not necessarily imply that migration results in a 'brain waste' if we consider the entire life cycle. Additional human capital may

be acquired abroad such as language skills, which will display their returns later in the domestic labour market.

12. Our findings do not support the widespread concerns that immigration creates a fiscal burden to the welfare state in the receiving countries. Although our analysis is hampered by data limitations, we find evidence from the EU-SILC that immigrants from the EU-25 (i) receive less contributory benefits than natives, and (ii) not significantly more non-contributory benefits than natives. The econometric analysis further demonstrates that there are no behavioural differences between the two groups once potential confounders are controlled for. The finding that migrants participate less in contributory benefits is not surprising since those systems tend to discriminate against short contribution periods, which particularly affects the immigrant population. That migrants participate no more than proportionally in non-contributory benefits may be traced back to the age structure and other favourable demographic characteristics of the migrant population which may compensate for the higher unemployment risks that migrants face in the EU. The findings reported here apply to migrants from the EU-25 as covered by the EU-SILC. However, we observe no distinct pattern in countries where migrants from the NMS-10 have a high share in the immigrant population, such that we conclude that our findings can be generalised to some extent to the group of interest here. The findings from the country studies are mixed in this respect. While NMS migrants in the UK and Ireland are characterised by very high labour market participation rates, low unemployment and other characteristics which imply a favourable balance for the welfare state, in other countries such as Germany we find that NMS migrants are more than proportionally affected by unemployment.

13. The regional pattern of migration from the NMS displays a higher concentration than that of other migrant groups. The biggest local clusters of NMS migrants can be observed in the London areas and Vienna. Migrants from the NMS-8 show a lower degree of concentration than those from Bulgaria and Romania or the candidate countries. Cross-border commuting plays, however, only a minor role in migration from the NMS. The main exception is the Bratislava-Vienna area. Nevertheless, surveys of migration intentions in this area display a higher propensity to move to other destinations such as the UK and Ireland rather than to countries in the immediate neighbourhood like Austria and Germany. Moreover, compared to previous waves of the survey, we observe that migration intentions tend to decline.

14. Altogether, our estimates do thus not suggest that labour mobility can contribute to a severe imbalance in the labour market or other adverse effects in receiving countries. Both the unemployment and wage effects are small at the macroeconomic level. Moreover, historical experience suggests that the level of migration depends on employment opportunities and contracts in the course of an economic downturn. We therefore do not expect that the opening of the labour markets in those countries which still maintain immigration restrictions will affect native welfare and labour markets severely. In the medium and long-term, our simulations suggest in contrast that the native population in the receiving countries is likely to benefit.

Resumé exécutif

1. L´élargissement de l´Union européenne aux pays associés d´Europe Centrale et Orientale a été accompagnée par un accroissement de migration de part les nouveaux États membres (NEM) vers les anciens Membre de l´Union. Selon nos Analyses de données disponibles, le taux des résidents étrangers provenant des NEM-8 est passé de 900 000 personnes avant l´extension à 1,9 million en 2007. Cela correspond à une augmentation nette annuelle de quelque 250 000 personnes dans les premiers quatre ans depuis l´élargissement. Pendant la même période le nombre de résidents étrangers venant de Roumanie ou de Bulgarie en Union Européenne a augmenté de 700 000 personnes à quasiment 1,9 million, bien que ces pays aient adhérés à l´UE seulement le premier janvier 2007.

2. L´accroissement de migration des NEM vers l´UE des 15 est associé à la diversification des courants de migration: L´Autriche et l´Allemagne, qui recevaient presque 60 pour cent des afflux de migration avant l´élargissement de l´UE, ont été remplacés par l´Irlande et la Grande Bretagne (en ce qui concerne la migration provenant des pays d´Europe Centrale et Orientale) et par l´Espagne et l´Italie (en ce qui concerne l´immigration de Bulgarie et la Roumanie) comme première destination des immigrés des NEM. Bien que les estimations sur l´accroissement du nombre des immigrés des NEM-8 est généralement cohérent avec un nombre d´évaluations sur la migration potentielle précédant l´élargissement, la distribution régionale ne l´est pas. Cela peut être dû à divers causes: l´application sélective des arrangements transitionnels sur la liberté de circulation des travailleurs, les conditions favorable du marché du travail et la flexibilité du marché du travail dans les pays de destination, et autres causes comme la langue, la culture et le climat. En tout cela toucha la distribution régionale des migrants a travers les destinations en UE-15 dans une mesure qui est sans précédent.

3. L´incertitude sur le potentiel de migration futur est encore haut. Il y a des premiers signes que par exemple en Grande Bretagne le flux d´immigration nette des NEM-8 a commencé à baisser avant le début de la crise financière. Une baisse de l´immigration nette des NEM reflète non seulement une accélération des convergences des salaires et conditions sur le marché du travail entre les NEM et l´UE-15 ce qui peut être observé depuis l´élargissement. La théorie de la migration et les évidences suggèrent que la tendance de migrer dans la population sédentaire est dégressive le plus haut le taux de ceux qui vivent déjà à l´étranger, si les préférences et les frais de migration ne sont pas homogène a travers les individus. Nous attendons alors à ce que le taux net de migration diminue après la hausse de migration. Cette attente est confirmée par nos estimations pour le potentiel de migration future de part les NEM.

4. Nous estimons que le stock des migrants des NEM-8 dans UE-15 pourrait augmenter de 1,9 million en 2007 à 3,8 million en 2020 sous les conditions institutionnelles actuelles, et à 4,4 million si la liberté de circulation des travailleurs est établie dans tout les pays de l´UE-15. Le nombre des migrants provenant de Bulgarie et de Roumanie est estimé d´augmenter de presque 1,9 million en 2007 à 3,9 million en 2020 sous les conditions présente d´immigration, et de légèrement plus que 4,0 million

si la liberté de circulation des travailleurs est introduite. Ainsi, en gros, le stock de migrants des NEM pourrait être double dans une période de 12 ans.

5. Ces estimations sont basées sur une nouvelle approche pour estimer le potentiel de migration. Migration peut être comprise comme une décision, qui amplifie l´utilité à travers un grand assortiment de destination. Des enjeux économiques et d´autre variable dans les destinations alternatives ne peuvent être ignorés si le potentiel de migration est estimé. Ce problème méthodologique est particulièrement pertinent dans le contexte de l´élargissement de l´UE, le choix de l´Allemagne et de l´Autriche de maintenir les restrictions d´immigration a certainement joué un rôle sur l´ampleur de la migration vers d´autre destination comme la Grande Bretagne et l´Irlande. Pour cela, nous avons rassemblé tous les États UE-15 membre dans une destination, ce qui nous permet d´éviter ce problème. Ainsi nous prévoyons une projection du potentiel de migration de part des NEM pour tout l´UE-15. Il va de soi que plusieurs avertissement s´appliquent pour les estimations de la migration potentielle présentée dans cette étude. L´identification des élasticités subit de très peu d´observations disponibles depuis les arrangements de transition pour les NEM-8 et les conditions d´immigration plus libérales pour la Bulgarie et la Roumanie ont été introduits. De plus le scénario du libre mouvement est relié sur le fait que les migrants des NEM répondent de même façon que les migrant des pays de l´UE-15 aux variables explicatrices, comme les différences de revenus. Mais cela ne doit pas être le cas. En outre les projections se concentrent sur des développements de longue durée et ne considère pas les fluctuations conjoncturelles de courte durée qui peuvent substantiellement avoir des effets sur l´ampleur des migrants. Ainsi nos évaluations doivent être entendues comme une idée de possible importance en cause.

6. La mobilité additionnelle des travailleurs déclenchée par l´élargissement a stablement augmenté des salaires en UE. Sur la base de différents modèles macro-économiques on trouve que la migration additionnelle causée par l´élargissement a augmenté le PIB le l´Union élargie (en d´autre terme le PIB commun de l´UE-15 et des NEM-8) de 0,11 pour cent en court terme et de 0,2 pour cent en long terme pendant la période de 2004 à 2007. Donc le PIB de l´Union élargie a tendance d´augmenter de 24 milliards à long terme. De plus le PIB va augmenter au cours de futures immigrations. Vers 2020 l´avantage va être deux fois plus haut si le potentiel de migration est réalisé. L´introduction du mouvement libre va créer un bénéfice supplémentaire par rapport à la prolongation des arrangements de transition.

7. Les avantages et les charges de la migration ne sont pas distribués régulièrement à travers les facteurs de production et les pays d´envoi et de réception. L´impact de migration sur le facteur des revenus total de la population indigène dans les pays d´accueil est légèrement en baisse à court terme, pendant qu´il est en progression à long terme si le capital social a ajusté sont niveau d´équilibre. L´inverse s´applique pour les pays d´origine. A court terme les salaires vont diminué légèrement dans les pays d´accueil et augmenter dans les pays d´origine, pendant que l´impacte total sur les salaires globales est neutre à long terme. A court terme le chômage total a légèrement augmenté dans les pays d´accueil et baissé dans les pays d´origine. Le taux global de

chômage a légèrement diminué dans l´UE élargie. A long terme l´impacte de la migration sur le chômage total reste cependant dans l´ensemble neutre.

8. L´impacte de la migration des NEM sur les différents groupes sur le marché du travail est relativement équilibré. Les travailleurs moins qualifiés des pays d´accueil sont légèrement plus touchés par la concurrence des migrants des NEM que les haut- et moyen qualifié. Cela peut être dû au fait au fait que les travailleurs immigrés des NEM-8 sont employés bien au-dessous leurs qualifications, ce qui fait qu´il entre d´avantage en concurrence avec les moins qualifiés. Pendant que les travailleurs immigrés ont tendance à perdre, l´effet sur les travailleurs des pays d´accueil est neutre ou positive.

9. L´effet modeste de la mobilité des travailleurs sur les salaires et les emplois qu´on trouve ici, peut être dû au fait que les effets de migration sur marché du travail soient atténué par l´ajustement d´autres marchés sur les choques d´offres de main d´œuvre. Il existe une évidence empirique forte que le rapport du rendement du capital reste constant à long terme. Ainsi le capital social a tendance avec le temps à s´ajuster au choques d´offre de main d´œuvre. De plus les économies s´adaptent au choques d´offre de main d´œuvre par un changement de leurs structures sectoriels et un changement des vecteurs de commerce. Les deux effets modèrent l´impact de la migration du travail et ont été considérés par les modèles employés ici.

10. On trouve seulement un biais de sélection modéré de la population migrant des NEM à l´égard de leur structure de qualification. La majorité écrasante de la population migrante est concentré dans un niveau de compétence moyen. Le niveau scolaire de la population migrante est légèrement plus haut que celle de la population indigène dans les pays d´origine et comparable à celle de la population d´accueil. L´augmentation de la migration des NEM est accompagnée par une augmentation des investissements dans l´éducation dans les pays d´origine. Les investissements dans les études supérieures ont considérablement augmenté dans la dernière décade. On se pose la question à savoir si les opportunités meilleures ont contribuées à l´augmentation de l´investissement dans le capital humain dans les pays d´Europe centrale et orientale. En tout nos résultats suggère que ni le « fuite des cerveaux » (brain drain), ni le contraire le brain gain aura un considérable impacte sur les marchés du travail et les économies dans les pays d´accueil ou d´origine.

11. Les migrants des NEM sont employés bien en dessous de leurs niveaux de qualification dans les pays de l´UE-15. Bien que le niveau scolaire des migrants des NEM soit relativement haut, la majorité écrasante des migrants des NEM est employée dans des emplois qui exigent seulement une qualification élémentaire. De plus les retours à l'éducation et à l'expérience professionnelle sont extrêmement bas pour les immigrés des NEM en Grande-Bretagne, particulièrement pour ceux arrivant depuis l´élargissement de l´UE. En Allemagne et d´autres destinations importantes, les modèles d´emploi semblent mieux correspondre au niveau scolaire des immigrés des NEM, mais les taux d´emploi et de participation sont bien en dessous de ceux en Grande-Bretagne et en Irlande. Le fait que les immigrés des NEM soient employés en dessous de leurs niveaux de qualification dans beaucoup d´États membre ne signifie pas forcément que la migration résulte dans un « gaspillage de cerveaux » (brain waste) si dans son ensemble le cycle de vie est

considéré. Du capital humain peut être acquis à l´étranger comme des capacités linguistique par exemple, ce qui les avantagera lors de leurs retours sur le marché du travail de leur pays respectifs.

12. Nos résultats ne s´appuient pas sur les inquiétude répandues que l´immigration crée une charge fiscale pour les états providences dans les pays d´accueil. Bien que nos analyse soit limitées par des restrictions de données, nous avons trouvé des reuves de l´EU-SILC que (i) les immigrées des UE-25 sont moins bénéficiaire de restations de la sécurité sociale et (ii) qu´ils ne bénéficient pas significativement plus des prestations sociales financées fiscales que les originaires. L´analyse économétrique démontre qu´il n´y a plus de différences de comportement entre les deux groupes du moment que les variables parasites sont contrôlés. Le résultat que les immigrés bénéficient moins des prestations sociales n´est pas surprenant car ces systèmes tentent de discriminer ceux qui n´ont qu´une courte période de cotisation, ce qui affecte particulièrement les immigrés. Le fait que les immigrés ne bénéficient pas plus en proportion des prestations sociales en peut être dû à la structure d´age et à d´autres caractéristiques démographiques favorable de la population migrante, ce qui peut compenser le plus haut risque de chômage dont les immigrés doivent faire face dans l´UE. Les résultats qui sont expliqués ici s´applique aux migrants des pays de l´UE-25 qui sont couverts par EU-SILC. Nous n´observons pas de modèle distinct dans les pays où les immigrés des NEM-10 représentent une grande partie de la population d´immigrés, ce qui nous met en position de conclure que nos résultats peuvent être généralisé à une certaine mesure pour le groupe de notre intérêt. Les résultats des études de pays sont mélangés dans cette mesure. Pendant que des immigrés des NEM en Grande-Bretagne et en Irlande sont caractérisés par une très haute participation au marché du travail, des taux très bas de chômage et d´autres caractéristiques qui impliquent une balance favorable pour l´État providence, dans d´autre pays comme l´Allemagne on trouve que les immigrés des NEM sont proportionnellement plus affecté par le chômage.

12. Le modèle régional de la migration démontre une plus forte concentration que celle d´autres groupes de migrants. Le plus grand groupe local d´immigrés des NEM peut être observé dans la région de Londres et de Vienne. Les Immigrés des NEM-8 montrent un taux inférieur de concentration que ceux de Bulgarie ou de Roumanie ou d´autre États pays candidat. L´aller et venir entre les frontières joue un rôle mineur dans la migration des NEM. La région de Bratislava-Vienne est l´exception principale. Néanmoins des enquêtes sur les intentions de migration dans cette région montre une plus haute propension de migrer dans d´autre destinations comme l´Irlande ou la Grande-Bretagne que d´immigrer dans les pays voisins comme l´Allemagne ou l´Autriche. De plus, comparé aux vagues d´enquêtes précédentes, nous observons que la tendance de migration diminue.

13. En tout, nos estimations ne suggèrent ainsi pas que la mobilité des travailleurs puisse contribuer à un déséquilibre sévère sur le marché du travail ou à d´autre effets opposés dans les pays d´accueil. Les deux le chômage et l´effet de salaire sont faibles au niveau macroéconomique. De plus l´expérience historique suggère que le niveau de migration dépend des possibilités et des contrats d´emploi dans le cours d´un déclin

économique. Par conséquent nous ne pensons pas que l´ouverture du marché du travail des pays qui maintienne toujours des restrictions d´immigration affecterait sévèrement la protection sociale ou le marché du travail des pays concernés. A long ou moyen terme nos simulations suggèrent au contraire que la population des pays d´accueils serait probablement bénéficiaire.

Zusammenfassung

1. Die Osterweiterung der Europäischen Union (EU) hat zu einem deutlichen Anstieg der Migration aus den neuen Mitgliedsstaaten (NMS) in die fünfzehn alten Mitgliedsstaaten der EU (EU-15) geführt. Nach den verfügbaren Daten ist die ausländische Bevölkerung aus den acht neuen Mitgliedsstaaten (NMS-8), die am 1. April 2004 der EU beigetreten sind, von 900.000 Personen zum Jahresende 2003 auf 1,9 Millionen Personen zum Jahresende 2007 gewachsen. Dies entspricht einem durchschnittlichen Nettozuwachs von 250.000 Personen p.a. in den ersten vier Jahren seit der EU-Osterweiterung. Im selben Zeitraum ist die Zahl der ausländischen Staatsbürger aus Bulgarien und Rumänien von rund 700.000 Personen auf fast 1,9 Millionen Personen gewachsen, obwohl diese beiden Länder erst zum 1. Januar 2007 der EU beigetreten sind.

2. Die zunehmende Migration aus den neuen Mitgliedsstaaten in die EU-15 ist mit einer Umlenkung der Migration verbunden: Deutschland und Österreich, auf die vor der Osterweiterung rund 60 Prozent der Zuwanderung aus Beitrittsländern in die EU-15 entfielen, wurden im Falle der NMS-8 durch Irland und das Vereinigte Königreich und im Falle von Bulgarien und Rumänien durch Spanien und Italien als wichtigste Zielländer der Migration ersetzt. Während der Umfang der Zuwanderung aus den NMS-8 in die EU-15 insgesamt weitgehend mit den Prognosen, die vor der EU-Osterweiterung erstellt wurden, übereinstimmt, so gilt dies nicht für die regionale Verteilung der Wanderungsströme auf die einzelnen Mitgliedsstaaten der EU-15. Dies kann auf verschiedene Ursachen zurückgeführt werden: Die unterschiedliche Anwendung der Übergangsfristen für die Arbeitnehmerfreizügigkeit durch die einzelnen Mitgliedsstaaten, günstige Arbeitsmarktbedingungen und flexible Arbeitsmarktinstitutionen in den neuen Zielländern sowie andere Gründe wie Sprache, Kultur und Klima. Gemeinsam haben diese Faktoren zu einer historisch beispiellosen Verschiebung in der Regionalstruktur der Zuwanderung geführt.

3. Die Ungewissheit über das Migrationspotenzial ist nach wie vor hoch. Erste Anzeichen deuten darauf hin, dass beispielsweise im Vereinigten Königreich die Nettozuwanderung aus den NMS-8 bereits vor der Finanzkrise gesunken ist. Die sinkende Nettozuwanderung aus den NMS ist nicht allein auf die Konvergenz von Löhnen und anderen Arbeitsmarktbedingungen zwischen der EU-15 und den NMS zurückzuführen, die seit dem Beginn der EU- Osterweiterung beobachtet werden kann. Theoretische und empirische Erkenntnisse aus der Migrationsforschung sprechen dafür, dass die Neigung zur Migration in der Bevölkerung der Sendeländer abnimmt je höher der Anteil der Bevölkerung ist, der bereits im Ausland lebt. Dies ist darauf zurückzuführen, dass Präferenzen und Migrationskosten heterogen über die Individuen verteilt sind. Wir erwarten deshalb, dass die Nettozuwanderungsraten aus den NMS nach ihrem sprunghaften Anstieg im Zeitverlauf sinken werden. Diese Erwartung wird durch unsere Schätzung des künftigen Migrationspotenzials bestätigt.

4. Nach unseren Schätzungen könnte die ausländische Bevölkerung aus den NMS-8 in der EU-15 von 1,9 Millionen Personen zum Jahresende 2007 unter den gegenwärtigen institutionellen Rahmenbedingungen auf 3,8 Millionen Personen bis zum Jahresende 2020

steigen; bei Einführung der Freizügigkeit in allen Mitgliedsstaaten der EU-15 sogar auf rund 4,4 Millionen Personen. Die ausländische Bevölkerung aus Bulgarien und Rumänien würde nach unseren Schätzungen von fast 1,9 Millionen Personen unter den gegebenen institutionellen Bedingungen auf 3,9 Millionen Personen bis zum Jahresende 2020 steigen, und bei Einführung der Freizügigkeit auf reichlich 4 Millionen Personen. Somit würde sich die ausländische Bevölkerung aus den NMS in der EU-15 in den nächsten zwölf Jahren etwa verdoppeln. Im Zuge der Finanzkrise wird die Nettozuwanderung aus den NMS deutlich zurückgehen; auch eine Nettorückwanderung ist möglich. Dies ist u.a. darauf zurückzuführen, dass die Zuwanderung wesentlich durch die Beschäftigungschancen in den Zielländern bestimmt wird und die ausländische Bevölkerung im Konjunkturabschwung überdurchschnittlich von Entlassungen betroffen ist.

5. Die in dieser Studie erstellten Projektionen beruhen auf einem neuen Ansatz zur Schätzung des Migrationspotenzials. Internationale Migration kann als eine nutzenmaximierende Entscheidung verstanden werden, die auf Grundlage des Vergleichs der Arbeits- und Lebensbedingungen in vielen verschiedenen Zielländern getroffen wird. Die meisten Prognosen bilateraler Migrationsströme ignorieren jedoch die Migrationsbedingungen in alternativen Zielländern. Dieses methodische Problem ist besonders relevant im Zusammenhang mit der EU-Osterweiterung, weil die Entscheidung Deutschlands und Österreichs die Zuwanderungsbarrieren während der Übergangsfristen aufrechtzuerhalten den Umfang der Migration in anderen Zielländern wie Irland und dem Vereinigten Königreich mit Sicherheit beeinflusst hat. Um dieses Problem zu umgehen, haben wir alle Mitgliedsstaaten der EU-15 zu einem Zielland zusammengefasst und eine Prognose des Migrationspotenzials für die EU-15, nicht jedoch für die einzelnen Zielländer innerhalb der EU-15 erstellt. Eine Prognose für die einzelnen Zielländer innerhalb der EU-15 ist aufgrund der Umlenkungseffekte nach unserer Auffassung methodisch nicht möglich. Auch unsere Prognose ist aufgrund des verfügbaren Datenmaterials und einer Reihe von methodischen Problemen einer erheblichen Unsicherheit ausgesetzt: So beruht die Identifikation der Elastizitäten für die Übergangsfristen auf wenigen Beobachtungen, die seit der Osterweiterung verfügbar sind. Darüber hinaus stützt sich das Szenario für die Freizügigkeit auf die Annahme, dass sich Migranten aus den NMS ähnlich wie Migranten aus der EU-15 in Hinblick auf Einkommensdifferenzen und andere erklärende Variablen verhalten. Schließlich beziehen sich die Prognosen auf langfristige Entwicklungen und berücksichtigen nicht kurzfristige Fluktuationen im Konjunkturzyklus, die den Umfang der Migration erheblich beeinflussen können. Die Projektionen sollten deshalb als Hinweis auf die Größenordnungen des Migrationspotenzials, nicht jedoch als exakte Prognose verstanden werden.

6. Die durch die EU-Osterweiterung ausgelöste Arbeitsmobilität hat das Einkommen in der erweiterten EU erheblich erhöht. Auf Grundlage verschiedener makroökonomischer Modelle kommen wir zu dem Ergebnis, dass die zusätzliche Migration, die durch die EU-Osterweiterung in der Periode von 2004 bis 2007 bewirkt wurde, das Bruttoinlandsprodukt (BIP) der erweiterten EU (das aggregierte BIP der EU-15 und der NMS-8) kurzfristig um 0,11 Prozent und langfristig um 0,2 Prozent p.a. erhöht. Das BIP der erweiterten EU steigt somit langfristig um 24 Milliarden Euro und wird mit den künftigen Wanderungsbewegungen weiter steigen. Im Jahr 2020 werden sich die Gesamtgewinne auf rund 0,4 Prozent des BIP der EU belaufen, sofern das

Migrationspotenzial realisiert wird. Die Einführung der Freizügigkeit wird im Vergleich zu einer Verlängerung der Übergangsfristen das BIP in der erweiterten EU steigern.

7. Die Gewinne und Kosten sind jedoch nicht gleich über alle Produktionsfaktoren und die Sende- und Zielländer verteilt. Das gesamte Faktoreinkommen der einheimischen Bevölkerung in den Zielländern wird kurzfristig leicht sinken, aber langfristig – wenn sich der Kapitalstock an die Ausweitung des Arbeitsangebots angepasst hat – steigen. Das umgekehrte gilt für die Sendeländer. Die Löhne werden in den Zielländern kurzfristig leicht sinken und in den Sendeländern steigen, während das aggregierte Lohnniveau in den Ziel- und Sendeländern von der Migration langfristig nicht beeinflusst wird. Die aggregierte Arbeitslosenrate steigt durch die Zuwanderung auf kurze Frist geringfügig in den Zielländern und sinkt in den Sendeländern, in der erweiterten EU ergibt sich ein leichter Rückgang. Langfristig ist die Migration weitgehend neutral für das Niveau der Arbeitslosigkeit in den Ziel- und Herkunftsländern.

8. Der Einfluss der Migration aus den NMS verteilt sich recht gleichmäßig auf die einzelnen Gruppen im Arbeitsmarkt: Gering qualifizierte Arbeitnehmer sind in den Zielländern etwas stärker als Arbeitnehmer mit hohen und mittleren Qualifikationen durch den Wettbewerb von Zuwanderern aus den NMS betroffen. Dies kann darauf zurückgeführt werden, dass Arbeitnehmer aus den NMS trotz ihrer vergleichsweise hohen Qualifikationsstruktur häufig unter ihrem Qualifikationsniveau beschäftigt werden. Sie konkurrieren folglich stärker mit geringer qualifizierten Arbeitskräften. Während ausländische Arbeitnehmer, die bereits in den Zielländern tätig sind, verlieren, sind die Effekte für inländische Arbeitskräfte neutral oder positiv.

9. Die moderaten Lohn- und Beschäftigungseffekte der Migration können u.a. darauf zurückgeführt werden, dass die Anpassung anderer Märkte an Arbeitsangebotschocks die Arbeitsmarkteffekte der Migration dämpft. So existieren seit langem belastbare empirische Erkenntnisse dafür, dass das Verhältnis von Kapital zu Output langfristig konstant bleibt. Die Kapitalausstattung von Volkswirtschaften passt sich folglich an Veränderungen des Arbeitsangebots durch Migration und andere Faktoren an. Das gleiche gilt für Handel und Gütermärkte. Beide Effekte dämpfen die Arbeitsmarktwirkungen der Migration und wurden von den in dieser Studie verwendeten Modellen berücksichtigt.

10. Die vorliegenden Daten sprechen dafür, dass sich die Qualifikationsstruktur der Migranten aus den NMS nicht besonders stark von der Qualifikationsstruktur der Erwerbspersonen in den Ziel- und Herkunftsländern unterscheidet. Der überwiegende Teil der Migranten aus den NMS entfällt auf die Gruppe mit mittleren Qualifikationen. Die durchschnittlichen Bildungs- und Ausbildungsabschlüsse der Migranten aus den NMS sind etwas höher als die der Bevölkerungen in den Herkunftsländern und vergleichbar mit denen der Bevölkerungen in den Zielländern. Die zunehmende Migration aus den NMS ist verbunden mit steigenden Investitionen in Bildung und Ausbildung in den Herkunftsländern. Insbesondere die Zahl der Hochschulabsolventen ist während der letzten Dekade erheblich angestiegen. Inwieweit die verbesserten Migrationschancen zu diesem Anstieg der Humankapitalinvestitionen in den NMS beigetragen haben ist allerdings eine offene Frage. Insgesamt deuten unsere Ergebnisse darauf hin, dass weder

der ‚brain drain' noch der ‚brain gain' einen starken Einfluss auf die Arbeitsmärkte in den Herkunftsländern und Zielländern haben.

11. Migranten aus den NMS werden deutlich unter ihrem Qualifikationsniveau in der EU-15 beschäftigt. Obwohl das Bildungs- und Ausbildungsniveau von Migranten aus den NMS vergleichsweise hoch ist, wird der überwiegende Anteil der Migranten aus den NMS in Berufen beschäftigt, die nur elementare Qualifikationen erfordern. Darüber hinaus sind insbesondere im Vereinigten Königreich die Erträge von Bildungs- und Ausbildungsabschlüssen von Migranten aus den NMS extrem gering – dies gilt besonders für diejenigen Gruppen, die seit der EU-Osterweiterung zugewandert sind. In Deutschland und einigen anderen wichtigen Zielländern werden Migranten aus den NMS stärker entsprechend ihrer Qualifikationen beschäftigt. Dafür sind in diesen Ländern die Beschäftigungs- und Partizipationsraten deutlich geringer als in Irland und dem Vereinigten Königreich. Die Beschäftigung von Migranten aus dem NMS unter ihrem Qualifikationsniveau bedeutet nicht zwingend, dass die Migration über den Lebenszyklus betrachtet zu einer Entwertung von Humankapital führt. Die Migration kann mit dem Erwerb zusätzlichen Humankapitals wie Sprachkompetenz verbunden sein, die später zu hohen Erträgen in den Arbeitsmärkten der Herkunftsländer führt.

12. Unsere Untersuchungsergebnisse bestätigen nicht die weit verbreiteten Befürchtungen, wonach die Zuwanderung zu einer Belastung des Wohlfahrtsstaates in den Zielländern führt. Obwohl die verfügbaren Daten nur begrenzt Schlussfolgerungen zu lassen, so zeigt die empirische Evidenz auf Grundlage des EU-SILC, dass Zuwanderer aus der EU-25 (i) weniger beitragsfinanzierte Sozialleistungen und (ii) nicht signifikant höhere steuerfinanzierte Sozialleistungen im Vergleich zu Inländern beziehen. Die ökonometrisch gestützte Analyse zeigt darüber hinaus, dass sich keine Verhaltensunterschiede zwischen diesen beiden Gruppen ergeben sofern für die relevante Humankapitalvariablen kontrolliert wird. Das Ergebnis, dass Zuwanderer weniger beitragsfinanzierte Sozialleistungen beziehen ist wenig überraschend, weil die meisten Sozialversicherungssysteme gegen kurze Beitragszahlungen diskriminieren, wovon die Migrationsbevölkerung besonders betroffen ist. Das Ergebnis, dass Migranten nicht höhere steuerfinanzierte Sozialleistungen als Inländer beziehen kann auf die günstige Altersstruktur und andere demographische Charakteristika der Migrationsbevölkerung zurückgeführt werden, die die höheren Arbeitslosigkeitsrisiken von Migranten kompensieren. Alle Ergebnisse hier beziehen sich auf Migranten aus der EU-25, weil das EU-SILC keine gesonderten Informationen für Zuwanderer aus den NMS bereitstellt. Wir beobachten allerdings keine anderen Muster in denjenigen Ländern, in denen der überwiegende Teil der Zuwanderer aus der EU-25 auf Migranten aus den NMS entfällt, so dass wir die Schlussfolgerung ziehen, dass unsere Ergebnisse mit hoher Wahrscheinlichkeit auf die Zuwanderer aus den NMS übertragen werden können. Die Länderstudien haben zu unterschiedlichen Ergebnissen in Hinblick auf die Risiken für den Wohlfahrtsstaat geführt. Während sich die Zuwanderer aus den NMS in Irland und dem Vereinigten Königreich durch hohe Partizipation im Arbeitsmarkt, geringe Arbeitslosenraten und für den Wohlfahrtsstaat günstige demographische Charakteristika auszeichnen – wodurch sich eine positive fiskalische Bilanz der Zuwanderung ergibt –, so sind in anderen Zielländern wie Deutschland die Zuwanderer aus den NMS überdurchschnittlich von Arbeitslosigkeit betroffen.

13. Die Zuwanderer aus den NMS sind regional stärker konzentriert als andere Immigranten. Die größten regionale Konzentration von Zuwanderern aus den NMS ergeben sich den Großräumen London und Wien. Migranten aus den NMS-8 sind etwas geringer konzentriert als Migranten aus Bulgarien und Rumänien und den Kandidatenländern. Die Zahl der Grenzpendler ist, mit Ausnahme der Region Bratislava-Wien, gering. Allerdings zeigen Erhebungen der Migrationsabsichten, dass auch in den grenznahen Räumen die Neigung zunimmt in Regionen zu wandern, die wie Irland und das Vereinigte Königreich weiter entfernt sind. Darüber hinaus zeigt sich, dass die Migrationsabsichten gegenüber früheren Erhebungswellen abnehmen.

14. Insgesamt deuten unsere Untersuchungsergebnisse nicht darauf hin, dass die Arbeitsmobilität zu schweren Ungleichgewichten auf den Arbeitsmärkten oder anderen Störungen in den Zielländern der Migration führen. Die Wirkungen auf Arbeitslosigkeit und Löhne sind auf gesamtwirtschaftlicher Ebene gering. Darüber hinaus zeigen historische Erfahrungen, dass der Umfang der Migration von den Beschäftigungschancen in den Zielländern abhängt und deshalb in einem ökonomischen Abschwung kontrahiert. Wir erwarten deshalb nicht, dass die Öffnung der Arbeitsmärkte in denjenigen Zielländern, die immer noch die Übergangsfristen für die Arbeitnehmerfreizügigkeit aufrecht erhalten, Arbeitsmärkte und Wohlfahrt der inländischen Bevölkerung schwerwiegend beeinträchtigen kann. Unsere Simulationsergebnisse deuten vielmehr darauf hin, dass die inländische Bevölkerung in den Zielländern auf mittlere und längere Frist von der Zuwanderung profitiert.

Part A

Labour Mobility in the Enlarged EU: Main Findings

1 Introduction to Part A

The integration of the new member states (NMS) from Central and Eastern Europe into the labour markets of the enlarged European Union (EU) has no historical precedent. At the outset of the EU's Eastern enlargement round, the income differentials between the new and the incumbent member states of the Community have been markedly larger than those of previous enlargement rounds. Moreover, the iron curtain and the maintained immigration restrictions of the incumbent EU member states have prevented large scale migration movements from the East to the West in Europe before enlargement. This distinguishes the EU's Eastern enlargement from the Southern enlargement episode where large parts of the migration potential have been already realised before accession.

Due to the uncertainties on the scale and the effects of labour migration there have been mounting concerns before Eastern enlargement that the free movement of workers may have a number of undesirable effects on labour markets and social cohesion. Although economic theory predicts that labour mobility between economies which differ largely in incomes and factor endowments will create substantial gains for the integrated area, it also states that the benefits and losses will be distributed unevenly across the groups within countries and between sending and receiving countries. While the incumbent EU member states feared that large scale immigration from the NMS will increase unemployment and depress wages, there have been concerns in the NMS that the removal of migration barriers may involve a brain drain which in turn may hinder economic development and convergence.

Against this background, the EU has agreed transitional arrangements for the free movement of workers with the new member states from Central and Eastern Europe in the accession negotiations. The so-called "2+3+2" formula allows the EU member states to postpone the free movement of workers up to a maximum of seven years, although the prolongation in the last 2 year period requires that severe disturbances in the labour market exist in the destination country. While some EU member states have opted for an opening of their labour markets right from the beginning of the EU's Eastern enlargement, others have removed the migration barriers later or maintain them still until today. The selective opening of the labour markets of the 15 old member states of the EU has resulted in a distinct increase in migration movements and a drastic change in the regional distribution of immigration flows from the NMS across the EU member states.

Meanwhile, almost five years have expired since the eight new member states from Central and Eastern Europe which joined the EU on May 1st, 2004 and two years since the Bulgaria and Romania have acceded the Community on January 1st, 2007. This enables us to carry out a first analysis of the effects of the transitional arrangements for the free movement of workers on the receiving and sending countries in the enlarged EU, which might be also relevant for policy makers who have to decide on the prolongation of the transitional arrangements in 2009. The purpose of this study is to examine the impact of the transitional arrangements for the free movement of workers from different

perspectives. The study focuses on five main tasks: i) the documentation of the scale of migration since the EU's Eastern enlargement and the projection of future migration movements under the status quo conditions and the free movement of workers in the entire EU; ii) the analysis of the effects of migration from the NMS on wages, employment opportunities and other macroeconomic variables which affect welfare in the destination and sending countries; iii) the examination of the phenomenon of a 'brain drain' in the sending and a 'brain gain' in the receiving countries; iv) the investigation of the effects of migration on the welfare state; v) the analysis of regional migration and commuting patterns.

In the first part of this report, the main findings on the impact of labour mobility under the transitional arrangements from various research teams are summarised. Deeper insights are provided in the Background Reports to this report. The results are presented along the following lines of investigation: First, we briefly summarise how the transitional arrangements for the free movement of workers are applied by the EU member states in order to establish the institutional background. Second, we sketch the fundamental economic conditions which may affect labour mobility in the enlarged EU. Third, we analyse the scale of migration movements from the NMS and the candidate countries into the EU-15 before and after EU enlargement und provide a projection of the migration potential under the status quo conditions and under a counterfactual scenario of introducing the free movement of workers in the EU-15. Fourth, we examine the effects of labour mobility on wages, employment opportunities and other macroeconomic variables in the destination and sending countries of the enlarged EU. The analysis is based on both a structural econometric model which distinguishes different groups in the labour market by education, work experience, and national origin and a CGE model which considers the interaction between migration, trade, and capital mobility. While the first model provides insights on the effects of migration for different groups in the labour market, the latter one enables us to draw also conclusions regarding the impact on specific sectors of the economy. Fifth, we address the question whether East-West migration in the enlarged EU involves a 'brain drain' for the sending countries and a 'brain gain' for the receiving countries. Moreover, we examine the question whether and to what extent migrants from the NMS suffer from a 'brain waste', i.e. are employed below their education and experience levels. Sixth, we analyse how migration impacts the fiscal balance of the welfare state in the receiving countries drawing on the evidence from other migration episodes in the EU. Seventh, we investigate the regional migration and commuting patterns within the enlarged EU. The final chapter concludes.

In the second part of this report we present a summary of the country studies which have been carried out in the context of this project. While our general analysis focusses on the main migration trends in the enlarged EU and its economic and social implications, the country reports analyse the specific developments in the receiving and sending countries in further detail. We have considered nine destination and six sending countries, which represent the main characteristics in migration trends and economic and social features of the receiving and sending countries.

2 The institutional background

The free movement of workers was defined as one of the four fundamental freedoms of the then European Economic Community as early as the Rome Treaties of 1957 and was fully implemented by the six founding members of the Community whose joint population numbers 180 million in 1968. Step by step, free movement of workers has been extended to the 15 EU member states and three more countries within the European Economic Area (EEA)[1] with a joint population of 387 million at the outset of the EU's Eastern enlargement.

In the course of the Eastern enlargement round, eight Central and Eastern European countries (NMS-8)[2] and two other countries (Cyprus and Malta) joined the EU on May 1st, 2004, and another two countries, Bulgaria and Romania (NMS-2), acceded at the 1st of January, 2007. While the rules of the Internal Market for the free movement of workers have been immediately applied for citizens from Cyprus and Malta, transitional arrangements have been agreed for the NMS-8 and the NMS-2.

These transitional arrangements allow the EU member states to postpone the free movement of workers up to a maximum period of seven years.[3] The transitional provisions are divided into three different phases: At first, in the two years following accession, all member states can apply national rules on access to their labour markets; at the end of this two-year period, each member state can choose to apply national rules for another three years or implement the Community rules regulating free labour mobility in the EU. If the countries decide to apply the Community rules, a safeguard clause allows for the possibility to reintroduce work permits temporarily in case of a labour market disturbance. There will be an automatic review by the European Commission before the end of the two-year period and a further review on request of each affected member state, but the decision on the application of transitional periods is left to the national governments. At the end of the five year period, a member state can prolong the transitional arrangements for another two years only if it experiences (or are "threatened" by) 'serious disturbances' in its labour market.

Transitional periods for the free movement of labour have been agreed on also in other enlargement rounds: In case of the accession of Greece, a six-year transitional period was agreed and, at the accession of Portugal and Spain, a seven-year transitional period was introduced, later on reduced to six years. However, what makes the present rules different from those adopted in previous enlargement rounds is that individual countries are let free to decide on whether or not they adopt the transitional arrangements.

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[1] Iceland, Liechtenstein and Norway. Switzerland is not a member of the EEA but free movement of workers exists on the basis of a bilateral Agreement on Free Movement of Persons.

[2] Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, and Slovenia.

[3] Free movement is granted to the citizens from the new Member States, but the other EU countries can restrict the access to their labour markets during the transitional periods.

Table 2.1 Transitional Arrangements for the free movement of workers from the NMS-8 in the EU-15 and other EEA member states

	1st phase (May 1, 2004 – April 30, 2006)	2nd phase (May 1, 2006 – April 30, 2009)
	EU-15 countries	
Austria	labour market access restricted; immigration contingents; provision of services restricted	labour market access restricted; skilled workers admitted in case of favourable labour market conditions since January 1, 2008; provision of services in certain sectors restricted
Belgium	labour market access restricted	labour market access restricted; higher flexibility in granting work permits in regions and sectors with labour shortages
Denmark	labour market access restricted but granted in case of job offer; work permits limited to one year; minimum of 30 weekly working hours required; application of collective bargaining agreements required	as in first phase; since 1 May 2008 no work permit required for employment covered by a collective agreement
Finland	labour market access restricted	Community rules for free movement apply, registration required
France	labour market access restricted; work permits granted in limited number of occupations and sectors with labour shortages	Community rules for free movement apply since July 1, 2008
Germany	labour market access restricted; limited number of work permits for seasonal workers and project-tied workers granted; provision of services restricted in specific sectors (construction, cleaning, etc.,)	as in first phase, although no labour market test for certain engineers from 15 October 2007
Greece	labour market access restricted	Community rules for free movement apply
Ireland	access to labour market granted, but obligation to register for work and residence permits; work permits issued for limited time; safeguard clause applies	as in first phase
Italy	labour market access restricted; access granted in specific sectors and occupations with labour shortages	Community rules for free movement apply since July 2006
Luxembourg	labour market access restricted	Community rules for free movement apply since 1 November 2007
Netherlands	labour market access restricted; in specific sectors and occupations privileged access	Community rules for free movement apply since May 1, 2007
Portugal	labour market access restricted; regulation of entry by quotas	Community rules for free movement apply
Spain	labour market access restricted; bilateral agreements on contingents	Community rules for free movement apply
Sweden	access to labour market granted	Community rules for free movement apply
United Kingdom	access to labour market granted, but obligation to register for work and residence permits; work permits issued for limited time; safeguard clause applies	as in first phase
	Other EEA member states and Switzerland	
Iceland	labour market access restricted	Community rules for free movement apply
Norway	labour market access restricted	work permit granted in case of full-time job offer; application of collective bargaining agreements required
Switzerland	labour market access restricted; annual contingents in sectors with labour shortages.	as in first phase
	New member states	
Cyprus	Community rules for free movement apply	as in first phase
Czech Republic	Community rules for free movement apply	as in first phase
Estonia	Community rules for free movement apply	as in first phase
Hungary	Community rules for free movement apply	as in first phase
Latvia	Community rules for free movement apply	as in first phase
Lithuania	Community rules for free movement apply	as in first phase
Malta	Community rules for free movement apply	as in first phase
Poland	Community rules for free movement apply	as in first phase
Slovak Republik	Community rules for free movement apply	as in first phase
Slovenia	Community rules for free movement apply	as in first phase

Sources: Own collection based on EU sources.

Delegating the decision on transitional periods to the national level had important consequences: Most EU member states decided to adopt transitional arrangements which effectively hampered labour mobility, while some others opened their labour markets largely or completely for workers from the NMS. Sweden, the United Kingdom and Ireland decided to open-up their labour markets in principle to individuals from the NMS-8, but they also left certain restrictions in place (e.g. work permits were only issued for one year in the beginning, and if migrants lost their jobs, the resident permits could be withdrawn). In Denmark, work permits are granted to workers from the NMS who can prove that they have a job which meets regular standards with regard to wage and working conditions. Similar rules apply in Iceland and Norway.

The remaining EU-15 countries adopted tighter immigration regulations during the first phase of the transitional arrangements: Austria and Germany, the two destination countries who absorbed more than two-thirds of the migration flows before enlargement, largely maintained their immigration restrictions. The free movement of workers was suspended in both countries, but Germany granted work permits for seasonal workers, project-tied workers and a small number of so-called 'new guestworkers' mainly in the health sector. Austria introduced a (small) quota for immigrants from the NMS. Moreover, both countries agreed on transitional arrangements for the provision of services, which protected sensible sectors such as construction, cleaning etc. against the posting of workers from the NMS.

Similarly, the other member states of the EEA restricted the immigration of workers from the NMS either completely or largely with the exception of small quotas and special provisions in sectors and occupations with labour shortages (Table 2.1). Nevertheless, even in these countries restrictions for immigration were relaxed by one way or another: First, citizens from the NMS enjoy a preferential treatment vis-à-vis third country nationals if access to the labour market is granted. Second, EU accession involves the freedom of establishment which includes also the right for self-employed individuals to establish a business in all member states of the enlarged EU. Third, the freedom to provide services enables the posting of workers from the NMS in all EU-15 member states with the notable exceptions of Austria and Germany.

Altogether, with the exceptions of Ireland, the UK, and Sweden, most EU member states restricted the access of workers from the NMS-8 to their labour markets largely or at least partially. Nevertheless, even in the more restrictive countries, the EU Eastern enlargement also opened new channels for labour mobility from the NMS-8. In the second phase, a substantial number of countries removed the barriers to labour mobility either in 2006 (Finland, Greece, Italy, Luxembourg, Portugal, Spain) or later (Netherlands and Luxembourg in 2007, France in 2008). By the end of the second phase, the free movement of workers remains only largely restricted for workers from the NMS-8 in case of Austria, Belgium and Germany, and partially restricted in case of Denmark (Table 2.1).

Table 2.2 Transitional Arrangements for the free movement of workers from the NMS-2 in the EU-15 and other EEA member states

	First phase (January 1, 2007 – December 31, 2008)
	EU-15 countries
Austria	labour market access restricted; immigration contingents, skilled workers admitted in case of favourable labour market conditions since January 1, 2008; provision of services in certain sectors restricted
Belgium	labour market access restricted; restrictions relaxed in occupations and sectors with labour shortages
Denmark	labour market access granted in case of job offer; work permits limited to one year; minimum of 30 weekly working hours required; application of collective bargaining agreements required; since 1 May 2008 no work permit required for employment covered by collective agreement
Finland	access to the labour market but registration required
France	labour market access restricted; exceptions in selected occupations with labour shortages
Germany	labour market access restricted; contingents for seasonal and project-tied workers; provision of services in certain sectors (construction; cleaning etc.) restricted; since 15 October 2007 no labour market test for work permit for certain groups of engineers
Greece	labour market access restricted; bilateral agreements for seasonal workers; special provisions in occupations with labour shortages; Free access as of 1 January 2009
Ireland	labour market access restricted; special provisions in occupations with labour shortages
Italy	labour market access restricted; no work permit needed in selected branches (agriculture, hotels and restaurants, construction, household services, seasonal workers etc.); eased access for highly qualified workers
Luxembourg	labour market access restricted; special provisions in selected branches with labour shortages (agriculture, hotels and restaurants)
Netherlands	labour market access restricted; special provisions for temporary workers in sectors with labour shortages
Portugal	labour market access restricted; quotas in occupations with labour shortages; Free access as of 1 January 2009
Spain	labour market access restricted; temporary contracts up to a maximum of 180 days permitted; exceptional rules for seasonal workers in agriculture; Free access as of 1 January 2009
Sweden	Access to labour market granted
United Kingdom	labour market access restricted; work permits granted for skilled workers under certain conditions; quotas for less-skilled workers (agriculture, food-processing)
	Other EEA countries and Switzerland
Iceland	labour market access restricted
Norway	labour market access restricted
Switzerland	labour market access restricted; exceptions for sectors with labour shortages
	New member states
Cyprus	Free entry to the labour market with mandatory registration.
Czech Republic	Community rules for free movement apply
Estonia	Community rules for free movement apply
Hungary	Work permit system maintained, simplified procedure for 245 occupations; free access as of 1 January 2009
Latvia	Community rules for free movement apply
Lithuania	Community rules for free movement apply
Malta	Work permit system maintained.
Poland	Community rules for free movement apply
Slovak Republik	Community rules for free movement apply
Slovenia	Free entry to the labour market with mandatory registration.

Sources: Own collection based on EU sources, national governmental sources and Kvist (2008).

Most EU-15 member states decided to impose transitional restrictions for the free movement of workers when Bulgaria and Romania joined the EU in 2007 (Table 2.2). Only Finland and Sweden opened their labour markets under national law already from January 1st, 2007. Ireland and the UK, who have opened their labour markets for citizens from the NMS-8, opted for transitional arrangements in case of Bulgaria and Romania but grant work permits for skilled workers from the NMS-2 in certain sectors and occupations

with labour shortages. More importantly, Spain, Italy, and Greece have a number of bilateral agreements in place which facilitate immigration from Bulgaria and Romania by one way or another. Moreover, several rounds of legalising immigrants in Italy and Spain have increased official migration figures from Bulgaria and Romania. Among the new member states which joined the EU-15 already in 2004, Hungary and Malta maintained a work permit system. Cyprus and Slovenia opened their labour markets, but request a mandatory worker registration. All other new member states applied the Community's rules for the free movement of workers.

As of January 1st, 2009, Greece, Hungary, Portugal and Spain have opened their labour markets to workers from Bulgaria and Romania. Denmark has announced that it will open its labour market in May 2009.

3 The fundamental forces driving labour mobility in the enlarged EU

Most migration theories state that migration decisions are driven by expectations on income levels in the destination and sending countries and by the social and economic costs of migration (e.g. Borjas, 1987; 1989; Hatton, 1995; Sjaastadt, 1962). Individuals form expectations on income levels at different destinations which are determined by the respective wage levels and employment opportunities (Harris and Todaro, 1970). Since migrants from poor countries may be restricted by liquidity constraints, the aggregate migration rate may increase with the income level of the home country at a given income gap between the destination and sending countries (Faini and Venturini, 1995). Moreover, the proportion of the population who are constrained is increasing with the inequality of earnings (Hatton and Williamson, 2005).

Against this background we sketch in this chapter some fundamental economic factors which characterise the migration conditions in the new member states and the candidate countries. As a natural starting point we first describe the current income gap within the enlarged EU and between the EU and the candidate countries. Moreover, we analyse the convergence of per capita GDP and wage levels which took place in the course of Eastern enlargement (Chapter 3.1). We then describe the labour market conditions in the EU and the NMS and the convergence of employment opportunities (Chapter 3.2). In the next step we analyse the factor endowments in the sending countries, particularly the endowments with human capital, since this may provide a first hint regarding the migration potential by skill levels (Chapter 3.3). Finally, we discuss the implications of new patterns of transport costs for the geographical structure of migration in the enlarged EU (Chapter 3.4) and draw conclusions for the migration incentives in the enlarged EU (Chapter 3.5).

3.1 The income gap at the outset of accession and convergence

The income gap between the EU-15 and the new member states from Central and Eastern Europe is markedly larger than in past accession rounds. Measured at purchasing power parity standards (PPS), Eurostat (2008) estimates the GNI per capita in the ten new member states from Central and Eastern Europe (NMS-10) at 48 per cent of that in the EU-15 in 2007. The GNI per capita of the eight new member states (NMS-8) which joined the EU in 2004 amounted to 53 per cent at PPS in 2007, and that of Bulgaria and Romania to about 34 per cent of that in the EU-15 at the same time. The PPS estimate of the per capita GNI of the candidate and potential candidate countries by Eurostat amounted to 38 per cent of the respective level in the EU-15, such that the income gap between the EU-15 and the NMS-2 resembles roughly that between the EU-15 and the candidate countries.

Purchasing power parity estimates tend to understate monetary incentives for labour mobility, since migrants can consume a part of their earnings in their home countries or remit a part of the income to their families. Consequently, differences in earnings at current exchange rates may affect migration decisions as well. At current exchange rates,

the GNI per capita of the NMS-10 amounted to slightly more than one quarter of that in the EU-15 in 2006. The GNI per capita at market prices of the NMS-8 is reported to be at 31 per cent in 2007, and that of the NMS-2 at 17 per cent. The GNI per capita at market prices of the CAND-6 countries amounted to 22 per cent of those in the EU-15 at the same time (see Table 3.1).

Table 3.1 GNI per capita, hourly gross wages and salaries and net migration in the EU, the other EEA and the candidate countries, 2007

	GNI per capita at PPS [1]		GNI per capita		hourly gross wages and salaries [2]		net migration [3]	
	in EUR	in % of EU-15	in EUR	in % of EU-15	in EUR	in % of EU-15	in 1,000	rate per 1,000
Austria	31,400	114 [f]	32,400	112 [f]	15.00	103	29	3.59
Belgium	29,900	108	31,500	109	17.53	120	53	5.12
Denmark	31,400	114	42,500	147	24.23	166	10	1.87
France	27,700	100	29,900	103	17.58	121	90	17.24
Finland	29,600	107	34,000	117	15.46	106	11	0.18
Germany	28,600	104	29,700	102	16.56	114	26	0.31
Greece	23,800	86	20,000	69	5.71	39	40	3.62
Ireland	31,000	112	36,500	126	17.55	121	69	16.93
Italy	25,100	91	25,700	89	9.86	68	377	6.56
Luxembourg	56,300	204	60,400	208	25.25	173	5	11.81
Netherlands	33,300	121	34,800	120	17.71	122	-26	-1.59
Portugal	17,600	64	14,700	51	6.72	46	26	2.48
Spain	25,200	91	22,800	79	10.88	75	605	14.17
Sweden	31,300	113	37,100	128	17.68	121	51	5.65
United Kingdom	29,400	107	33,400	115	16.84	116	214	3.57
EU-15	**27,600**	**100**	**29,000**	**100**	**14.56**	**100**	**1580**	**4.12**
Cyprus	22,100	80	19,200	66	8.28	57	6	7.26
Malta	18,700	68	12,800	44	7.27	50	1	2.49
Czech Republic	18,700	68 [f]	11,500	40 [f]	3.71	25	35	3.40
Estonia	16,700	61	10,900	38	3.51	24	0	0.12
Hungary	14,800	54	9,300	32	4.16	29	21	2.11
Latvia	13,900	50	8,000	28	2.92	20	-2	-1.06
Lithuania	14,300	52	9,300	32	2.95	20	-5	-1.41
Poland	12,900	47	7,700	27	3.34	23	-36	-0.95
Slovak Republic	16,400	59	9,800	34	3.42	24	4	0.72
Slovenia	22,000	80	16,300	56	8.31	57	6	3.14
NMS-8	**14,700**	**53**	**9,000**	**31**	**3.65**	**25**	**23**	**0.31**
Bulgaria	9,300	34	3,700	13	1.11	8	-34	-4.35
Romania	9,600	35 [f]	5,400	19 [f]	1.76	12	-100	-4.61
NMS-2	**9,400**	**34**	**5,000**	**17**	**1.60**	**11**	**-134**	**-4.54**
NMS-10	**13,200**	**48**	**7,800**	**27**	**3.03**	**21**	**-111**	**-1.08**
EU-25	**25,600**	**93**	**25,900**	**89**	**12.74**	**88**	**1470**	**3.02**
EU-27	**24,600**	**89**	**24,600**	**85**	**12.12**	**83**	**1477**	**3.03**
Iceland	32,000	116	46,900	162	n.a.	n.a.	5	n.a.
Norway	45,700	166	60,400	208	26.14	179	24	n.a.
Switzerland	34,700	126	41,500	143	22.59	155	37	n.a.
Albania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-20	-6.43 [4]
Bosnia-Herzegovina	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	8	2.05 [4]
Croatia	13,900	50 [f]	8,600	30	n.a.	n.a.	7	1.64
Macedonia	7,300	26 [f]	2,700	9 [f]	n.a.	n.a.	-1	-0.26
Serbia-Montenegro	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-20	-2.45 [4]
Turkey	10,500	38 [f]	6,500	22 [f]	n.a.	n.a.	-3	-0.04
CAND-6	**10,600**	**38**	**6,500**	**22**	**n.a.**	**n.a.**	**-28**	**-0.30**

1) Purchasing power parity standards (Eurostat estimate).
2) 2006: Hourly labour cost according to Eurostat.
3) 2005.
4) 2005 (World Development Indicators, 2007).

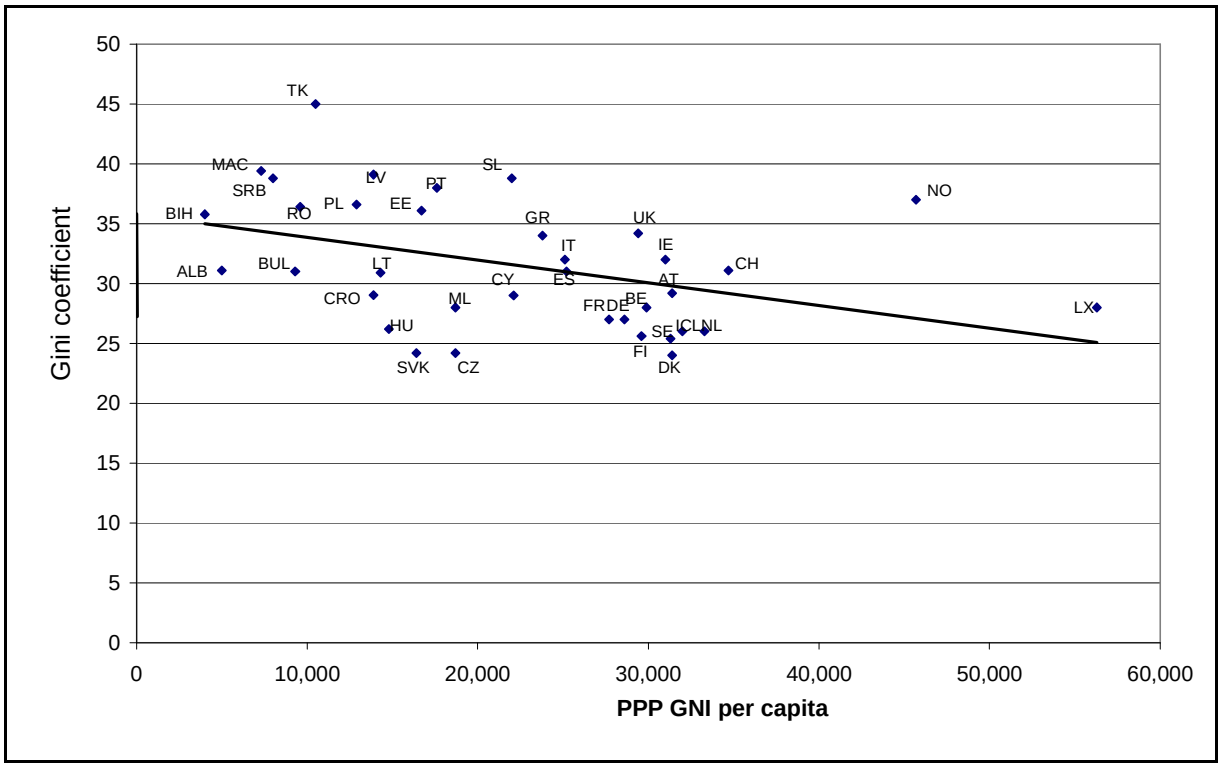
f) forecast.

Sources: GNI and hourly labour costs: Eurostat, net migration: Eurostat, supplemented by WDI. Own calculations and presentation.

The wage gap is even larger. The average level of hourly gross wages and salaries in the NMS-8 was 25 per cent of that in the EU-15 in 2006, and that of the NMS-2 at about 11 per cent. Note that substantial differences in wage and GNI levels across the new member states and the candidate countries exist, ranging from a wage of 8 per cent of the average level in the EU-15 in Bulgaria to 57 per cent in Slovenia.

Altogether, a relatively moderate GNI gap between the old and the new member states measured in purchasing power parities translates in a much larger GNI gap at current exchange rates. Low-income countries usually have a higher income in purchasing power parities than at current exchange rates, since the productivity gap to high-income countries is lower in non-tradable sectors (e.g. services) compared to tradable sectors (e.g. manufacturing industries). In case of the NMS, this income gap is nevertheless strikingly high. Moreover, the higher wage gap compared to the GNI gap reflects rather poor endowments with physical capital in the new member states.

Figure 3.1 Gini coefficient[4] and PPP GNI per capita in Europe, 2006 or latest available year



Source: WIDER Database; own presentation.

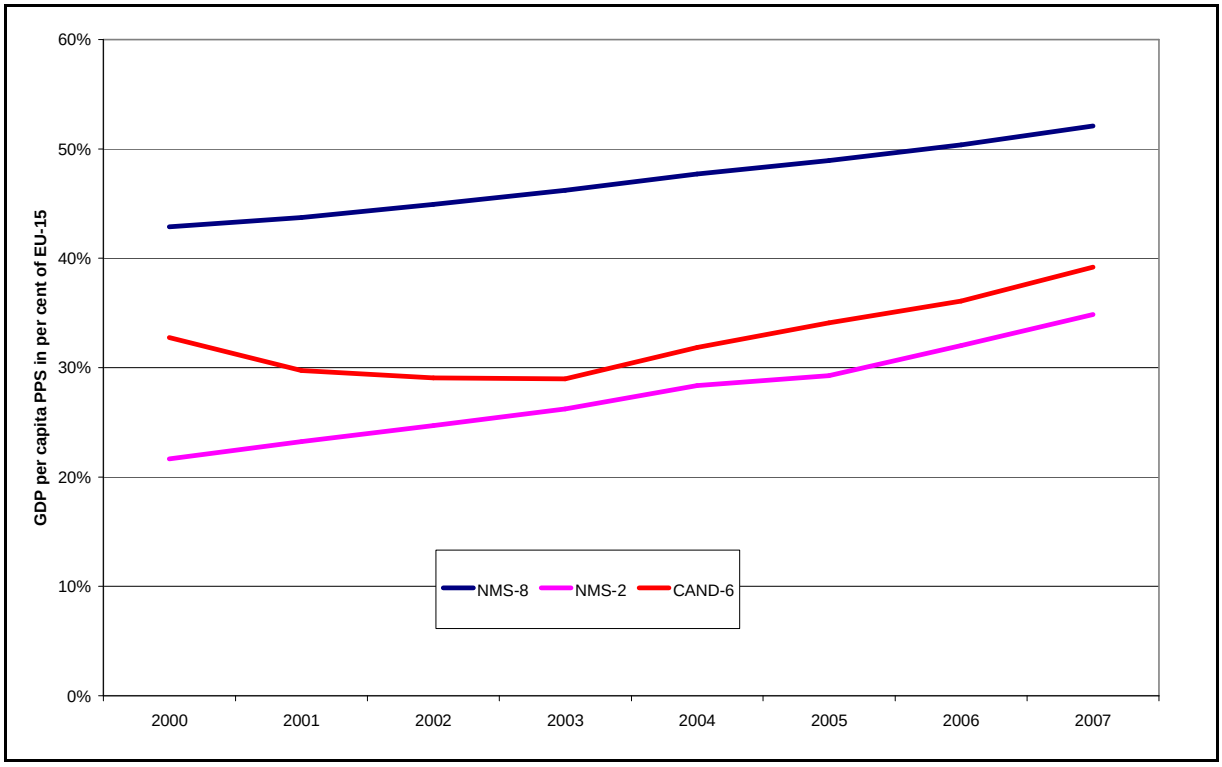
Although the wage gap is relatively large, the inequality in the distribution of earnings in the NMS-8 and the NMS-2 is similar to the EU-15. Figure 3.1 presents the distribution of the disposable household income measured by the Gini-coefficient and the GNI per capita measured in purchasing power parities. Although the low income countries have a higher

[4] The Gini coefficient refers to the disposable income, in few cases where this categorie is not available on consumption.

inequality of income, the disparities are not very large. Particularly some NMS countries such as Slovakia, the Czech Republic, Hungary, and Croatia have a very equal distribution of income which is comparable to the Scandinavian countries in the EU-15. In other countries such as the Baltics and the Balkan countries, the Gini coefficient is comparable to the Southern members of the EU-15, which have a relatively unequal distribution of earnings. An outlier is Turkey, where the inequality in the income distribution exceeds levels common in the EU by far (Figure 3.1).

The modest inequality of earnings in the NMS compared to traditional sending countries of migration in Europe may have two important consequences for the scale and the structure of migration. First, a lower proportion of the population is financially constrained such that the scale of migration is likely to be higher compared to other sending countries with the same average income level (Hatton and Williamson, 2005; Faini and Venturini, 1995). Second, the low inequality in the distribution of earnings increases the monetary incentives to migrate for higher skilled individuals compared to other sending countries with a higher inequality of earnings (Borjas 1987; 1989).

Figure 3.2 Convergence of GDP per capita at PPS, 2000-2007[5]



Source: Eurostat (2008). Own calculations and presentation.

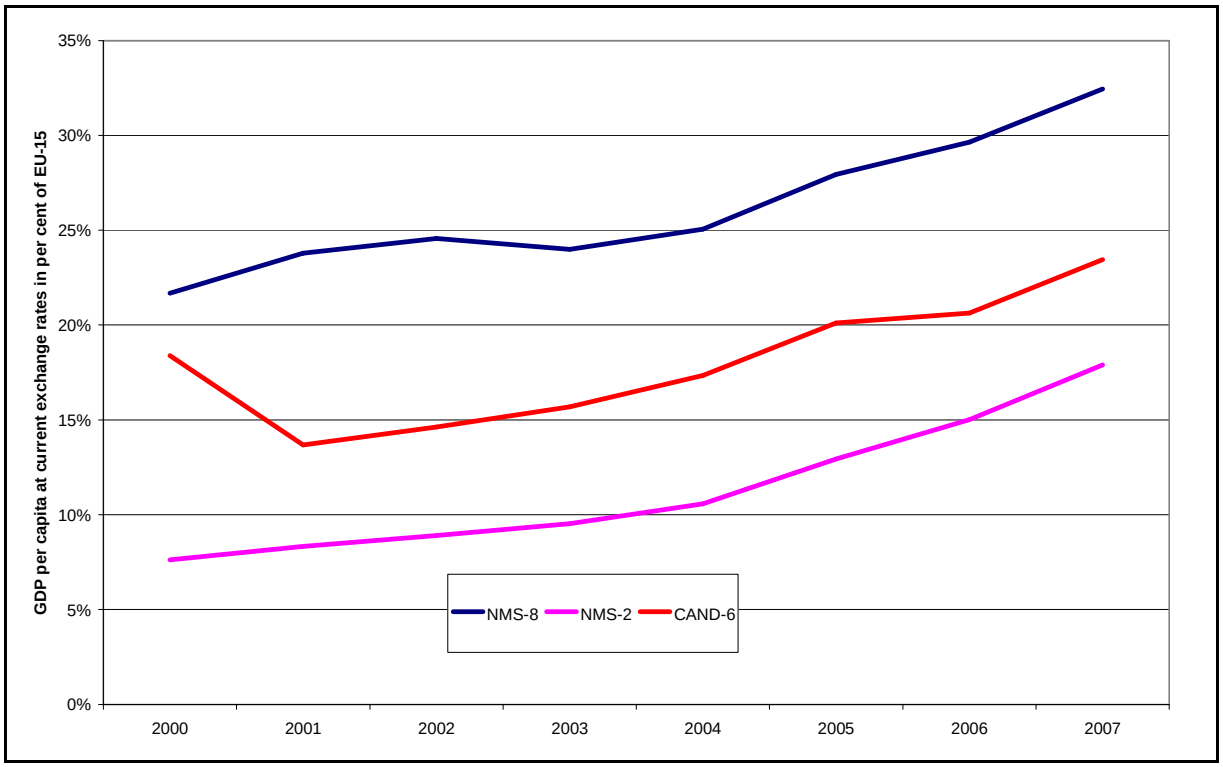
We find strong evidence that GDP and wage levels between the old and the new member states have converged in the course of the EU's Eastern enlargement. In the year 2000, the GDP per capita of the NMS-8 measured in PPS amounted to 43 per cent of that in the EU-15, while it is forecasted to achieve 52 per cent in the year 2007. A similar

[5] Values for 2007 are forecasted by Eurostat.

convergence trend can be observed for Bulgaria and Romania. Interestingly enough, in the (potential) candidate countries we observe a slower speed of convergence compared to the new member states since the beginning of this millennium (see Figure 3.2).

A similar picture emerges regarding the convergence of the GDP per capita at current exchange rates: The initial gap in the year 2000 declined both in case of the NMS-8 and the NMS-2 by 10 percentage points until 2007, but only by 5 percentage points in case of the candidate countries during the same time span (see Figure 3.3).

Figure 3.3 Convergence of GDP per capita at market prices, 2000-2007[6]

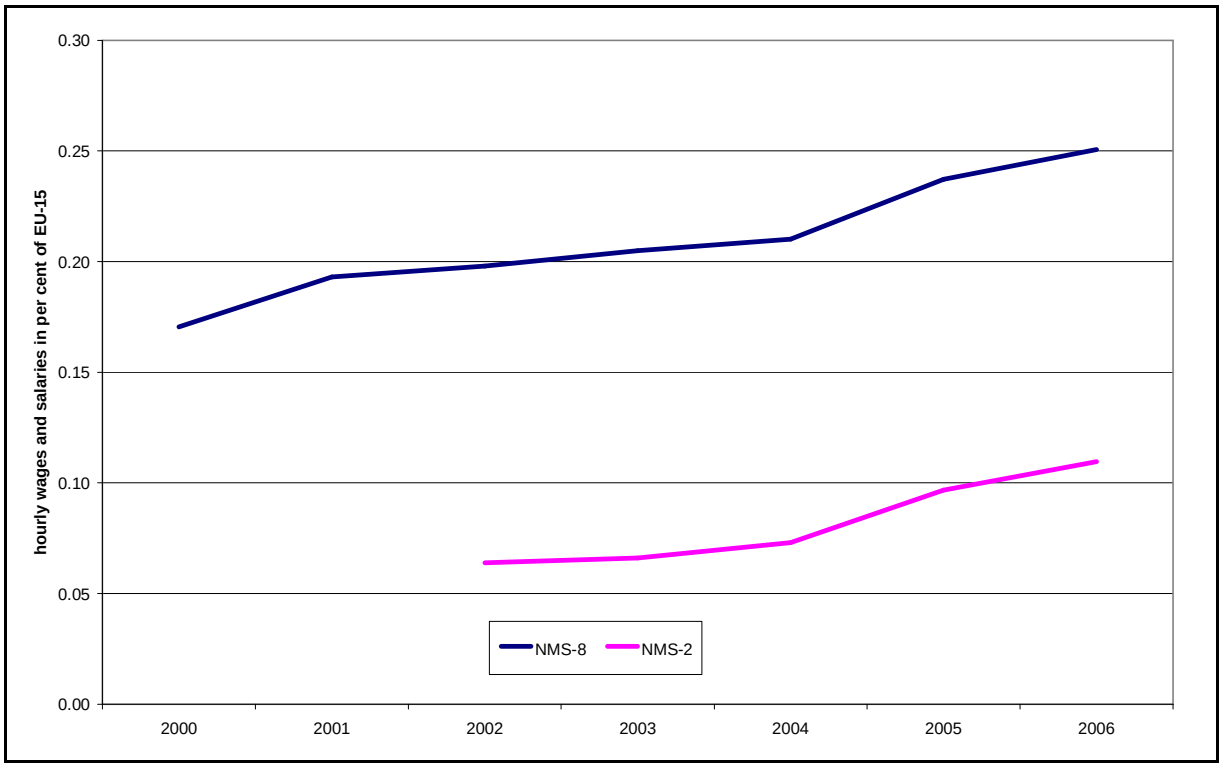


Source: Eurostat (2008). Own calculations and presentation.

We do not investigate the causes of per capita GDP convergence at this stage of our analysis. A number of factors may have contributed to the fast GDP convergence in the new member states, inter alia the rich human capital endowments relative to the income levels, the transfers of the EU in the context of the integration of the NMS into the Common Agricultural Policy (CAP), and the regional policies. Beyond migration, other dimensions of economic integration such as capital mobility from the old to the new member states and the increasing trade between the old and the new EU member states have certainly contributed to the convergence of GDP levels as well. Whether migration has contributed to the convergence of GDP levels and wages will be discussed in detail in Chapter 5. However, it is important to note that the fast convergence of GDP levels between the EU-15 and the NMS-8 and the NMS-2 mitigates economic incentives to migrate considerably over time.

The impact of convergence on migration incentives is even larger if we look at the development of wages: The hourly gross wages and salaries have increased between 2000 and 2006 in the NMS-8 by 8 percentage points and in case of the NMS-2 by 5 percentage points from 2002 to 2006. In particular, wages have jumped in the NMS-8 after enlargement in 2004 (see Figure 3.4). Labour mobility has only moderately contributed to this wage hike, as our simulations in Chapter 5 demonstrate. More important are other causes: transfers into the NMS, capital mobility, productivity gains in which have been realised in the catch-up process and the real appreciation of currencies of the NMS in the first years following EU enlargement. But the rapid convergence since 2004 is to be interpreted carefully as it refers to only two observations. Moreover, in the course of the current financial and economic crisis, the currencies of most NMS have depreciated vis-à-vis the Euro such that nominal wages have diverged since the end of 2008.

Figure 3.4 Convergence of wage levels, 2000-2006



Source: Eurostat (2008). Own calculations and presentation.

3.2 Convergence of labour market conditions

The labour market conditions between the EU-15 and the new member states have also converged since the trough of the transitional recession. Unemployment rates both in the NMS-8 and the NMS-2 meanwhile match the average unemployment rates in the EU-15 (see Table 3.2). Participation rates are - due to a higher female participation in the

[6] Values for 2007 are forecasted by Eurostat.

labour force - higher in the NMS compared to the EU-15. Altogether, unemployment risks do not create specific migration incentives in the NMS.

Table 3.2 Unemployment rates in the EU, the NMS and the candidate countries, 2000-2007

	2000	2001	2002	2003	2004	2005	2006	2007
Austria	3.6	3.6	4.2	4.3	4.8	5.2	4.7	4.4
Belgium	6.9	6.6	7.5	8.2	8.4	8.4	8.2	7.5
Denmark	4.3	4.5	4.6	5.4	5.5	4.8	3.9	3.7
France	9.0	8.3	8.6	9.0	9.3	9.2	9.2	8.3
Finland	9.8	9.1	9.1	9.0	8.8	8.4	7.7	6.9
Germany	7.5	7.6	8.4	9.3	9.7	10.7	9.8	8.4
Greece	11.2	10.7	10.3	9.7	10.5	9.8	8.9	n.a.
Ireland	4.2	4.0	4.5	4.7	4.5	4.3	4.4	4.5
Italy	10.1	9.1	8.6	8.4	8.0	7.7	6.8	n.a.
Luxembourg	2.3	2.0	2.7	3.7	5.1	4.5	4.7	4.7
Netherlands	2.8	2.2	2.8	3.7	4.6	4.7	3.9	3.2
Portugal	3.9	4.0	5.0	6.3	6.7	7.6	7.7	8.0
Spain	11.1	10.3	11.1	11.1	10.6	9.2	8.5	8.3
Sweden	5.6	4.9	4.9	5.6	6.3	7.4	7.1	6.1
United Kingdom	5.3	5.0	5.1	4.9	4.7	4.8	5.3	n.a.
EU-15	**7.7**	**7.2**	**7.6**	**7.9**	**8.0**	**8.1**	**7.7**	**7.0**
Cyprus	4.9	3.8	3.6	4.1	4.6	5.2	4.6	3.9
Malta	6.7	7.6	7.5	7.6	7.4	7.3	7.3	6.3
Czech Republic	8.7	8.0	7.3	7.8	8.3	7.9	7.1	5.3
Estonia	12.8	12.4	10.3	10.0	9.7	7.9	5.9	4.9
Hungary	6.4	5.7	5.8	5.9	6.1	7.2	7.5	7.2
Latvia	13.7	12.9	12.2	10.5	10.4	8.9	6.8	5.9
Lithuania	16.4	16.5	13.5	12.4	11.4	8.3	5.6	4.3
Poland	16.1	18.2	19.9	19.6	19.0	17.7	13.8	9.6
Slovak Republic	18.8	19.3	18.7	17.6	18.2	16.3	13.4	11.3
Slovenia	6.7	6.2	6.3	6.7	6.3	6.5	6.0	4.7
NMS-8	**11.3**	**12.2**	**12.9**	**12.8**	**12.4**	**11.6**	**9.3**	**6.9**
Bulgaria	16.4	19.5	18.1	13.7	12.0	10.1	9.0	6.9
Romania	7.2	6.6	8.4	7.0	8.1	7.2	7.3	n.a.
NMS-2	**9.7**	**10.0**	**11.0**	**8.8**	**9.1**	**8.0**	**7.7**	**n.a.**
NMS-10	**10.8**	**11.6**	**12.4**	**11.6**	**11.5**	**10.6**	**8.9**	**n.a.**
Iceland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Norway	3.4	3.6	3.9	4.5	4.4	4.6	3.5	2.6
Switzerland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Albania	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bosnia-Herzegovina	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Croatia	na	na	14.7	14.1	13.6	12.6	11.1	9.1
Macedonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Serbia-Montenegro	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Turkey	5.2	6.8	8.9	9.3	9.0	8.8	8.4	n.a.
CAND-6	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
EU-25	**8.6**	**8.4**	**8.7**	**9.0**	**9.0**	**8.9**	**8.2**	**7.2**
EU-27	**8.6**	**8.5**	**8.9**	**8.9**	**9.0**	**8.9**	**8.2**	**7.1**

Source: Eurostat 2008. Own calculations and presentation.

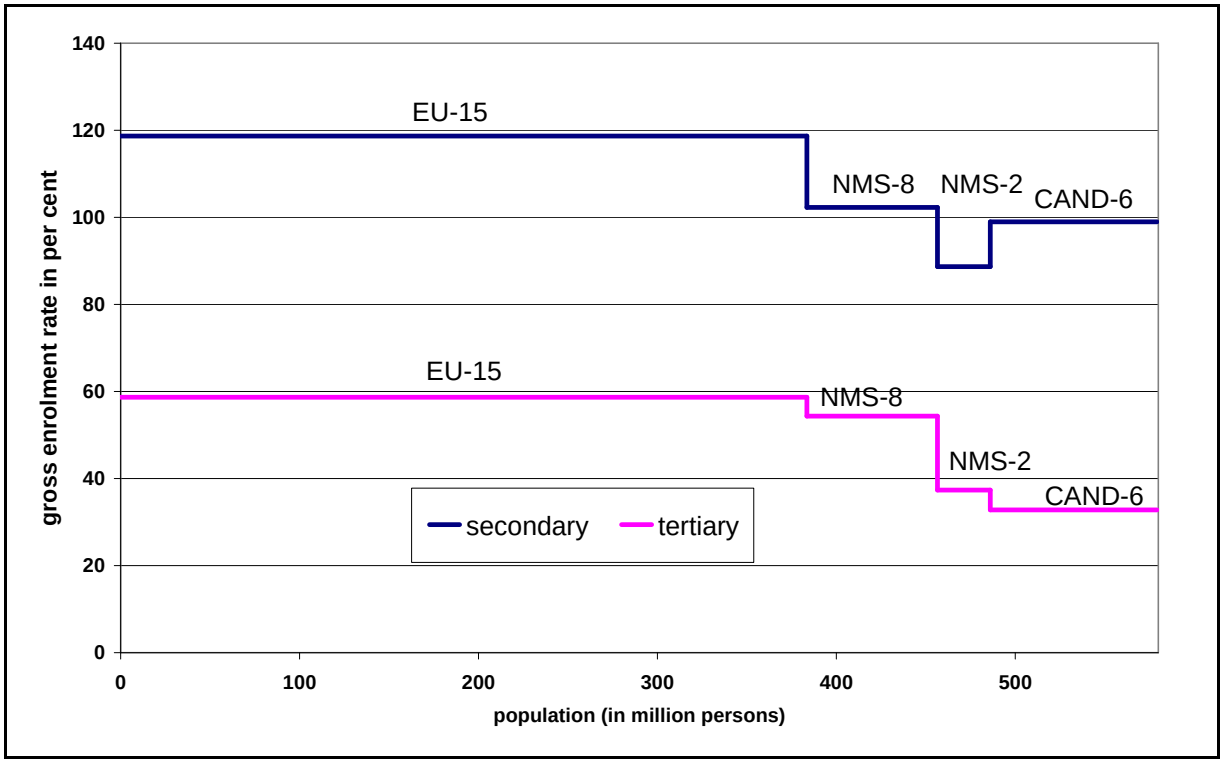
However, two aspects are worthwhile mentioning in this context: First, replacement rates in the NMS are well below those in the EU-15 (OECD, 2008). This may not only create additional migration incentives for those who are unemployed or suffer from unemploy-

ment risk. It may also result in an underreporting of unemployment in the NMS. Second, migrants can choose the optimal location with regard to wage levels and unemployment risks. In particular, migrants from the NMS-8 cluster in countries and regions with high wage levels and low unemployment rates in the EU-15, such that a comparison of average unemployment and wage rates between the EU-15 and the NMS can be misleading.

3.3 Human capital endowments

The difference in the income levels between the EU-15, the new member states and the candidate countries is largely caused by differences in factor endowments. Although data on physical capital stocks is scarce, it is likely that the substantial gap in GDP and wages can be largely traced back to differences in capital endowments. However, one important feature sets the NMS apart from traditional emigration countries: The NMS have a human capital endowment which is only slightly below that of the EU-15. In particular, school enrolment rates catch-up to average levels in the EU-15, such that existing differences will decline over time.

Figure 3.5 Gross enrolment rates in secondary and tertiary education, 2006



Source: World Bank (2007). Own calculations and presentation.

Figure 3.5 displays the gross school enrolment rates[7] in secondary and tertiary education for the EU-15, the NMS-8, the NMS-2 and the CAND-6 countries, which have been

[7] Note that gross school enrolment rates can exceed 100 per cent.

compiled by the World Bank in the World Development Indicators 2007. The gap in secondary school enrolment rates between the EU-15 and the NMS-8 is more moderate than it looks at first glance, since they achieve gross enrolment rates of about 100 per cent. In tertiary education, the gap between the EU-15 and the NMS-8 is avery moderate, while the gap between the EU-15 and the NMS-2 and the (potential) candidate countries is, at about 20 percentage points, considerable. This gap reflects particularly large differences in university education. Nevertheless, we observe an increasing school enrolment in all new member states, such that a convergence or even an overtaking in school enrolment is rather likely in the future.[8] Note that also substantial differences across individual EU-15 countries exist.

Compared to other countries of a similar income level the new member states possess rich endowments with human capital. This may have two consequences which are relevant in the context of this study: The rich human capital endowment may support faster convergence of per capita income levels, and it may result in the emigration of a relatively well-educated workforce compared to the traditional sending countries of labour migration in Northern Africa and South-Eastern Europe.

3.4 The eroding role of distance

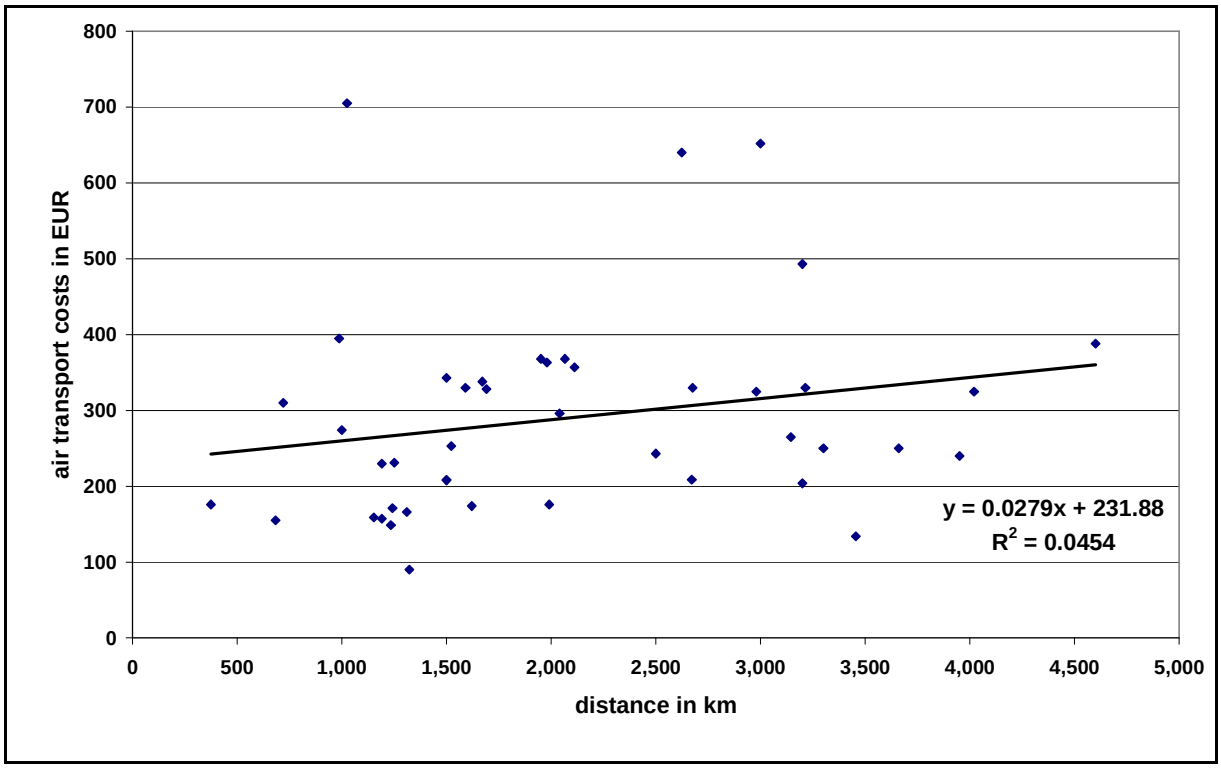
Theories of the migration decision traditionally highlight the role of migration costs, particularly the costs of distance (Sjaastadt, 1962; Stark, 1991). The social and psychic costs of moving to an unfamiliar environment play indeed an important role and affect the structure of migration. In the past, geography therefore played an important role in explaining the spatial distribution of migrants across the EU member states (Hille and Straubhaar, 2002). However, the role of geographical distance for migration costs tends to decline with the emergence of low-cost air carriers. Low-budget air transport has two important effects on migration particularly in the European context: First, the role of fixed costs in transport increases, while the role of variable costs diminishes. As a consequence, the impact of geographical distance decreases. Second, due to the high share of fixed costs, transport costs tend to decline with an increasing migrant community. As a consequence, transport costs become endogenous: The more migrants settle in a certain location, the lower are the migration costs. Thus, within the European context, it becomes more and more uncertain where migrants settle.

To illustrate this argument, consider the cost structure of road and air transport. Road transport by car is largely determined by variable costs, i.e. gasoline, fares for ferries, and depreciation. Depreciation depends largely - albeit not only - on the kilometres run by the vehicle. As a consequence, the costs of road transport tend to increase almost linearly with distance. A similar argument applies to rail transport. In contrast, there is only a weak correlation between air transport costs and distance. The correlation between air fares and distance is displayed in Figure 3.6. For the calculation we have used the

[8] The trends in school enrolment are discussed in Chapter 6.

cheapest connection provided by the OPODO booking system. As Figure 3.6 demonstrates, the costs of air transport are only weakly increasing with geographical distance. In particular, for the relevant range between 500 and 2,500 kilometres, there is no clear correlation between air fares and distance (see Figure 3.6).

Figure 3.6 Costs of air transport and distance



Source: Own calculations based on the OPODO-booking system.

This illustrative evidence can of course only sketch the changing role of transport costs. It may, however, have very important implications for the geographical structure of labour mobility in the context of EU enlargement: While past migration patterns in the EU have been largely determined by geographical proximity, the emergence of low-budget air transport makes it more and more likely that migrants choose destinations by other criteria such as language, climate or labour market conditions. Moreover, network effects may become more important, since transport costs depend on the size of the migrant community. Thus, even if Austria or Germany remove their barriers to labour mobility from the NMS, long-distance destinations such as Ireland and the UK might remain attractive destinations for migrants from the NMS in the future.

3.5 How important is geographical proximity?

Although the role of distance is eroding, it is worthwhile noting that the income gaps between the EU-15 countries in the immediate neighbourhood the NMS are particularly large. This holds in the first place for Austria with its geographical proximity to Slovakia,

Hungary, and the Czech Republic, but also for the German borders to Poland and the Czech Republic, and, to a lesser extent, for the Greek border to Bulgaria. Although the level of migration between these regions is above the EU average, the overall level of migration and commuting in these border regions is moderate. This can be traced back to a number of factors. First, the population density in many border regions such as the German border to Poland or the Greek border to Bulgaria is low. Second, the unemployment rates in the receiving countries in some of these regions are relatively high, which in turn mitigates migration and commuting incentives. Finally, the restrictive immigration policy in the country most affected by geographical proximity from the NMS, Austria, has certainly contributed to reducing migration and commuting in this area. The question of geographical proximity and the incentives for cross-border migration and commuting are discussed in detail in Chapter 9.

3.6 Summarising the stylised facts

Five stylised facts characterise in our view the economic conditions for labour migration in the enlarged EU: First, the nominal gap in wages between the EU-15 and the NMS as well as between the EU-15 and the candidate countries is substantial at present. The income gap between the EU-15 and the NMS-8 resembles by and large that between the Southern European countries (i.e. Greece, Portugal and Spain) and the then EU member states in the 1960s, and the income gap between the EU-15 and the NMS-2 that between the EU-15 and traditional source countries of immigration such as Turkey or the Northern African sending countries. Second, these large differences in income levels disappear in the course of income convergence, which has accelerated in the course of EU enlargement. Particularly the gap in nominal wages has substantially declined during the last years. Third, unemployment rates have converged in the NMS to levels of the EU-15 since the end of the transitional recession. Fourth, human capital endowments are higher and the inequality of earnings is lower in the NMS compared to other sending countries of immigration with similar income levels. Fifth, transport costs have substantially declined during the last years and depend - due to the emergence of low-cost air transport - less on distance.

We can thus conclude that the economic incentives to migrate are high in case of the NMS compared to other enlargement episodes, but tend to diminish over time. Both the low inequality of earnings and the rather high human capital endowments in the NMS are likely to increase migration compared to countries with a similar income level, since (i) a smaller proportion of the population is financially constrained and (ii) migration costs tend to decline with the education level. Moreover, the wage compression increases the relative migration incentives for the high skilled compared to countries with a similar income level. Finally, geographical proximity plays a less important role for the choice of migration destinations compared to other factors such as wages, employment opportunities, language, and other amenities. It is therefore likely that regional migration patterns are less stable than in past migration episodes. Moreover, the role of network effects increases since transport costs depend more and more on the size of migrant communities.

4 The scale of migration

This chapter analyses the scale of migration in the enlarged EU and provides a projection of the migration potential from the NMS into the EU-15. An assessment of the scale of migration is unavoidable for an assessment of the economic and social consequences of labour mobility. An analysis of the scale of migration is, however, hampered by serious data limitations in many EU member states. The national statistics of many EU countries do not report migration stocks and flows, among them main destinations of migration from the NMS such as Ireland and the United Kingdom. We therefore complemented the official migration statistics by data from the European Labour Force Survey. These data sources suggest that about 1.9 million nationals from the NMS-8 reside in the EU-15, together with another 1.9 million nationals from the NMS-2. Since Eastern enlargement of the EU, the number of foreign residents from the NMS-8 in the EU-15 has grown by about 250,000 persons p.a. In case of Bulgaria and Romania, we observe an acceleration of migration into the EU-15 since the beginning of this decade, which has been mainly directed towards Spain and Italy. Altogether, the number of foreign residents from the NMS-2 in the EU-15 has grown by about 230,000 persons p.a. The latest figures from the UK and Ireland suggest the influx of migrants from the NMS-8 has started to decline recently (Chapter 4.1).

There has been a large literature which has tempted to forecast the migration from the NMS before enlargement. At a long-run migration potential of about 3 to 5 per cent of the population and an influx of between 200,000 and 300,000 persons, the mainstream of these forecasts are by and large consistent with the actual migration movements from the NMS-8 into the EU-15, while the migration potential from Bulgaria and Romania has been underestimated. In the course of the selective application of the transitional arrangements, the spatial distribution of migrants across the EU-15 countries has changed dramatically. As a consequence, forecasts for individual EU member states which have been carried out under the counterfactual assumption that all EU member states open their labour markets at the same time, deviate largely from actual migration patterns which have emerged after EU enlargement (Chapter 4.2).

The data available since the EU's Eastern enlargement enables us to apply a new approach for a projection of the migration potential. The studies carried out prior to enlargement had to rely on data and, hence, the experience from other migration episodes, since immigration from the NMS was hampered by the iron curtain and, after the breakdown of the Berlin wall, by immigration restrictions in the EU-15. All studies therefore transferred elasticities estimated for other countries groups to the NMS. This requires that the estimated coefficients are not only constant across time, but also across space. Since the migration behaviour is heterogeneous across countries, this is an important drawback of the projections carried our before enlargement. Meanwhile, we can use the data since enlargement for the identification of the relevant parameters for the NMS itself. Since the spatial distribution of migrants across the individual member states is distorted across the EU-15, we focus in our analysis on the EU-15 as an aggregate. We find that the projected migration potential from the NMS-8 is close to

what we would expect under the conditions of free movement for the other EU-15 member states. Altogether, the long-run migration potential from the NMS-8 is estimated to be at about 5 per cent of the population, and that from the NMS-2 at about 10 per cent in case of an EU-wide introduction of a free movement. Needless to say that these forecasts rely on a number of strong assumptions and provide no more than a hint to the actual magnitudes involved (Chapter 4.3).

4.1 How many migrants have moved into the EU-15?

4.1.1 Definitions and data limitations

Throughout the analysis, we distinguish three groups of countries: The NMS-8, i.e. the new member states from Central and Eastern Europe which joined the EU in 2004, the NMS-2, i.e. Bulgaria and Romania, and six candidate and potential candidate countries from South-Eastern Europe: Albania, Bosnia-Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Serbia and Montenegro, and Turkey.

We refer in our analysis to the concept of citizenship in describing migrations patterns in the context of the EU's Eastern enlargement. This excludes a part of the migrants from the new member states residing in the EU-15, e.g. ethnic Germans (so-called "Spätaussiedler") which have migrated from the NMS into the EU-15 during the 1990s. Nevertheless, the free movement of workers and the transitional arrangements refers to the concept of citizenship, such that we believe that a nationality-based concept is most appropriate in the context of our analysis. It is however important to keep in mind that the definition of foreign nationals differs across destination countries in the EU depending on legal traditions and naturalisation practices, such that figures about the stocks of foreign residents are not entirely comparable across the EU member states. Nonetheless, since migration from NMS is a recent phenomenon in most EU countries, these differences have only a minor quantitative impact.[9]

Moreover, our analysis is restricted to legal migration. Data on illegal migration are scarce and highly unreliable, such that we cannot cover this phenomenon empirically. Since the free movement of workers is likely to diminish incentives for illegal migration from the NMS, this affects our analysis in several ways: Current immigration flows might be overstated if illegal migrants use the new opportunities to legalise their status of residency and employment in host countries. Similarly, the wage and employment effects of immigration from the NMS may be overstated if legal activities of immigrants replace illegal activities. Finally, migration may have a different impact on public finances if we consider that activities in the shadow economy are replaced by activities in the first labour market.

[9] Germany is the main exception here, since the number of ethnic Germans which have immigrated into Germany has roughly the same size as the immigration of citizens from the NMS during the 1990s. However, the immigration of ethnic Germans has ceased since the beginning of this decade.

The figures picturing the migration trends are drawn from different data sources depending on the availability of data. Priority is given to figures which are derived from the population statistics and provided by National Statistical Offices and Eurostat. Unfortunately, these figures are only available for about two-third of the EU-15 countries. For the remaining countries, we report the figures from the European Labour Force Survey (LFS), in case of UK from the UK LFS. The LFS is an EU wide household survey collecting data about labour force participation and other socio-economic factors which was first implemented in 1960 by the six original EU Member States. Today, the survey – hosted by Eurostat – covers all 27 States and is a key research instrument by providing unique time series data about economic and social developments in Europe.

In case of Ireland, the main destination of immigrants from the NMS in relative terms, specific data problems arise. The European LFS does not include data for Ireland for most of the sample periods. Since 2004 we employ data from the Irish Labour Force Survey. Unfortunately, this dataset reports only aggregate figures for the NMS-8 and since 2007 for the NMS-10 such that we use the contingent derived from the Personal Public Service Numbers (PPSN)[10] to disentangle migration from each sending country. Moreover, no information on the skill and age structure is available. Beyond Ireland, there are also a number of other EU member states which do not report the entire information on immigrants from the NMS due to low response rates. However, these countries are relatively small such that this does not much affect the overall results.

Albeit using three different data sources it was not possible to obtain information about the stock of foreign residents for all individual sending countries. In some cases response rates have been too small to cover all countries of origin from the NMS. As a consequence, the aggregate figures of migration stocks from NMS-8, NMS-2, and Cand-6 migrants as reported below may slightly underestimate the actual number of foreign residents in the EU-15.

Some further restrictions apply to the LFS data sources in our context: First, immigrants may generally be underrepresented in the LFS as the survey is usually carried out in the national languages of the host countries. Second, many immigrants from the NMS are employed as seasonal workers, e.g. in agriculture and construction, which are likely to be underreported particularly if the LFS is undertaken off season. Third, the sample design and rotation patterns are not fully harmonised: Various schemes are used to sample the units in the different member states. This may, in turn, lead to a long time span until new migration waves (households) rotate in the sample, resulting in a possible under-representation of migrants in the current year LFS.

In contrast, migration figures in the population statistics may overstate legal migration from the NMS. These statistics on the stocks of residents relies usually on registers of the

[10] The PPS Number is the unique customer reference number for transactions between individuals and government Departments and other public service providers. Its use helps people access benefits and information from public service agencies more quickly and more easily. This includes services such as Social Welfare, Revenue, Public Health Care, and Education.

foreign population, which tend to understate return migration since no incentives exist to deregister.

4.1.2 Immigration from the NMS-8 into the EU and EEA

The number of foreign residents from the NMS-8 in the EU-15 has increased from 893,000 persons in the year before Eastern enlargement (2003) to 1.91 million persons or to 0.5 per cent of the population of the EU-15 by the end of 2007. This corresponds to an annual increase of 250,000 persons p.a. on average since Eastern enlargement compared to 62,000 persons p.a. in the years from 2000 to 2003. The stock of migrants from the NMS-8 in the new member states of the EU is at about 100,000 persons small and only slightly increasing. In the remaining member states of the European Economic Area (Iceland, Norway, Liechtenstein) and Switzerland, the number of foreign residents from the NMS-8 has increased from 28,000 to approximately 61,000 persons during the 2003-2007 period (see Table 4.1, Table 4.2).

Since the beginning of Eastern enlargement in 2003, almost 70 per cent of the immigrants from the NMS-8 have been absorbed by the UK and Ireland. These two countries have replaced Austria and Germany as the main destinations for migrants from the NMS-8. The stock of foreign residents from the NMS-8 increased from 95,000 to about 609,000 in the UK since 2000 according to the LFS data and from 43,000 to about 179,000 persons in Ireland since 2004. By the end of 2007, the stock of foreign residents from the NMS-8 achieves 4 per cent of the population in Ireland and about 1 per cent of the population in the UK.

Table 4.1 Foreign residents from the NMS-8 in the EU and EEA, 2000-2007

Host country	2000	2001	2002	2003	2004	2005	2006	2007
				in persons				
Austria [1]	n.a.	54,797	57,537	60,255	68,933	77,264	83,978	89,940
Belgium [1]	9,667	12,102	14,106	16,151	19,524	25,638	32,199	42,918
Denmark [1]	9,101	9,447	9,805	9,807	11,635	14,282	16,527	22,146
Finland [1]	12,804	13,860	14,712	15,825	16,459	18,266	20,801	23,957
France [3]	37,832	44,946	44,857	33,858	43,138	36,237	44,181	36,971
Germany [1]	434,603	453,110	466,356	480,690	438,828	481,672	525,078	554,372
Greece [3]	13,832	12,695	14,887	16,413	15,194	19,513	18,357	20,257
Ireland [4]	n.a.	n.a.	n.a.	n.a.	43,500	94,000	147,900	178,504
Italy [2]	40,433	40,108	41,431	54,665	66,159	77,889	91,318	117,042
Luxembourg [1]	n.a.	n.a.	1,156	1,574	2,278	3,488	4,217	5,101 [e]
Netherlands [1]	10,063	11,152	12,147	13,048	17,814	23,155	28,344	36,317
Portugal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Spain [1]	19,284	29,998	41,471	46,710	61,830	77,772	100,832	131,118 [e]
Sweden [1]	23,884	22,868	21,376	21,147	23,257	26,877	33,757	42,312
United Kingdom [5]	94,792	105,048	93,340	122,465	120,999	219,797	357,468	609,415
EU-15	**706,295**	**755,334**	**833,181**	**892,608**	**949,548**	**1,195,850**	**1,504,957**	**1,910,370**
Iceland [1]	1,865	2,232	2,462	2,547	2,644	4,251	7,803	10,782
Norway [1]	3,366	3,658	4,195	5,166	5,549	7,427	11,240	20,074
Switzerland [1]	17,598	18,733	19,997	20,308	20,909	22,060	25,711	29,786
EEA-2 and CH	**22,829**	**24,623**	**26,654**	**28,021**	**29,102**	**33,738**	**44,754**	**60,642**
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cyprus and Malta	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Czech Republic [1]	62,095	70,581	77,947	81,484	64,546	68,300	78,428	90,258 [e]
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary [6]	4,632	4,715	3,739	5,001	3,596	6,346	7,445	8,755 [e]
Latvia [6]	n.a.	n.a.	2,524	3,121	n.a.	3,755	4,119	4,526 [e]
Lithuania [6]	n.a.	n.a.	n.a.	n.a.	735	934	992	1,061 [e]
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovak Republic [6]	n.a.	n.a.	n.a.	9,372	7,698	9,057	11,017	13,429 [e]
Slovenia [6]	n.a.	n.a.	418	492	203	656	711	794 [e]
NMS-8	**66,727**	**75,296**	**84,628**	**99,470**	**76,778**	**89,048**	**102,712**	**118,823**
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania [6]	n.a.	372	n.a.	372	373	365	362	359 [e]
NMS-2	**n.a.**	**372**	**n.a.**	**372**	**373**	**365**	**362**	**359**

Sources: National population statistics, Eurostat, LFS, own calculations and presentation.
1) National Statistics; 2) 2000-01: Eurostat; 2002-07: National Statistics; 3) LFS annual 4) 2004-07: Irish-LFS 4th Qu. (15+);
5) 2000-07: UK-LFS 2th Qu.; 6) Eurostat; e: estimated

In contrast, Austria and Germany experienced only a modest increase in the number of foreign residents from the NMS-8 during the 2003–2007 period. The stock of foreign residents from the NMS-8 has increased by about 30,000 persons in Austria. Germany has revised its migration statistics in 2004 such that the actual increase cannot be calculated properly. Taking the data revision into account, we can estimate the actual increase in the number of foreign residents at about 100,000 persons for the 2003 - 2007 period. Foreigners from the new member states meanwhile achieve a share of 1.1 per cent of the population in Austria and 0.7 per cent in Germany. Other important destinations for migrants from the NMS-8 are Spain (131,000 persons), Italy (117,000 persons), Belgium (43,000 persons), Sweden (42,000 persons) and the Netherlands (36,000 persons), but the share of foreign residents from the NMS-8 in the population of these countries does not exceed the EU-15 average of 0.5 per cent.

Table 4.2 Foreign residents from the NMS-8 in the EU and EEA in per cent of the host population, 2000-2007

Host country	2000	2001	2002	2003	2004	2005	2006	2007
				share of total population				
Austria [1]	n.a.	0.68%	0.71%	0.74%	0.84%	0.94%	1.01%	1.08%
Belgium [1]	0.09%	0.12%	0.14%	0.16%	0.19%	0.24%	0.31%	0.40%
Denmark [1]	0.17%	0.18%	0.18%	0.18%	0.22%	0.26%	0.30%	0.41%
Finland [1]	0.25%	0.27%	0.28%	0.30%	0.31%	0.35%	0.39%	0.45%
France [3]	0.06%	0.07%	0.07%	0.05%	0.07%	0.06%	0.07%	0.06%
Germany [1]	0.53%	0.55%	0.57%	0.58%	0.53%	0.58%	0.64%	0.67%
Greece [3]	0.13%	0.12%	0.14%	0.15%	0.14%	0.18%	0.16%	0.18%
Ireland [4]	n.a.	n.a.	n.a.	n.a.	1.07%	2.26%	3.47%	4.09%
Italy [2]	0.07%	0.07%	0.07%	0.09%	0.11%	0.13%	0.15%	0.20%
Luxembourg [1]	n.a.	n.a.	0.26%	0.35%	0.50%	0.76%	0.90%	1.06% [e]
Netherlands [1]	0.06%	0.07%	0.08%	0.08%	0.11%	0.14%	0.17%	0.22%
Portugal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Spain [1]	0.05%	0.07%	0.10%	0.11%	0.14%	0.18%	0.23%	0.29% [e]
Sweden [1]	0.27%	0.26%	0.24%	0.24%	0.26%	0.30%	0.37%	0.46%
United Kingdom [5]	0.16%	0.18%	0.16%	0.21%	0.20%	0.36%	0.59%	1.00%
EU-15	**0.20%**	**0.21%**	**0.23%**	**0.24%**	**0.25%**	**0.32%**	**0.40%**	**0.50%**
Iceland [1]	0.66%	0.78%	0.86%	0.88%	0.91%	1.43%	2.57%	3.47%
Norway [1]	0.07%	0.08%	0.09%	0.11%	0.12%	0.16%	0.24%	0.43%
Switzerland [1]	0.24%	0.26%	0.27%	0.28%	0.28%	0.30%	0.34%	0.39%
EEA-2 and CH	**0.19%**	**0.20%**	**0.22%**	**0.23%**	**0.24%**	**0.27%**	**0.36%**	**0.48%**
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cyprus and Malta	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Czech Republic [1]	0.60%	0.69%	0.76%	0.80%	0.63%	0.67%	0.76%	0.87% [e]
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary [6]	0.05%	0.05%	0.04%	0.05%	0.04%	0.06%	0.07%	0.09% [e]
Latvia [6]	n.a.	n.a.	0.11%	0.13%	n.a.	0.16%	0.18%	0.20% [e]
Lithuania [6]	n.a.	n.a.	n.a.	n.a.	0.02%	0.03%	0.03%	0.03% [e]
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovak Republic [6]	n.a.	n.a.	n.a.	0.17%	0.14%	0.17%	0.20%	0.25% [e]
Slovenia [6]	n.a.	n.a.	0.02%	0.02%	0.01%	0.03%	0.04%	0.04% [e]
NMS-8	**0.09%**	**0.10%**	**0.12%**	**0.14%**	**0.11%**	**0.12%**	**0.14%**	**0.16%**
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania [6]	n.a.	0.00%	n.a.	0.00%	0.00%	0.00%	0.00%	0.00% [e]
NMS-2	**n.a.**	**0.00%**	**n.a.**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**

Sources: National population statistics, Eurostat, LFS, own calculations and presentation.
1) National Statistics; 2) 2000-01: Eurostat; 2002-07: National Statistics; 3) LFS annual 4) 2004-07: Irish-LFS 4th Qu. (15+);
5) 2000-07: UK-LFS 2th Qu.; 6) Eurostat; e: estimated

The share of Austria and Germany in the total number of foreign residents from the NMS-8 in the EU-15 has declined from almost 63 per cent in 2002 to 34 per cent in 2007, while that of Ireland and the UK has increased from 11 per cent to 41 per cent during the same period of time. This diversion process can be inter alia explained by the selective application of the transitional arrangements for the free movement of workers. While Ireland and the UK opened their labour markets, Austria and Germany maintained their immigration restrictions. Interestingly enough, other destinations which have opened their labour markets completely (Sweden) or partially (Denmark) have not been affected by this diversion effect.

The available data for the years 2006 and 2007 do moreover not suggest that the removal of immigration restrictions in numerous EU member states (Finland, Greece, Italy, Portugal, Netherlands, Spain) for the second period of the transitional

arrangements has involved a visible increase in immigration flows from the NMS-8. By and large, the removal of migration barriers in these 'second-movers' has not affected the scale of migration in the enlarged EU.

The available evidence thus suggests that the high share of migrants from the NMS-8 in Ireland and the UK cannot be explained by the selective application of transitional arrangements for the free movement of workers alone. Other factors, such as the increasing English language proficiency particularly among the young cohorts in the NMS, favourable labour market conditions and flexible labour market institutions, and the declining costs of distance, have facilitated the diversion of migration flows to these destinations as well.

4.1.3 Immigration from the NMS-2 into the EU and EEA

Immigration from Bulgaria and Romania – summarised as the two new member states (NMS-2) – into EU-15 countries is restricted in most EU-15 countries. Nonetheless, the number of foreign residents from there has increased from 279,000 persons in 2000 to 1.86 million by the end of 2007. This corresponds to an annual increase in the number of residents of about 226,000 persons p.a. Meanwhile, the stock of foreign residents from the NMS-2 has achieved 0.49 per cent of the population in the EU-15. In the new member states the stock of NMS-2 immigrants stagnates at about 79,000 persons. In the other member states of the EEA and Switzerland, immigration from the NMS-2 is at some 9,000 persons negligible (see Table 4.3, Table 4.4).

Immigration from Bulgaria and Romania has been facilitated by bilateral agreements between Spain and Italy and the sending countries and the legalisation of immigrants there. Spain is the main destination for migrants from the NMS-2 at a migration stock of about 829,000 persons, followed by Italy with 659,000 persons.[11] By the end of 2007, the share of NMS-2 immigrants in the population achieves 1.9 per cent in Spain and 1.1 per cent in Italy. Other important destinations in the EU-15 are Germany (131,000 persons), Greece (53,000 persons), the UK (40,000 persons) and Austria (37,000 persons).

[11] Note that the official statistics may underreport migrants from the NMS-2 in Italy, since it does inter alia not count people whose residence permit has expired but still stay in the country and wait for a prolongation. The Italian Caritas estimates therefore the stock of migrants from the NMS-2 in Italy at about 560,000 persons by the end of 2006.

Table 4.3 Foreign residents from the NMS-2 in the EU and EEA, 2000-2007

Host country	2000	2001	2002	2003	2004	2005	2006	2007
				in persons				
Austria [1]	n.a.	22,387	24,926	26,802	28,367	29,573	29,958	36,792
Belgium [1]	3,435	4,642	5,900	6,831	8,238	10,814	14,095	23,810
Denmark [1]	1,580	1,646	1,746	1,834	1,987	2,200	2,350	3,316
Finland [1]	786	854	873	887	909	970	1,089	1,388
France [3]	5,752	8,761	7,960	8,840	17,282	12,027	39,069	43,652
Germany [1]	124,453	126,245	131,098	133,404	112,532	112,196	112,406	131,402
Greece [3]	12,961	17,344	25,612	30,583	39,220	45,551	49,086	52,567
Ireland [4]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	24,496
Italy [2]	69,020	81,444	102,363	189,279	264,223	315,316	362,124	658,755
Luxembourg [1]	n.a.	n.a.	477	498	545	700	871	1,085 [e]
Netherlands [1]	2,564	3,168	3,720	4,413	4,944	5,082	5,427	11,272
Portugal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Spain [1]	43,676	97,020	190,185	277,814	410,403	508,776	649,076	828,772 [e]
Sweden [1]	3,951	3,300	3,123	3,148	3,170	3,205	3,080	6,280
United Kingdom [5]	10,504	9,739	17,494	17,979	17,118	33,578	37,945	40,023
EU-15	**278,682**	**376,550**	**515,477**	**702,312**	**908,938**	**1,079,988**	**1,306,576**	**1,863,610**
Iceland [1]	108	123	141	143	154	178	204	241
Norway [1]	835	893	1,049	1,205	1,313	1,427	1,520	1,543
Switzerland [1]	5,060	5,745	6,480	6,535	6,748	6,813	6,846	6,943
EEA-2 and CH	**6,003**	**6,761**	**7,670**	**7,883**	**8,215**	**8,418**	**8,570**	**8,727**
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cyprus and Malta	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Czech Republic [1]	6,408	6,405	6,485	6,303	7,035	7,252	7,451	7,656 [e]
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary [6]	44,371	46,123	48,366	56,794	68,785	67,390	68,074	68,766 [e]
Latvia [6]	n.a.	n.a.	26	42	n.a.	37	44	52 [e]
Lithuania [6]	n.a.	n.a.	n.a.	n.a.	33	46	107	249 [e]
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovak Republic [6]	n.a.	n.a.	n.a.	2,757	1,051	971	1,247	1,711 [e]
Slovenia [6]	n.a.	n.a.	213	240	199	208	284	396 [e]
NMS-8	**50,779**	**52,528**	**55,090**	**66,136**	**77,103**	**75,904**	**77,207**	**78,831**
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania [6]	n.a.	189	n.a.	189	190	186	186	186 [e]
NMS-2	**n.a.**	**189**	**n.a.**	**189**	**190**	**186**	**186**	**186**

Sources: National population statistics, Eurostat, LFS, own calculations and presentation.
1) National Statistics; 2) 2000-01: Eurostat; 2002-07: National Statistics; 3) LFS annual 4) 2004-07: Irish-LFS 4th Qu. (15+);
5) 2000-07: UK-LFS 2th Qu.; 6) Eurostat; e: estimated

Again, we observe a diversion effect: Germany has been with some 260,000 residents the main destination for migrants from the NMS-2 in the beginning of the 1990s, a figure which has declined to about 130,000 persons by the beginning of this decade. At the same time, migration from Romania and Bulgaria to Spain and Italy has increased substantially.

It is worthwhile noting in this context that the figures presented here refer to legal migration only. Incentives for illegal migration are high in case of Bulgaria and Romania, since legal immigration opportunities are limited. Anecdotal evidence suggests that actual migration stocks from the NMS-2 in the EU-15 are substantially higher, but reliable evidence is missing.

Table 4.4 Foreign residents from the NMS-2 in the EU and EEA in per cent of the host population, 2000-2007

Host country	2000	2001	2002	2003	2004	2005	2006	2007
				share of total population				
Austria [1]	n.a.	0.28%	0.31%	0.33%	0.35%	0.36%	0.36%	0.44%
Belgium [1]	0.03%	0.05%	0.06%	0.07%	0.08%	0.10%	0.13%	0.22%
Denmark [1]	0.03%	0.03%	0.03%	0.03%	0.04%	0.04%	0.04%	0.06%
Finland [1]	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.03%
France [3]	0.01%	0.01%	0.01%	0.01%	0.03%	0.02%	0.06%	0.07%
Germany [1]	0.15%	0.15%	0.16%	0.16%	0.14%	0.14%	0.14%	0.16%
Greece [3]	0.12%	0.16%	0.23%	0.28%	0.35%	0.41%	0.44%	0.47%
Ireland [4]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.56%
Italy [2]	0.12%	0.14%	0.18%	0.33%	0.45%	0.54%	0.61%	1.11%
Luxembourg [1]	n.a.	n.a.	0.11%	0.11%	0.12%	0.15%	0.19%	0.23% [e]
Netherlands [1]	0.02%	0.02%	0.02%	0.03%	0.03%	0.03%	0.03%	0.07%
Portugal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Spain [1]	0.11%	0.24%	0.46%	0.66%	0.96%	1.17%	1.47%	1.85% [e]
Sweden [1]	0.04%	0.04%	0.03%	0.04%	0.04%	0.04%	0.03%	0.07%
United Kingdom [5]	0.02%	0.02%	0.03%	0.03%	0.03%	0.06%	0.06%	0.07%
EU-15	**0.08%**	**0.10%**	**0.14%**	**0.19%**	**0.24%**	**0.29%**	**0.35%**	**0.49%**
Iceland [1]	0.04%	0.04%	0.05%	0.05%	0.05%	0.06%	0.07%	0.08%
Norway [1]	0.02%	0.02%	0.02%	0.03%	0.03%	0.03%	0.03%	0.03%
Switzerland [1]	0.07%	0.08%	0.09%	0.09%	0.09%	0.09%	0.09%	0.09%
EEA-2 and CH	**0.05%**	**0.06%**	**0.06%**	**0.06%**	**0.07%**	**0.07%**	**0.07%**	**0.07%**
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cyprus and Malta	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Czech Republic [1]	0.06%	0.06%	0.06%	0.06%	0.07%	0.07%	0.07%	0.07% [e]
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary [6]	0.43%	0.45%	0.48%	0.56%	0.68%	0.67%	0.68%	0.68% [e]
Latvia [6]	n.a.	n.a.	0.00%	0.00%	n.a.	0.00%	0.00%	0.00% [e]
Lithuania [6]	n.a.	n.a.	n.a.	n.a.	0.00%	0.00%	0.00%	0.01% [e]
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovak Republic [6]	n.a.	n.a.	n.a.	0.05%	0.02%	0.02%	0.02%	0.03% [e]
Slovenia [6]	n.a.	n.a.	0.01%	0.01%	0.01%	0.01%	0.01%	0.02% [e]
NMS-8	**0.07%**	**0.07%**	**0.08%**	**0.09%**	**0.11%**	**0.10%**	**0.11%**	**0.11%**
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania [6]	n.a.	0.00%	n.a.	0.00%	0.00%	0.00%	0.00%	0.00% [e]
NMS-2	**n.a.**	**0.00%**	**n.a.**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**

Sources: National population statistics, Eurostat, LFS, own calculations and presentation.
1) National Statistics; 2) 2000-01: Eurostat; 2002-07: National Statistics; 3) LFS annual 4) 2004-07: Irish-LFS 4th Qu. (15+);
5) 2000-07: UK-LFS 2th Qu.; 6) Eurostat; e: estimated

4.1.4 Immigration from the candidate countries into the EU and EEA

The six candidate and potential candidate countries (CAND-6) from South-Eastern Europe have been one of the main sources of immigrants in Western Europe during the post-WW II period. Especially workers from Turkey and from the former Yugoslavia have been the main targets for guestworker recruitment in Austria, Germany, Switzerland and other Western European countries. In addition, migrants from Albania, one of the countries with the lowest per capita income in Europe, form an important source of immigration in Italy and Greece since the removal of emigration barriers in the beginning of the 1990s. Altogether, the stock of immigrants from the candidate countries in the EU-15 amounted to 4.1 million people in the EU-15[12] in 2000 and another 476, 000 people residing in the

[12] Unfortunately, we have no figures for Ireland, Luxembourg, and Portugal.

other EEA countries and Switzerland at the same time. Since the EU's Eastern enlargement, the stock of migrants from this region has, however, stagnated in the EU-15. By the end of 2007, the EU-15 countries reports about 4.3 million migrants from the candidate countries (see Table 4.5, Table 4.6).

Table 4.5 Foreign residents from the candidate countries in the EU and the EEA, 2000-2007

Host country	2000	2001	2002	2003	2004	2005	2006	2007
				in persons				
Austria [1]	n.a.	432,149	437,481	428,386	420,237	415,857	405,949	401,885
Belgium [1]	66,240	56,872	54,018	53,811	52,525	53,857	54,758	66,349
Denmark [1]	58,086	52,841	50,319	48,146	47,304	45,494	44,872	45,065
Finland [1]	5,061	6,107	6,561	7,328	7,937	8,101	8,395	8,397
France [3]	240,328	233,120	250,124	116,420	159,829	186,629	153,974	168,246
Germany [1]	3,097,721	3,025,940	2,968,399	2,922,084	2,346,782	2,519,298	2,477,923	2,405,952
Greece [3]	181,842	209,475	252,780	288,834	338,863	343,603	337,901	376,487
Ireland [4]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Italy [2]	227,148	291,816	346,331	422,471	487,518	533,861	576,251	611,807
Luxembourg [1]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands [1]	113,851	112,596	112,195	113,584	111,725	109,321	106,411	102,798
Portugal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Spain [1]	6,584	7,970	9,172	8,914	10,468	10,493	9,939	9,458 [e]
Sweden [1]	48,342	42,437	36,736	33,699	32,309	30,224	27,083	27,271
United Kingdom [5]	61,074	83,063	89,731	96,260	81,866	77,995	106,430	102,255
EU-15	**4,106,277**	**4,554,386**	**4,613,847**	**4,539,937**	**4,097,363**	**4,334,733**	**4,309,886**	**4,325,970**
Iceland [1]	609	697	740	724	699	734	813	680
Norway [1]	27,507	25,723	20,810	19,707	17,539	17,053	15,552	14,072
Switzerland [1]	447,839	452,933	455,804	452,495	445,797	436,546	423,670	413,089
EEA-2 and CH	**475,955**	**479,353**	**477,354**	**472,926**	**464,035**	**454,333**	**440,035**	**427,841**
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cyprus and Malta	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Czech Republic [1]	8,556	7,976	8,098	7,917	9,036	9,413	10,134	10,959 [e]
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary [6]	1,916	1,965	9,628	14,310	2,962	14,459	14,913	15,391 [e]
Latvia [6]	n.a.	n.a.	45	46	n.a.	79	70	72 [e]
Lithuania [6]	n.a.	n.a.	n.a.	n.a.	70	71	132	265 [e]
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovak Republic [6]	n.a.	n.a.	n.a.	2,784	1,160	1,170	1,626	2,786 [e]
Slovenia [6]	n.a.	n.a.	40,424	40,553	40,306	43,371	48,130	53,577 [e]
EU-8	**10,472**	**9,941**	**58,195**	**65,610**	**53,534**	**68,563**	**75,005**	**83,051**
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania [6]	n.a.	3,027	n.a.	3,027	3,069	3,071	3,079	3,087 [e]
EU-2	**n.a.**	**3,027**	**n.a.**	**3,027**	**3,069**	**3,071**	**3,079**	**3,087**

Sources: National population statistics, Eurostat, LFS, own calculations and presentation.
1) National Statistics; 2) 2000-01: Eurostat; 2002-07: National Statistics; 3) LFS annual 4) 2004-07: Irish-LFS 4th Qu. (15+);
5) 2000-07: UK-LFS 2th Qu.; 6) Eurostat; e: estimated

Table 4.6 Foreign residents from the candidate countries in the EU and the EEA in per cent of the host population, 2000-2007

Host country	2000	2001	2002	2003	2004	2005	2006	2007
				share of total population				
Austria [1]	n.a.	5.37%	5.41%	5.27%	5.14%	5.05%	4.90%	4.83%
Belgium [1]	0.65%	0.55%	0.52%	0.52%	0.50%	0.51%	0.52%	0.62%
Denmark [1]	1.09%	0.99%	0.94%	0.89%	0.88%	0.84%	0.83%	0.83%
Finland [1]	0.10%	0.12%	0.13%	0.14%	0.15%	0.15%	0.16%	0.16%
France [3]	0.40%	0.38%	0.41%	0.19%	0.26%	0.30%	0.24%	0.26%
Germany [1]	3.77%	3.67%	3.60%	3.54%	2.84%	3.05%	3.01%	2.92%
Greece [3]	1.67%	1.91%	2.30%	2.62%	3.06%	3.09%	3.03%	3.36%
Ireland [4]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Italy [2]	0.40%	0.51%	0.61%	0.73%	0.84%	0.91%	0.98%	1.03%
Luxembourg [1]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands [1]	0.71%	0.70%	0.69%	0.70%	0.69%	0.67%	0.65%	0.63%
Portugal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Spain [1]	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02% [e]
Sweden [1]	0.54%	0.48%	0.41%	0.38%	0.36%	0.33%	0.30%	0.30%
United Kingdom [5]	0.10%	0.14%	0.15%	0.16%	0.14%	0.13%	0.18%	0.17%
EU-15	**1.15%**	**1.25%**	**1.26%**	**1.23%**	**1.10%**	**1.16%**	**1.15%**	**1.15%**
Iceland [1]	0.22%	0.24%	0.26%	0.25%	0.24%	0.25%	0.27%	0.22%
Norway [1]	0.61%	0.57%	0.46%	0.43%	0.38%	0.37%	0.33%	0.30%
Switzerland [1]	6.23%	6.26%	6.26%	6.17%	6.03%	5.87%	5.66%	5.47%
EEA-2 and CH	**3.98%**	**3.99%**	**3.94%**	**3.88%**	**3.78%**	**3.68%**	**3.53%**	**3.40%**
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Malta	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cyprus and Malta	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**	**n.a.**
Czech Republic [1]	0.08%	0.08%	0.08%	0.08%	0.09%	0.09%	0.10%	0.11% [e]
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary [6]	0.02%	0.02%	0.09%	0.14%	0.03%	0.14%	0.15%	0.15% [e]
Latvia [6]	n.a.	n.a.	0.00%	0.00%	n.a.	0.00%	0.00%	0.00% [e]
Lithuania [6]	n.a.	n.a.	n.a.	n.a.	0.00%	0.00%	0.00%	0.01% [e]
Poland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovak Republic [6]	n.a.	n.a.	n.a.	0.05%	0.02%	0.02%	0.03%	0.05% [e]
Slovenia [6]	n.a.	n.a.	2.03%	2.03%	2.02%	2.17%	2.40%	2.65% [e]
EU-8	**0.01%**	**0.01%**	**0.08%**	**0.09%**	**0.07%**	**0.09%**	**0.10%**	**0.11%**
Bulgaria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romania [6]	n.a.	0.01%	n.a.	0.01%	0.01%	0.01%	0.01%	0.01% [e]
EU-2	**n.a.**	**0.01%**	**n.a.**	**0.01%**	**0.01%**	**0.01%**	**0.01%**	**0.01%**

Sources: National population statistics, Eurostat, LFS, own calculations and presentation.
1) National Statistics; 2) 2000-01: Eurostat; 2002-07: National Statistics; 3) LFS annual 4) 2004-07: Irish-LFS 4th Qu. (15+);
5) 2000-07: UK-LFS 2th Qu.; 6) Eurostat; e: estimated

The main destination for immigrants from the candidate and potential candidate countries is Germany. In 2000, about 3.1 million or 75 per cent of the immigrants from the candidate countries in the EU-15 resided in Germany. The German migration statistics reports 2.4 million residents from the candidate countries or 56 per cent of the migrants from there in the EU-15 by the end of 2007. This decline can be largely traced back to the revision of the migration statistics which reduced the number of migrants from the candidate countries by about 600,000 persons. Moreover, the repatriation of refugees from the civil wars in the former Yugoslavia and an increasing number of naturalisations following the reform of the immigration act in 2000 has contributed to this decline. Other important destinations for migrants from the candidate countries are Italy (612,000 persons), Austria (402,000 persons), Greece (376,000 persons) and France (168,000 persons), and among the EEA countries Switzerland with 413,000 persons. While the number of immigrants from the candidate countries has declined or stagnated

in most destination countries, it has substantially increased in Italy (+385,000 persons) and Greece (+195,000 persons) since the beginning of this decade. This can be traced back largely to the immigration of Albanians and some successor states of the former Yugoslavia to these destinations.

To sum up, at a share of 1.2 per cent of the population in the EU-15 immigrants from the candidate and potential candidate countries exceed the stock of foreign residents from the new member states by far. However, with the notable exceptions of Italy and Greece, this stock has been stagnating or declining in most destinations since the beginning of this decade. Tighter immigration conditions for third country nationals in most EU member states (Boeri and Brücker, 2005) and adverse economic conditions in main destinations such as Germany have contributed to this development.

4.1.5 Main emigration trends from a sending country perspective

By the end of 2007, the migration data from the statistics in the receiving countries indicates that about 3.8 million emigrants from the NMS-10 resided in the EU-15. The main sending countries are Romania (1.6 million) and Poland (1.3 million). The share of EU-emigrants in the population of the sending countries fluctuates heavily across country groups and individual countries: About 2.6 per cent of the population in the NMS-8 and 6.4 per cent of the population of the NMS-2 resided by the end of 2007 in the EU-15. The emigration shares in the population vary with the per capita income level: While emigration shares are relatively low in the Czech Republic (1.0 per cent), Hungary (1.3 per cent), and Slovenia (1.8 per cent), they are particularly high in Romania (7.2 per cent), Bulgaria (4.1 per cent), Lithuania (3.8 per cent), and Poland (3.4 per cent) (see Table 4.7, Table 4.8).

Table 4.7 EU-15 emigrants from the NMS-8, NMS-2 and CAND-6, 2000-2007

Sending country	2000	2001	2002	2003	2004	2005	2006	2007
				in persons				
Czech Republic	42,379	52,810	58,138	71,119	62,894	71,185	90,952	104,442
Estonia	18,458	20,924	22,639	26,699	26,746	30,567	32,885	36,735
Hungary	84,976	94,905	98,492	94,274	91,961	102,158	105,939	132,582
Latvia	21,713	19,309	22,184	24,632	24,194	32,920	42,119	42,547
Lithuania	24,154	36,567	41,577	53,572	52,613	85,364	114,185	128,361
Poland	476,229	531,986	545,072	576,939	606,442	757,252	992,924	1,297,647
Slovak Republic	25,195	36,947	39,019	43,948	52,343	81,705	91,560	132,207
Slovenia	23,814	30,697	31,218	35,672	32,355	34,698	34,395	35,848
NMS-8	**716,917**	**824,145**	**858,338**	**926,854**	**949,548**	**1,195,850**	**1,504,957**	**1,910,370**
Bulgaria	71,437	102,980	140,864	166,330	203,528	219,233	255,163	310,335
Romania	217,669	285,075	389,045	553,508	724,697	880,738	1,072,307	1,553,276
NMS-2	**289,106**	**388,054**	**529,909**	**719,839**	**928,225**	**1,099,971**	**1,327,470**	**1,863,610**
Albania	412,915	434,002	514,291	581,605	670,751	717,450	743,485	805,416
Bosnia-Herzegovina	227,011	323,006	323,929	330,751	313,440	314,624	310,651	319,347
Croatia	249,031	316,953	329,448	334,136	324,698	326,088	322,926	316,504
Macedonia (FYROM)	83,848	103,932	112,922	137,863	146,209	153,059	161,556	171,450
Serbia-Montenegro	679,548	835,178	806,739	777,571	342,551	521,495	508,255	471,764
Turkey	2,453,924	2,541,316	2,526,518	2,378,011	2,299,713	2,302,017	2,263,013	2,241,489
Cand-6	**4,106,277**	**4,554,386**	**4,613,847**	**4,539,937**	**4,097,363**	**4,334,733**	**4,309,886**	**4,325,970**

Sources: National population statistics, Eurostat, LFS, own calculations and presentation.
2000: without Austria; 2000-2001: without Luxembourg; 2000-2003: without Ireland
2004-2007: Ireland included with structure of PPSN

These figures refer to migration stocks which hide a large number of inflows and outflows every year. The statistics of gross migration inflows and outflows in countries such as Germany or the large difference between gross figures on work permits in the UK and the actual number of foreigner workers there suggests that return migration is substantial and has increased recently. As in other migration episodes, a high share of migration from the new member states is temporary. The relatively short distance and falling communication and transport costs make it likely that the share of temporary migration is higher in case of the NMS than in other migration episodes.

Table 4.8 EU-15 emigrants from the NMS-8, NMS-2 and CAND-6 in per cent of the home population, 2000-2007

Sending country	2000	2001	2002	2003	2004	2005	2006	2007
				share of total population				
Czech Republic	0.41%	0.52%	0.57%	0.70%	0.62%	0.70%	0.89%	1.01%
Estonia	1.35%	1.53%	1.67%	1.97%	1.98%	2.27%	2.45%	2.74%
Hungary	0.83%	0.93%	0.97%	0.93%	0.91%	1.01%	1.05%	1.32%
Latvia	0.91%	0.82%	0.95%	1.06%	1.05%	1.43%	1.84%	1.87%
Lithuania	0.69%	1.05%	1.20%	1.55%	1.53%	2.50%	3.36%	3.80%
Poland	1.24%	1.39%	1.43%	1.51%	1.59%	1.98%	2.60%	3.40%
Slovak Republic	0.47%	0.69%	0.73%	0.82%	0.97%	1.52%	1.70%	2.45%
Slovenia	1.20%	1.54%	1.57%	1.79%	1.62%	1.73%	1.71%	1.78%
EU 8	**0.96%**	**1.10%**	**1.15%**	**1.25%**	**1.28%**	**1.61%**	**2.03%**	**2.57%**
Bulgaria	0.87%	1.28%	1.79%	2.13%	2.62%	2.83%	3.31%	4.05%
Romania	0.97%	1.29%	1.78%	2.55%	3.34%	4.07%	4.97%	7.21%
EU 2	**0.94%**	**1.29%**	**1.79%**	**2.43%**	**3.15%**	**3.74%**	**4.53%**	**6.38%**
Albania	13.49%	14.12%	16.63%	18.69%	21.45%	22.83%	23.56%	25.46%
Bosnia-Herzegovina	6.02%	8.50%	8.48%	8.63%	8.16%	8.19%	8.08%	8.31%
Croatia	5.57%	7.14%	7.41%	7.52%	7.31%	7.34%	7.27%	7.13%
Macedonia (FYROM)	4.14%	5.11%	5.56%	6.80%	7.19%	7.51%	7.92%	8.39%
Serbia-Montenegro	6.39%	7.84%	8.60%	9.57%	4.22%	6.47%	6.30%	5.85%
Turkey	3.64%	3.72%	3.65%	3.39%	3.23%	3.19%	3.18%	3.20%
Cand 6	**4.49%**	**4.93%**	**5.01%**	**4.95%**	**4.42%**	**4.63%**	**4.65%**	**4.72%**

Sources: National population statistics, Eurostat, LFS, own calculations and presentation.
2000: without Austria; 2000-2001: without Luxembourg; 2000-2003: without Ireland
2004-2007: Ireland included with structure of PPSN

4.2 A review of the migration forecasts prior to EU enlargement

It is controversial whether the current inflows of migrants from the NMS as described in the previous section contradict the migration projections which have been carried out prior to EU enlargement. There have been numerous studies attempting to forecast potential migration from the NMS before enlargement. The mainstream of these studies has 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.[13]

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.

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

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.[14]

4.2.1 Surveys of migration intentions

A number of studies base forecasts of potential migration on surveys of migration intentions in the NMS (Fassmann and 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 face several methodological 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 in surveys differ substantially depending on the questionnaire and other aspects of the 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 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 NNS across the EU Member States.

According to Fouarge and Easter (2007), 7.4 per cent of the population in the NMS have revealed a general migration intention in the 2005 wave of the Eurobarometer Mobility Survey, compared to 2.4 per cent in the 2002 wave. It is not clear whether the difference between the two waves can be attributed to a higher propensity to move since the questionnaire has changed between the two waves. It is also worthwhile noting that 5.0

[14] For previous literature reviews see Brücker and Siliverstovs (2006a; 2006b), Fassmann and Münz (2002), Hönekopp (2001), Straubhaar (2002) and Zaiceva and Zimmermann (2007).

per cent of the EU-15 population have announced a general intention to move in the 2005 Eurobarometer survey, although migration stocks from these countries number less than 3 per cent in the EU-15.

By and large, the findings of the Eurobarometer survey are consistent with those in the 1995 wave of the International Social Survey Programme (ISSP), although considerable differences exist in individual countries. Similarly, Fassmann and Hintermann (1997) and Wallace (1998) find general migration intentions between 3 and 30 per cent of the population. Following these studies, the actual migration potential derived from the general migration intentions is estimated at about 3 per cent of the population in the NMS, while the findings for Bulgaria and Romania are slightly above the NMS-8 average (see Krieger, 2003; Fassmann and Hintermann, 1997; Wallace, 1998).

4.2.2 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). Thus, the results are very similar to the estimates of the 'actual migration potential' derived from surveys of migration intentions.

The income difference measured in purchasing power parities between the EU-15 and the NMS-8 is indeed similar to that between the members of the then 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.

4.2.3 Forecasts based on econometric models

The largest part of the migration forecasts relies 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

capturing 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 with respect to the variables they consider and regarding their functional forms.[15] One important difference in the literature is between stock and flow models, which need, however, not necessarily yield different estimates of the migration potential if properly applied.[16] 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 (Alvarez-Plata et al., 2003; Brücker and Siliverstovs 2006a; 2006b).

[15] For derivations of macro migration functions from theoretical models, see inter alia Hatton (1995), Daveri and Faini (1995), Faini and Venturini (1995) and Brücker and Schröder (2006).

[16] The majority of the models in the empirical literature are specified as gross- or net flow models (e.g. Hatton, 1995; Hille and Straubhaar, 2001; Pederson et al., 2004; Pytlikova, 2007). These models rely explicitly or implicitly on the assumption of a representative agent, i.e. that individuals do not differ with regard to their preferences or human capital characteristics relevant for migrations. In contrast, stock models are derived from the assumption that individuals are heterogeneous, such that an equilibrium migration stock is achieved when the benefits from migration equals its costs for the marginal individual (Brücker and Schröder, 2006).

Table 4.9 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 and 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 and 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%

Source: Own presentation based on the quoted studies.

Table 4.9 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.[17] 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 than 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).

Among the studies for Germany, Alvarez-Plata et al. (2003), Boeri and Brücker (2001) and Brücker (2002) apply a stock model with country-specific fixed effects, while Flaig (2001) and Sinn et al. (2001) base their estimates on a stock model which is estimated by pooled OLS. The first studies estimate the annual net inflow at 0.22 per cent of the population from the NMS-8 (160,000 persons p.a.) for Germany, the latter studies forecast the net inflow at 0.64 per cent p.a. (470,000 persons p.a.). The fixed-effects models estimate the long-run migration potential at 1.7 to 1.8 million persons for Germany, and the latter studies at 5.3 million persons. Although the studies employ also different data bases, this difference can be mainly traced back to the use of fixed effects and pooled OLS models (Brücker, 2002; Flaig, 2002). Note that regression diagnostics rejects the pooled OLS specification and that the forecasting error of the pooled OLS model is about twice as high as that of the fixed effects model (see above). In case of the fixed effects models, an extrapolation of the estimate for Germany based on the regional distribution of migrants before enlargement provides an initial net inflow of 0.33 per cent of the population in the NMS-8 p.a. (240,000 persons p.a.), and in case of the pooled OLS model a net inflow of 1.1 per cent p.a. (780,000 persons p.a.). The long-run migration potential is estimated by the fixed effects model at 3.9 per cent of the population in the NMS-8 (2.8 million persons), and in case of the pooled OLS models at 12 per cent (8.8 million persons) p.a.

The estimates by Fertig (2001) and Fertig and Schmidt (2001) are substantially below the other forecasts: The initial net immigration rate from the NMS to Germany is estimated there at 0.01 to 0.07 per cent p.a., which corresponds to a net immigration of 7,000 to 50,000 persons p.a. from the NMS. Note that the error component model of Fertig and Schmidt (2001) does not consider any explanatory variables, such that the forecasts refer to the long-run average within their sample. It is possible that this has resulted in an underestimation of the migration potential from the NMS, since the income of most countries in their sample is above that of the NMS.

[17] Note that Table 4.9 is a selection of the literature. There exist numerous other studies which, by and large, resemble the findings represented in this table.

The Dustmann et al. (2003) study estimates a flow model with GMM for Germany and the UK, which considers also individual effects. Again, this model provides lower estimates compared to the standard fixed effects models, although the upper range of the estimate for Germany is getting close to the estimates by Alvarez-Plata et al. (2003) and Boeri and Brücker (2001). The findings for the UK refer to flow data from the Passenger Survey and provide, at a share of 0.004 to 0.01 per cent, a very low estimate for the UK. Note that the Dustmann et al. (2003) study - as all other studies - does not consider any possible diversion effects which may explain the later migration surge in the UK.

The gravity-type estimates for the EU-15 of Alvarez-Plata et al. (2003) and Hille and Straubhaar (2001) obtain relatively similar results. Note that the Alvarez-Plata et al. (2003) projection refers to the labour force and not to the population form the NMS, while the estimates by Hille and Straubhaar (2001) use population data. Since the labour force is about 60 per cent of the foreign population from the NMS, the forecasted figures are remarkably similar. Moreover, the aggregate figures from the EU-level estimates are consistent with the extrapolations from the German estimates by Alvarez-Plata et al. (2003) and Boeri and Brücker (2001).

Altogether, at the level of the EU-15, the estimates of these studies are by and large consistent with the migration development from the NMS-8 since enlargement: The actual growth in the number of foreign residents numbered about 250,000 persons p.a. on average since enlargement, which corresponds to 0.34 per cent of the population in the NMS-8. This is consistent with the projections of the Alvarez-Plata et al. (2003), Boeri and Brücker (2001), Hille and Straubhaar (2001) and Zaiceva (2005) studies, while the Flaig (2002) and Sinn et al. (2001) study provided higher, and Fertig (2001), Fertig and Schmidt (2002) and Dustmann et al. (2003) lower estimates.

While the aggregate estimates of potential migration from the NMS-8 to the EU-15 are in many studies consistent with the scale of migration after EU enlargement, the regional structure deviates largely from the estimates. As has been shown above, the regional migration patterns have dramatically changed in the course of EU enlargement. Hence, those studies which have extrapolated the regional distribution of migrants before enlargement tend to overstate the inflows to Austria and Germany and to understate the migration to Ireland and the UK. The same holds true for studies which base their estimates for the UK on past migration flows. Actual migration inflows into the UK have been at about 160,000 p.a. larger than the net flows predicted in the Dustmann et al. (2003) study for the UK (4,000-13,000). Similarly, Boeri and Brücker (2001) and Alvarez-Plata et al. (2001) provided projections based on the extrapolation of the German forecasts which have been substantially below the actual inflows into UK and Ireland after enlargement. In contrast, the flows to the Scandinavian countries have been at or below the predicted levels.

Since a counterfactual situation with a free movement of workers does not exist for the NMS, it is hardly possible to disentangle the causes for the diversion of the migration flows from the NMS after EU enlargement empirically. Obviously, the selective application of the transitional arrangements is one if not the major cause of the diversion process. All

studies in the literature rely however explicitly or implicitly on the counterfactual assumption that all EU countries will open their labour markets at the same time for migrants from the NMS. The selective application of transitional arrangements will, however, trigger additional inflows to countries which will open their labour markets and less inflows to countries which do not, as Alvarez-Plata et al. (2003) have emphasized in their study before EU enlargement.

The selective application of the transitional arrangements can however not explain why Sweden and other Scandinavian countries received only moderate inflows from the NMS-8, while Ireland and the UK absorbed the overwhelming share. Other causes which may have influenced the regional allocation of migration flows from the NMS after EU enlargement are the English language, together with flexible labour market institutions. Moreover, the economic down-turn in Germany has certainly contributed to the diversion towards more prosperous destinations. It might also be possible that the pre-enlargement allocation of migrants from the NMS across the EU-15 was biased by the selective application of immigration restrictions, i.e. the relatively liberal immigration conditions in Austria and Germany compared to other destinations. Finally, as has been outlined in Chapter 3.4, the erosion of variable transport costs caused by low-budget air transport makes geographical migration patterns less stable than in previous migration episodes. As a consequence, it was relatively cheap for migrants from the NMS to switch from Austria and Germany to Ireland and the UK and to establish new migration networks there.

These arguments highlight a deeper methodological problem of forecasting migration in the context of EU enlargement in the previous literature: All these models rely explicitly or implicitly on the assumption of the irrelevance of independent alternatives, i.e. that the economic and institutional conditions in alternative destinations do not matter for the scale of migration towards a specific destination. However, the fact that main destinations such as Germany and Austria have maintained their immigration restrictions when the UK and Ireland have opened their labour markets has certainly triggered additional immigration flows to the latter destinations. Similarly, changing economic or social conditions in one destination may also affect the scale of migration in other destinations. The impact of third countries is particularly relevant in the context of the EU Eastern enlargement, since the institutional conditions for immigration have changed dramatically in some destinations but not in other. This is of course hardly possible to identify in advance, since similar evidence from previous migration episodes did not exist in the EU.

4.3 A projection of the migration potential from the NMS

In this section we provide a projection of the migration potential from the NMS-8 and the NMS-2 into the EU-15. In contrast to the standard approach, we treat the EU-15 as a single destination, which enables us to circumvent the methodological problem of ignoring relevant alternatives. Our estimates exploit the recent data on migration since the EU Eastern enlargement. These data allow including the NMS into the sample on

which the estimates of the relevant parameters are based, which has not been done by most studies carried out before enlargement.

The projections we present here are based on two scenarios: The first scenario assumes that the present institutional conditions are maintained, i.e. that the transitional arrangements are applied by the EU member states in the same way as during the 2004-2007 period. The same holds true for the present restrictions for immigration from Bulgaria and Romania. The second scenario is based on the assumption that the free movement of workers is introduced for the NMS in the entire EU-15. The parameters for the latter scenario are identified by the EU-15 member states which we have included as sending countries in our sample. Hence, the free movement scenario is based on the assumption that the migration behaviour is similar in the NMS compared to the EU-15 countries for a given set of explanatory variables, which need not necessarily be the case.

While we provide a migration projection from the the individual NMS countries into the entire EU-15, we are not able to provide a projection for the regional distribution of migrants from the NMS across the individual EU-15 member states. The reason for this is simple: Counterfactual evidence for a regional distribution of migrants across the EU-15 which is not distorted by immigration restrictions does not exist. Hence, there is no historical evidence on which we can base such a projection.

Needless to say, all projections provided here rely on a number of strong assumptions and caveats. All findings therefore provide no more than a clue to the actual magnitudes involved and should be interpreted with care. In the remainder of this section we first outline the theoretical foundations of the model employed here (4.3.1) and our identification strategy (4.3.2) after which we present the results of the estimates (4.3.3) and the migration scenarios (4.3.4). In a final section we provide some reasoning about the possible consequences of the financial crisis on the migration potential.

4.3.1 Outline of the model

The standard macro migration model in the empirical literature is based on the assumption of a representative agent, who compares utility differences across different locations. As a consequence, these models presume that a long-run equilibrium relationship between migration flows and the explanatory variables emerges. In contrast, we follow here Brücker and Schröder (2006) in assuming that individuals differ with regard to their preferences.

Consider the following model of temporary migration. Individuals have the choice to stay at home or to move for a certain period of their life time (or their entire life) to another country. Individuals choose the length of the stay in the foreign country such that they maximise utility over their life time. The utility of individuals depends on their income in the respective locations, but also on non-monetary factors such as social relations, cultural links etc. At a given difference in the net present value of earnings, the time spend abroad depends on the weight individuals assign to monetary earnings and to the

non-pecuniary factors relevant for their utility in the respective locations (see Djajic and Milbourne, 1986; Dustmann and Kirchkamp, 2002; for similar models). Under the assumption that these preferences are not uniform across individuals, an equilibrium relationship between migration stocks and the difference in income levels between the host and the home country emerges. At this equilibrium, the gross emigration rate and the gross return migration rate are equal, such that net migration ceases (Brücker and Schröder, 2006).

More specifically, the long-run macro migration function is specified in the following form:

$$mst_{fit} = a_0 + a_1 \ln\left(\frac{w_{ft}}{w_{it}}\right) + a_2 \ln\left(e_{ft}\right) + a_3 \ln\left(e_{it}\right) + \varepsilon_{fit}, \qquad (4.1)$$

where mst_{fit} denotes the share of migrants residing in destination country f in the population from sending country i, w_{ft} and w_{it} the wage rate in the foreign and the sending country, and e_{ft} and e_{jt} the employment rate in the respective countries, and ε_{fit} the disturbance term.

The variables of the model are derived from the human capital theories of migration (Sjaastadt, 1961). The utility of individuals is inter alia determined by expectations on income levels in the respective locations. Utility is concave in the income differential since other, non-pecuniary arguments enter the utility function as outlined above. Expectations on income levels are conditioned by employment opportunities. Individuals are risk-averse, but uncertainty focuses on employment opportunities. Hence, it is expected that the coefficient for the employment rate in the receiving country is larger than the coefficient for the employment rate in the home country (Hatton, 1995). If capital markets are not perfect, liquidity constraints affect migration decisions. Consequently, for a given income difference between the host and the home country, the income level in the source country is expected to have a positive impact on migration stocks (Faini and Venturini, 1995; Faini and Daveri, 1999).

The dynamic model is specified here in form of a simple partial adjustment mechanism, i.e. as

$$mst_{fit} = \beta_0 + \beta_1 \ln\left(\frac{w_{ft}}{w_{it}}\right) + \beta_2 \ln\left(e_{ft}\right) + \beta_3 \ln\left(e_{it}\right) + \gamma\, mst_{fi,t-1} + \nu_{fit}, \qquad (4.2)$$

where the coefficient $\gamma < 1$ captures the dynamic adjustment of the model. The restriction that $\gamma < 1$ is needed for the dynamic stability of the model. Note that this does not rule out that networks of previous migrants alleviate migration costs and facilitate further migration. In contrast, we follow here the literature that migration networks or migration chains reduce migration costs (Bauer et al., 2002a; 2002b; Massey et al., 1984; Massey and Espana, 1987). However, since the preference for amenities in the home country tends to increase for the marginal individual the higher the share of the population is that

already lives abroad, the declining costs for migration resulting from networks are eventually offset by the low preferences to move abroad of the remaining population.

For a formal derivation of the model see Brücker and Schröder (2006). Of course, the specific functional form of the model depends on the underlying assumptions regarding the utility function. The model may thus be specified both in double-log or semi-log form (see e.g. Hatton, 1995, for a discussion).[18]

4.3.2 Identifying the impact of Eastern enlargement

The theoretical framework outlined in the previous section applies to the two country case. In technical terms, the model relies on the assumption of the irrelevance of independent alternatives. However, actual migration decisions are optimisation decisions across space, i.e. the probability that an individual moves from home country *i* to a specific destination *f* depends not only on the utility which is obtained in these two locations, but also from the utility which an individual receives in an alternative destination *f'*. If this is the case, i.e. if relevant alternatives are ignored, the estimates of the parameters are biased. Hence, a complete model has to consider all possible migration choices, which is hardly possible in an empirically meaningful setting. Unfortunately, in case of the EU's Eastern enlargement, the institutional conditions in alternative destinations have turned out to be quite relevant as the diversion of migration flows away from Germany and Austria towards the UK and Ireland has demonstrated.

Thus, we employ here another approach than in the previous literature. Instead of estimating the model in equation (4.2) for bilateral country pairs, we estimate the migration from a number of destinations into the entire EU-15 assuming that the choice to move into the EU-15 is independent from other possible destinations. Since the overwhelming share of the migrants from the NMS and the other countries included in the sample move to the EU-15, ignoring other destinations does not seem to be too restrictive.

Although income levels and employment opportunities across the individual EU countries are relatively homogeneous, there still exist some differences which might be hidden if we average all variables of the model across the destination countries in the EU-15. We have therefore weighted all earnings and employment variables by the share of the respective country in the migrants from a specific sending country in the EU-15 in order to capture the relevant values for the explanatory variables. We expect that this increases the explanatory power of the model.[19]

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[18] The semi-log form employed here provides a better forecasting performance than a double-log specification.

[19] The migration shares are of course endogenous which may bias the results. We have therefore used both the average values of the variables in the EU-15 and lagged values of the explanatory variables as instruments which did not change the results significantly.

The second problem is the identification of the impact of the remaining immigration restrictions. Since a free movement counterfactual does not exist for the NMS, we decided to include in our sample three groups of sending countries: The member states from the EU-15, for which the free movement of workers was granted for the entire or a part of the sample period, the NMS-8, for which the transitional arrangements apply since 2004, and the NMS-2, for which no transitional arrangements apply during the sample period, but bilateral agreements which have facilitated migration. We assume that immigration restrictions affect both the absolute terms and the slope parameters of the models. In general form we can then write the long-run migration function under consideration of the immigration restrictions as

$$mst_{it} = \sum_j \beta_j \, z_{jit} + \sum_k \gamma_k \, x_{kit} + \sum_j \sum_k \eta_{jk} \, z_{jit} x_{nit} + \nu_{it} \qquad (4.3)$$

where z_{jit} denotes a dummy variable which captures the immigration restriction j, x_{kit} an explanatory variable such as the wage or the employment rate, β_j, γ_k and η_{jk} the respective coefficients.

The error term is specified here as one-way error component model, i.e. as

$$\nu_{it} = \mu_i + \varepsilon_{it}, \qquad (4.4)$$

where μ_i is a country specific fixed effect which captures all time-invariant variables such as geographical distance, language, and cultural proximity migration decisions, and ε_{it} is white noise.

Under the assumption that the slope parameters are uniform across countries for a given institutional regime, we can use the estimated parameters of the model to identify how a change in institutional conditions affects migration. As an example, if the NMS respond similarly as the other EU member states to the explanatory variables such as the income differential and the employment rate, we can use the estimated parameters γ_k for the identification of the potential effects of free movement. However, it is worthwhile noting that countries might be heterogeneous, i.e. that the migration behaviour of the NMS may differ in one way or another from that of the EU-15 member states. The assumption of homogenous slope parameters is, however, needed for the identification of the effects of different institutional conditions.

In the specification of the model we consider the following institutional regimes:

- transitional arrangements for the NMS-8 between 2004 and 2007 and for the NMS-2 in 2007;
- bilateral (guestworker) agreements between individual EU-15 and the NMS-2 which were in place since the end of the 1990s;

- restricted restricted immigration, which holds for third countries such as Turkey, Morocco and Tunisia as well as for the NMS before the transitional arrangements or the bilateral agreements were in place;

- emigration restrictions which were in place for citizens from most NMS under the so-called 'iron curtain'.

For each regime we created a dummy variable, which was included as a level variable and as an interaction variable with all other explanatory variables of the model.

4.3.3 Data

Our sample consists of 28 sending countries during the period 1982 to 2007: The 'old' EU member states with the exception of Luxembourg (14), the NMS-8, the NMS-2 (Bulgaria and Romania), the (former) Yugoslavia, Morocco, Tunisia and Turkey. This sample thus covers - with the exception of the CIS countries - the entire European continent and some main sending countries at the European periphery. Moreover, the EU-15 is the main destination for migrants from these countries such that the assumption of the irrelevance of independent alternatives is not too demanding. For this reason we have excluded the CIS countries from the sample, since ethnic disentangling plays an important role there. Other destinations such as Russia are therefore important alternatives to the EU-15 in case of the CIS. Altogether, our sample covers more than 80 per cent of the immigrants residing in the EU-15. Due to data limitations, the sample is not balanced. Note that we can include only those sending countries for which (almost) the entire EU-15 report migration stocks.

The data on migration stocks are derived from the statistics of the EU-15 destination countries. Whenever possible, we have used the national population statistics, and the Eurostat Labour Force Survey in the remaining cases. However, in order to avoid structural breaks we rely only on one data source for a given destination. These data have then been aggregated to calculate the number of migrants in the EU-15. Since national data sources and nationality concepts differ across the EU some measurement error is unavoidable.

As an approximation for average earnings we have used the GDP per capita. We employed in our regressions both the GDP per capita at purchasing power parities and at current exchange rates. Since the forecasting performance of the income variable at current exchange rates has turned out to be better than the income measured at purchasing power parities, we decided to use the GDP per capita at current exchange rates in the regressions presented here. Note that particularly in the case of temporary migration the GDP at current exchange rates affects migration decisions, since a part of the income is consumed in home countries. Moreover, the measurement error for the GDP per capita at current exchange rates is likely to be smaller compared to the purchasing power parity estimates. The GDP per capita at current exchange rates has been taken from the World Development Indicators (World Bank, 2008), while the GDP

per capita at purchasing power parity has been derived from the series provided by Angus Maddison and the University of Groningen, which has been extrapolated from the Wold Bank series. For the calculation of the employment rates we used the standardised unemployment rates (ILO norm) provided by Eurostat which have been complemented by national statistical sources in some cases. The population figures have been taken from Eurostat. The destination country variables (i.e. the EU-15 variables) have been calculated by weighting the variables across the destinations with the immigrant shares as outlined above.

The institutional variables are defined as follows: $TRANS_{it}$ is a dummy variable which has a value of 1 if the transitional arrangements for the free movement of workers between the EU-15 and the NMS-8 are in place and of zero otherwise; $GUEST_{it}$ is a dummy variable which has a values of 1 if migration from Bulgaria and Romania is facilitated by bilateral guestworker agreements and of zero iotherwise[20]; $RESTRICT_{it}$ is a dummy variable which has a value of 1 if the country does not participate in the free movement of the EU and the EEA and if immigration is not facilitated either by transitional arrangements for the free movement or by guestworker agreements; $IRON_{it}$ is a dummy variable which has a value of 1 if emigration is effectively hindered by the iron curtain and of zero otherwise.

Several aspects are important to notice in this context. The institutional variables considered here are of course only rough approximations of the institutional conditions in the EU-15. As an example, we are not able to capture changes in the application of the transitional arrangements during the 2004-2007 period in individual EU member states, i.e. countries which have decided to open their labour markets during the sample period. This would require including a dummy variable and the respective interaction dummy variables for each year since 2004, which would in turn make any identification impossible. A similar argumant applies for changes of immigration policies of the EU-15 vis-à-vis Bulgaria and Romania during the phase which we characterise as influenced by bilateral migration agreements here. However, in our view these changes in the immigration policies during the 2004-2007 period did not affect migration flows from the NMS-8 and the NMS-2 much, such that our identification strategy captures the main changes in the immigration regimes of the EU-15 during the sample period. A more detailed consideration of the institutional regimes would require estimating the model as a panel of destination and sending countries, which would in turn run into the difficulties of employing the irrelevance of independent alternatives assumption. This would yield extremely biased results if migration in one EU-15 country is affected in one way or

[20] This holds for Bulgaria and Romania in the years from 1998 until the end of the sample period. The traditional source countries of guestworker recruitment in the EU such as Spain, Portugal, and Turkey have not been subject of those agreements during the sample period. We did not include a transitional arrangement dummy for the one observation in 2007, since (i) the immigration conditions did not change in the EU-15 for Bulgaria and Romania after 2007 with the exception of Sweden and Finland which are no main destinations for the NMS-2, and (ii) one year is not sufficient to identify this variable properly,

another by the immigration policies of other EU-15 countries, which is certainly the case in the context of the EU's Eastern enlargement in our view.

A detailed description of the data set and the descriptive statistics is available from the authors upon request.

4.3.4 Estimation results

The estimation results are displayed in Table 4.10. We have estimated four specifications of the model here. First, we estimated a simple fixed effects model which considers only the income difference between the EU-15 and the sending country and the immigration restrictions – including the interaction terms between the immigration restrictions and the income differential. Second, we employed a fixed effects model which considers in addition the employment rates in the EU-15 and the sending countries. As can be seen in the regression diagnostics, the explanatory power of the second model is higher and the forecasting error substantially lower. The forecasting error has been calculated for the ten NMS in the year 2007 only, since we are interested in the predictive power of the model for the NMS at the end of the sample period. Third, we estimated this model also with Feasible GLS and cross-sectional weights allowing for heteroscedasticity in the disturbances. Testing this model against the second specification suggests that heteroscedasticity is present. Moreover, the predictive power of the model is higher compared to the second model. Finally, we estimated the same model allowing furthermore for serial correlation in the error terms since our specification tests suggest that the disturbances are indeed serially correlated. The forecasting error declines however only marginally in this specification compared to the third one. The last model is our preferred specification which we use for the calculation of the forecasts.[21]

[21] The specification tests are available from the authors upon request.

Table 4.10 Regression results

	Model (1)		Model (2)		Model (3)		Model (4)	
	coefficient	*t*-statistics	coefficient	*t*-statistics	coefficient	*t*-statistics	coefficient	*t*-statistics
ln ($mst_{i,t-1}$)	0.963 ***	48.92	0.957 ***	44.12	0.956 ***	46.4	0.960 ***	51.12
ln ($y_{eu,t-1}/y_{i,t-1}$)	0.002 *	1.64	0.002 *	1.71	0.003 *	1.88	0.003 ***	2.67
ln ($e_{eu,t-1}$)			0.014	1.17	0.013	1.23	0.011	1.17
ln ($e_{i,t-1}$)			-0.004	-0.56	-0.004	-0.62	-0.005	-0.83
$TRANS_{it}$ ×ln ($y_{eu,t-1}/y_{i,t-1}$)	-0.002 *	-1.65	0.001	0.28	0.001	0.31	0.001	0.47
$TRANS_{it}$ ×ln ($e_{eu,t-1}$)			0.088 **	2.17	0.087 **	2.27	0.082 **	2.51
$TRANS_{it}$ ×ln ($e_{i,t-1}$)			-0.020	-1.21	-0.020	-1.24	-0.016	-1.25
$GUEST_{it}$ ×ln ($y_{eu,t-1}/y_{i,t-1}$)	-0.002	-1.58	-0.007 *	-1.66	-0.007 *	-1.67	-0.004	-0.79
$GUEST_{it}$ ×ln ($e_{eu,t-1}$)			-0.142	-1.47	-0.143	-1.47	-0.037	-0.32
$GUEST_{it}$ ×ln ($e_{i,t-1}$)			0.013	0.72	0.013	0.72	-0.003	-0.11
$RESTR_{it}$ ×ln ($y_{eu,t-1}/y_{i,t-1}$)	-0.004 ***	-3.15	-0.003 **	-2.4	-0.003 **	-2.58	-0.003 ***	-3.00
$RESTR_{it}$ ×ln ($e_{eu,t-1}$)			0.011	0.88	0.011	0.9	0.007	0.65
$RESTR_{it}$ ×ln ($e_{i,t-1}$)			0.002	0.22	0.001	0.18	0.003	0.46
$IRON_{it}$ ×ln ($y_{eu,t-1}/y_{i,t-1}$)	-0.001	-0.8	-0.006 *	-1.94	-0.006 *	-1.94	-0.002	-0.63
$IRON_{it}$ ×ln ($e_{eu,t-1}$)			-0.048	-0.36	-0.046	-0.36	-0.039	-0.33
$IRON_{it}$ ×ln ($e_{i,t-1}$)			-3.582	-0.46	-3.689	-0.48	-0.341	-0.05
$TRANS_{it}$	0.001	1.12	0.003 *	1.85	0.003 *	1.91	0.002 *	1.89
$GUEST_{it}$	0.004 *	1.85	0.004 **	2.01	0.004 **	1.98	0.002	1.13
$RESTR_{it}$	0.001	1.38	0.002 *	1.71	0.002 *	1.74	0.001	1.50
$IRON_{it}$	-0.001	-0.45	-0.003	-1.50	-0.003	-1.52	-0.002 *	-0.92
WAR_{it}	0.007 ***	5.02	0.008 ***	5.03	0.008 ***	5.08	0.006 ***	3.09
obs.	552		552		529		529	
Wald $\chi(51)^2$ statistics	64,491 ***		65,651 ***		74,379 ***		109,977 ***	
R^2	0.87		0.88		--		--	
RMSPE 2007	0.101		0.015		0.014		0.013	

The dependent variable is ln (mst_{it}). -- ***, **, * denote the significance at the 1-, 5- and 10 per cent level, respectively.-- All models include country dummy variables.-- Model (1) and model (2) are estimated by LSDV. Model (3) is estimated by weighted Feasible GLS using as a weight the average GDP per capita level of the sending country during the sample period. Model (4) is estimated by weighted Feasible GLS allowing for panel specific first-order correlation.

The choice of these specifications is based on the findings of previous research. Brücker and Siliverstovs (2006a; 2006b) have tested the forecasting performance of a large number of possible estimators, including pooled OLS models, random effects models, various GMM models and more sophisticated heterogeneous estimators. They find that standard fixed effects estimators as employed here outperform all other estimators. In particular, the forecasting performance of heterogeneous estimation strategies which impose fewer restrictions on the slope parameters has turned out to be relatively poor. The same holds true for GMM estimators attempting to address the simultaneous equation bias (the so-called 'Nickell'-bias) in dynamic fixed effects models with a limited time dimension.

The qualitative results confirm largely our theoretical expectations. The income difference between the EU-15 and the sending countries has in all four specifcations the expected positive sign and appears significant. The employment rate in the EU-15 has the expected positive sign, while the employment rates in the sending countries have the expected negative signs, although both variables do not appear as significant.

The interaction dummy variables can only be interpreted together with the signs and the size of the level dummy variables. As a consequence, the impact of the income gap as well as the impact of the employment variables are either reduced or increase with the respective dummy variables. As expected, the civil wars in the former Yugoslavia have exerted a strong positive impact on migration from the affected countries into the EU-15.

4.3.5 Forecast results

The coefficients of model (4) in Table 4.6 are used for the simulation of future migration movements from the NMS into the EU-15. More specifically, we have calculated two scenarios: The first scenario assumes that the status quo regarding the institutional conditions continues. This means that (i) the transitional arrangements for the NMS-8 are employed in the same way as during the 2004-2007 period, and (ii) the immigration conditions for Bulgaria and Romania remain the same as under the bilateral agreements which are in place since the end of the 1990s. The second scenario assumes that rules of the free movement of workers is introduced in the entire EU, such that the values of all dummy variables and interaction terms which capture the remaining immigration restrictions for the NMS are assumed to be zero.

Note that the free movement scenario is identified by assuming that migrants from EU-15 countries and from the NMS behave similarly. Under this assumption we can use the coefficients for the slope parameters from EU-15 countries for forecasting the migration potential from the NMS under free movement. However, if the migration behaviour from the NMS deviates however from that in the EU-15 countries, the outcome under free movement would be different.

There is a second caveat which is worthwile to mention. Due to the brief period since enlargement, we had only three observations to identify the parameters for the coeffieicents under the transitional arrangements. This time period coincides with an economic boost in main destinations such as Ireland, Spain and the UK. Although the model controls for income levels, the high growth rates in important destination countries may have created additional immigration opportunities compared to a situation with normal economic growth rates, such that the coefficients obtained under the first three years under the transitional arrangements might overstate the migration potential. Keeping these caveats in mind is important for the interpretation of our findings.

The results of the scenarios are displayed in Table 4.11 and Table 4.12. As a rule of thumb, our projections indicate that the present stock of migrants residing in the EU-15 stood in 2007 at one half of the potential which might be realised by the year 2020 if the current migration conditions prevail and at about two-fifths if free movement is introduced in the entire EU-15. During the same period of time, the net growth of the foreign population from the NMS-8 and the NMS-2 in the EU-15 will have declined from about 430,000 persons p.a. to 200,000 persons p.a. under the current institutional conditions and from 515,000 persons p.a. to 235,000 persons p.a. under free movement.

More specifically, the model predicts that the stock of migrants from the NMS-8 could increase from about 1.9 million in 2007 to 3.8 million in 2020 if the present restrictions are maintained, while it could increase to 4.4 million under free movement in the same period of time. This corresponds to 5.2 per cent of population of the sending countries (1.0 per cent of the population of the EU-15) under the current immigration conditions and to 6.1 per cent of the population of the sending countries (1.13 per cent of the population of the EU-15) under free movement. Thus, our scenario predicts that

removing the immigration restrictions in important destinations such as Germany and Austria would trigger an additional migration of about 600,000 persons in the long-run if migrants from the NMS-8 behave in the same way as other migrants from the EU-15. However, the model does not make any predication on the allocation of migrants across different destinations in the EU-15.

Concerning migrants from Bulgaria and Romania, their stock could increase from about 1.8 million persons in 2007 to 3.9 million in 2020 under the present immigration restrictions, while it could increase to 4.0 million when the free movement is introduced. This corresponds to 13.4 per cent of the population of the sending countries (1.0 per cent of the population of the EU-15) under the current institutional conditions, and to almost 14 per cent of the population of the sending countries (1.1 per cent of the population of the EU-15) when the free movement is introduced. Note again that the free movement scenario is derived from the assumption that migrants from Bulgaria and Romania behave in the same way as other EU-15 migrants. Given that income levels in Bulgaria and Romania deviate substantially from the sample mean, the forecasts for these two countries are less reliable than those for the NMS. Thus, actual migration figures under free movement may deviate from the scenario presented here and the actual difference between the restricted and the free movement scenario might be larger.

Table 4.11 Projection of migration stocks, 2007-2020[22]

	CZ	EE	HU	LT	LV	PL	SK	SI	BG	RO	NMS-8	NMS-2	NMS-10
	forecast under status quo conditions (nationals residing in the EU-15 in persons)												
2006	79,094	32,020	106,618	102,455	40,826	1,039,283	109,336	30,265	246,187	1,045,873	1,539,898	1,292,060	2,831,958
2007	105,918	33,998	119,465	111,631	46,554	1,280,756	120,728	32,347	272,521	1,550,240	1,851,395	1,822,761	3,674,157
2008	119,002	36,861	136,072	127,552	55,159	1,437,604	146,399	30,036	293,502	1,722,887	2,088,685	2,016,389	4,105,074
2009	130,731	39,479	151,031	142,414	63,136	1,583,665	170,450	27,713	313,881	1,889,149	2,308,619	2,203,030	4,511,649
2010	141,177	41,866	164,429	156,270	70,515	1,719,462	192,956	25,378	333,679	2,049,272	2,512,052	2,382,951	4,895,003
2011	150,408	44,033	176,346	169,166	77,326	1,845,495	213,991	23,035	352,913	2,203,493	2,699,799	2,556,406	5,256,206
2012	158,487	45,992	186,861	181,150	83,597	1,962,242	233,626	20,686	371,602	2,352,038	2,872,641	2,723,640	5,596,281
2013	165,477	47,753	196,049	192,267	89,355	2,070,160	251,928	18,333	389,764	2,495,124	3,031,321	2,884,888	5,916,209
2014	171,436	49,326	203,981	202,558	94,625	2,169,687	268,962	15,979	407,415	2,632,962	3,176,555	3,040,377	6,216,931
2015	176,422	50,722	210,725	212,065	99,434	2,261,240	284,789	13,625	424,571	2,765,753	3,309,021	3,190,324	6,499,345
2016	180,487	51,950	216,346	220,826	103,803	2,345,219	299,468	11,273	441,248	2,893,689	3,429,372	3,334,937	6,764,308
2017	183,683	53,018	220,907	228,879	107,756	2,422,005	313,055	8,925	457,460	3,016,957	3,538,228	3,474,417	7,012,645
2018	186,059	53,936	224,466	236,259	111,315	2,491,965	325,604	6,583	473,224	3,135,735	3,636,186	3,608,959	7,245,145
2019	187,662	54,711	227,079	243,000	114,499	2,555,446	337,167	4,248	488,552	3,250,194	3,723,812	3,738,746	7,462,558
2020	188,536	55,352	228,802	249,135	117,328	2,612,781	347,793	1,921	503,459	3,360,499	3,801,648	3,863,958	7,665,605
	forecast under free movements of workers (nationals residing in the EU-15 in persons)												
2006	79,094	32,020	106,618	102,455	40,826	1,039,283	109,336	30,265	246,187	1,045,873	1,539,898	1,292,060	2,831,958
2007	105,918	33,998	119,465	111,631	46,554	1,280,756	120,728	32,347	272,521	1,550,240	1,851,395	1,822,761	3,674,157
2008	135,413	39,185	153,674	129,543	56,627	1,437,886	143,097	36,031	310,851	1,747,009	2,131,456	2,057,860	4,189,316
2009	163,082	44,064	185,751	146,413	66,077	1,585,241	164,112	39,484	346,668	1,933,606	2,394,224	2,280,274	4,674,498
2010	189,012	48,649	215,797	162,287	74,934	1,723,282	183,837	42,718	380,092	2,110,484	2,640,516	2,490,576	5,131,092
2011	213,284	52,954	243,907	177,214	83,225	1,852,451	202,332	45,743	411,240	2,278,080	2,871,110	2,689,320	5,560,430
2012	235,978	56,993	270,174	191,236	90,977	1,973,172	219,656	48,569	440,221	2,436,809	3,086,755	2,877,030	5,963,785
2013	257,170	60,777	294,687	204,397	98,216	2,085,848	235,864	51,205	467,139	2,587,071	3,288,163	3,054,210	6,342,374
2014	276,930	64,318	317,530	216,736	104,967	2,190,867	251,010	53,661	492,097	2,729,246	3,476,019	3,221,343	6,697,362
2015	295,329	67,629	338,783	228,294	111,253	2,288,598	265,144	55,945	515,191	2,863,703	3,650,974	3,378,894	7,029,868
2016	312,432	70,721	358,524	239,106	117,096	2,379,396	278,314	58,066	536,511	2,990,789	3,813,655	3,527,300	7,340,955
2017	328,303	73,603	376,827	249,208	122,519	2,463,599	290,569	60,031	556,147	3,110,842	3,964,659	3,666,989	7,631,648
2018	343,002	76,286	393,762	258,635	127,542	2,541,530	301,951	61,849	574,183	3,224,181	4,104,557	3,798,364	7,902,921
2019	356,586	78,780	409,396	267,419	132,185	2,613,500	312,504	63,526	590,699	3,331,115	4,233,896	3,921,814	8,155,710
2020	369,111	81,094	423,796	275,591	136,466	2,679,804	322,269	65,070	605,772	3,431,938	4,353,200	4,037,710	8,390,910

Own Projection. See text for assumptions.

The annual net immigration or, more precisely, the net growth of the number of foreign residents from the NMS-8 will decline from about 237,000 persons at the beginning of the projection period to 78,000 in 2020 under the transitional arrangements. In case of

[22] The start values of the migration stocks deviate slightly from those provided in Chapter 4.1 since the data sources on which the estimates are based differ for consistency reasons in some countries from those presented in Chapter 4.1.

introducing the free movement, this figure will increase to about 280,000 persons p.a. at the beginning of the projection period. The net increase of the foreign residents from the NMS-2 is estimated to be about 194,000 persons at the beginning of the projection period and at 125,000 persons at the end under the current immigration restrictions. An introduction of the free movement will increase this figure to 235,000 persons p.a. at the beginning of the projection period. Compared to the average net inflows during the first three years under the transitional arrangements our model predicts that the net inflows will slightly decline, which can be already observed in 2008 e.g. in the UK.

Table 4.12 Projection of the net growth of migration stocks, 2008–2020

	CZ	EE	HU	LT	LV	PL	SK	SI	BG	RO	NMS-8	NMS-2	NMS-10
						forecast under status quo conditions (nationals residing in the EU-15 in persons)							
2007	26,824	1,978	12,846	9,175	5,727	241,474	11,392	2,081	26,334	504,367	311,498	530,701	842,199
2008	13,084	2,863	16,607	15,921	8,605	156,848	25,671	-2,310	20,981	172,647	237,289	193,627	430,917
2009	11,729	2,619	14,959	14,863	7,977	146,061	24,050	-2,324	20,379	166,262	219,935	186,641	406,576
2010	10,446	2,387	13,397	13,855	7,379	135,797	22,506	-2,335	19,798	160,123	203,433	179,921	383,354
2011	9,230	2,167	11,917	12,896	6,811	126,033	21,035	-2,343	19,234	154,221	187,747	173,455	361,202
2012	8,079	1,959	10,515	11,984	6,271	116,747	19,635	-2,349	18,689	148,545	172,841	167,234	340,075
2013	6,990	1,761	9,188	11,116	5,758	107,918	18,302	-2,353	18,162	143,087	158,681	161,248	319,929
2014	5,960	1,573	7,932	10,291	5,271	99,527	17,034	-2,354	17,651	137,838	145,233	155,489	300,722
2015	4,985	1,396	6,744	9,507	4,808	91,553	15,827	-2,354	17,156	132,791	132,466	149,947	282,413
2016	4,065	1,228	5,621	8,761	4,369	83,979	14,679	-2,352	16,677	127,937	120,350	144,613	264,964
2017	3,196	1,068	4,560	8,053	3,953	76,787	13,587	-2,348	16,213	123,268	108,857	139,481	248,338
2018	2,376	918	3,559	7,380	3,558	69,959	12,549	-2,342	15,764	118,778	97,957	134,541	232,499
2019	1,603	775	2,614	6,741	3,184	63,481	11,563	-2,335	15,328	114,459	87,626	129,787	217,413
2020	874	641	1,723	6,135	2,829	57,336	10,626	-2,327	14,906	110,305	77,837	125,212	203,048
						forecast under free movements of workers (nationals residing in the EU-15 in persons)							
2007	26,824	1,978	12,846	9,175	5,727	241,474	11,392	2,081	26,334	504,367	311,498	530,701	842,199
2008	29,495	5,187	34,210	17,912	10,073	157,130	22,369	3,684	38,329	196,769	280,060	235,098	515,158
2009	27,669	4,879	32,077	16,869	9,450	147,354	21,015	3,454	35,817	186,597	262,768	222,414	485,182
2010	25,930	4,585	300,455	15,875	8,857	138,041	19,725	3,234	33,425	176,879	516,701	210,303	727,004
2011	24,272	4,305	28,110	14,926	8,291	129,169	18,495	3,025	31,148	167,596	230,595	198,743	429,338
2012	22,694	4,038	26,267	14,022	7,752	120,721	17,324	2,826	28,981	158,729	215,645	187,710	403,354
2013	21,191	3,784	24,513	13,161	7,239	112,676	16,208	2,636	26,919	150,262	201,408	177,180	378,589
2014	19,761	3,542	22,843	12,340	6,751	105,019	15,146	2,456	24,958	142,176	187,855	167,134	354,989
2015	18,399	3,311	21,253	11,557	6,286	97,732	14,134	2,284	23,093	134,456	174,956	157,550	332,505
2016	17,103	3,091	19,741	10,812	5,844	90,798	13,171	2,121	21,321	127,087	162,681	148,407	311,088
2017	15,871	2,882	18,303	10,103	5,423	84,203	12,254	1,965	19,636	120,053	151,004	139,689	290,692
2018	14,699	2,683	16,935	9,427	5,023	77,932	11,382	1,818	18,036	113,340	139,898	131,375	271,274
2019	13,584	2,494	15,635	8,784	4,642	71,970	10,553	1,677	16,516	106,934	129,339	123,450	252,789
2020	12,526	2,314	14,399	8,172	4,281	66,304	9,765	1,544	15,073	100,823	119,304	115,895	235,199

Own Projection. See text for assumptions.

The forecast intervals which we have derived by a bootstrapping method are pretty large: In Poland, the lower bound of the 95-per cent interval stands at about two million persons, while the upper bound predicts about 3.2 million persons in 2020 (Figure 4.1). Similarily, in Romania the lower forecasting bound amounts to about 3 million persons, while the upper bound estimates the migration potential in 2020 at abour 3.7 million persons (Figure 4.2). Overall, we expect that true the migration potential from the NMS could be anywhere around one-third above or below the point forecast of the migration stock in 2020.

Figure 4.1 Forecast intervals for Poland, 2008-2020

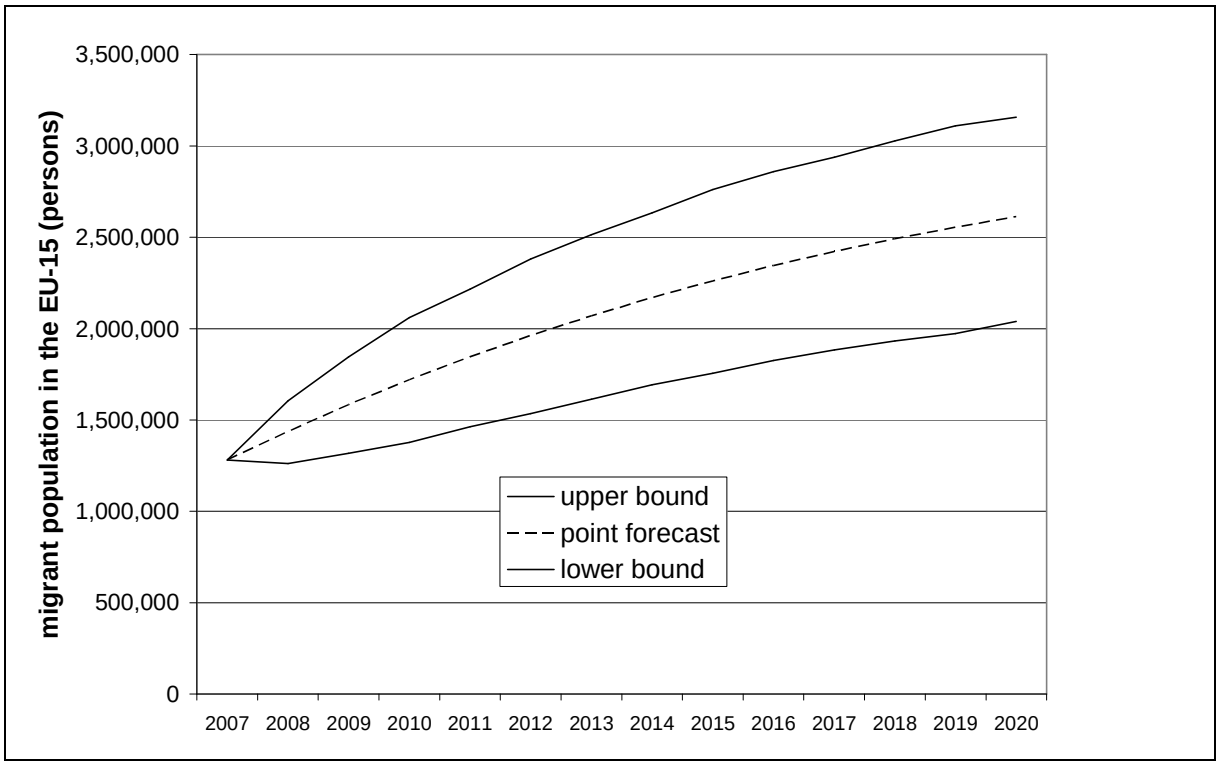
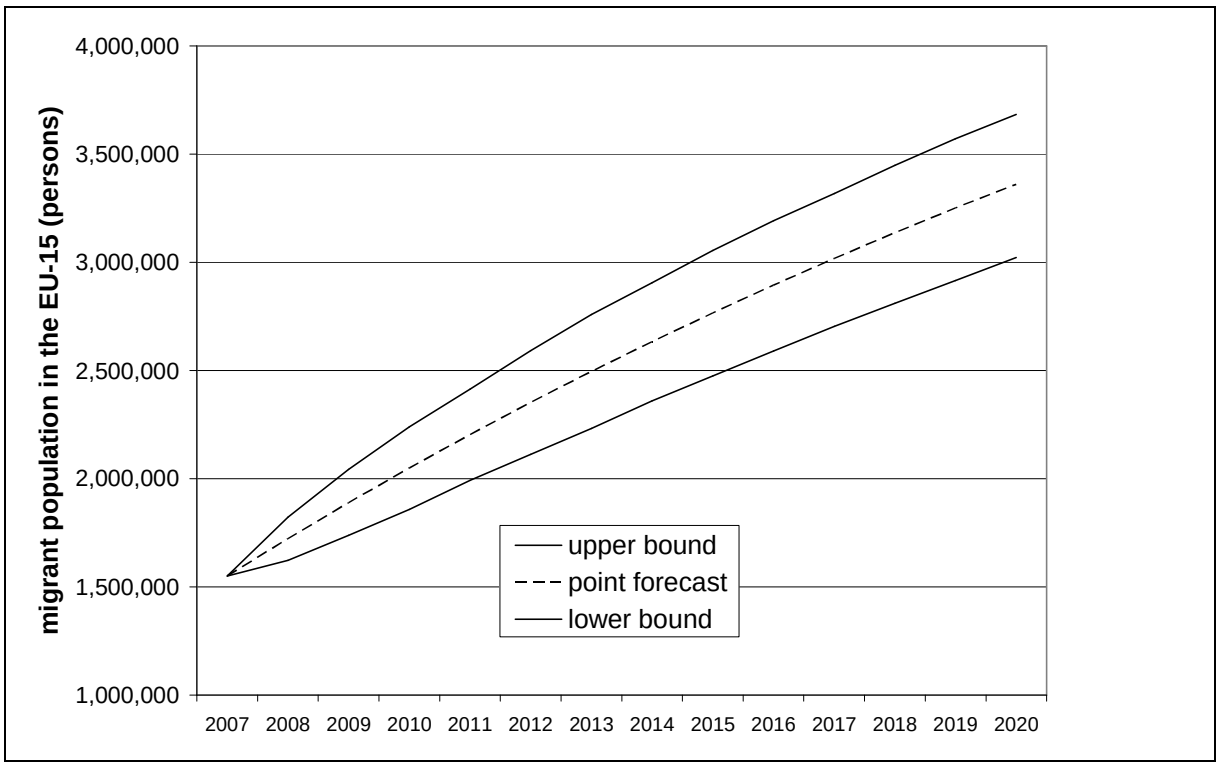


Figure 4.2 Forecast intervals for Romania, 2008-2020



A number of caveats apply to these estimates: First, the estimates under the current institutional conditions are based on only three annual observations, which might be

insufficient to identify the parameters of the model properly. Second, the free movement scenario assumes that the slope parameters for the explanatory variables such as the income difference and the employment rates are the same under free movement for the EU-15 sending countries and the NMS. This need, however, not to be the case. Third, particularly the migration data used for the estimates are subject to measurement error which may bias the results in one way or another. Finally, the projections presented here are based on estimates of long-run equilibrium relationships between the migration stocks and the explanatory variables and the speed of adjustment to these long-run relationships. The estimates do therefore not capture short-term fluctuations in the business cycle appropriately, such that short-term migration movements may deviate substantially. This is particularly relevant in the context of the current financial crisis (see below).

Thus, the projections presented here provide no more than a clue to the possible development of future migration movements from the NMS and should therefore be interpreted with great care.

4.3.6 The impact of the financial crisis

The current financial crisis may reduce the short-term migration substantially compared to the projections presented in Table 4.11 and Table 4.12. It is an open question at present, whether the NMS or the EU-15 will be more than proportionally affected by the financial crisis. According to the recent forecasts, important sending countries such as Poland and Romania are less affected by the decline in GDP growth than the EU-15 countries, while others such as Hungary and the Baltic countries are more than proportionally affected. Nevertheless, since Poland and Romania alone account for abour 80 per cent of the migrant population, these developments would reduce the short-term migration potential.

More importantly, it is worthwhile noting that employment opportunities in the receiving and the sending countries do not affect the scale of migration in a symmetric way. Migration is largely driven by the opportunity to move, which in turn depends on the opportunity to find employment in the receiving countries. If employment opportunities in the receiving countries tend to decline, net immigration contracts irrespective of migration conditions in the sending countries. In the two main destinations of migrants from the NMS in the EU-15 in absolute terms, the United Kingdom and Spain, unemployment has already started to increase substantially in the course of the current financial crisis. Moreover, the prospects are bleak for 2009 according the forecasts of the national governments and the European Commission. As a consequence, immigration from the NMS will decline in these destinations, while return migration will tend to increase. Net migration figures might thus decline or even become negative in the course of the crisis, although the exact impact is uncertain at the present stage. Altogether, labour mobility between the EU-15 and the NMS will act as a buffer for natives in the receiving countries in the current crisis, while it might further increase unemployment in the sending countries if return migration becomes large.

5 The impact on labour markets and the macroeconomy

This chapter examines the impact of labour mobility on wages, (un-)employment, GDP and other macroeconomic variables in the context of the EU Eastern enlargement. Our analysis addresses both the destination and the sending country perspective. We distinguish two main labour supply shocks here: The migration from the NMS-8 and from Bulgaria and Romania into the EU-15. The candidate countries, which may accede during the next decade, are not considered, since Eastern enlargement has only modestly affected migration from there, if at all.

The study is based on two macroeconomic models which address different aspects of the macroeconomic implications of migration. The first model employs a general equilibrium framework for analysing the effects of migration in a setting with imperfect labour markets. The model uses a nested production function which groups the labour force by education, work experience and national origin. This enables us to examine the wage and employment effects of migration on the different segments of the labour market. This model can be applied for both the analysis of the short-run and the long-run effects of labour mobility.

The second model also analyses the labour market effects of labour mobility on basis of a model with imperfect labour markets. In contrast to the first model, the impact of migration on different industries is modelled within a computable general equilibrium (CGE) framework. This enables us to assess not only the sectoral impact of migration, but also the links between labour mobility and international trade and capital mobility. While the first model covers the entire EU, the analysis based on the second model focuses on Germany, the UK, Poland, Hungary, Slovenia and Slovakia. This rather broad range of countries enables us to capture the different ways by which the sending and receiving countries in the enlarged EU are affected by labour mobility.

5.1 Theoretical background

In principle, international migration increases the productive use of human resources and, hence, global output. Many simulation models suggest that the gains from opening labour markets to international migration can easily dwarf potential gains from a further liberalization of international goods and capital markets (Hamilton and Whalley, 1984). This has also been demonstrated for labour migration within the European continent (Boeri and Brücker, 2005).

However, international migration does not only create winners. The standard textbook model of migration predicts that international labour mobility generates aggregate gains for natives in the receiving countries, while natives left behind in the sending countries tend to lose (e.g. Wong, 1995). Moreover, production factors in receiving countries which are net complements to migrant labour tend to win, while those which are net substitutes tend to lose. More specifically, labour is expected to lose at the destination. The converse applies to the sending countries.

One key assumption of the textbook model of migration is that labour markets clear. Relaxing this assumption yields different results (Boeri and Brücker, 2005; Levine, 1999). In case of rigid labour markets and unemployment, migrants can replace native workers in recipient countries. Hence, unemployment can increase, which may furthermore trigger higher welfare expenditures for both natives and migrants. As a consequence, natives in the receiving countries may lose, while those in the sending countries may gain. Considering labour market rigidities is particularly relevant in the context of this study, since many EU countries still suffer from high and persisting unemployment rates. The concern that migration from the new member states may increase unemployment is therefore one of the main arguments for the application of transitional arrangements for the free movement of workers. In our simulations we indeed find in the short-run rising unemployment and shrinking wages which are caused by wage rigidities.

However, labour migration may have very different effects in the different cells of the labour market. It may create additional labour demand for certain types of labour and reduce it for others. Depending on the wage flexibility in the different segments of the labour markets, it may therefore either increase or reduce aggregate unemployment. Moreover, depending on the elasticities of substitution between native and foreign labour, labour immigration may increase wages and employment opportunities of natives in the host countries, even if aggregate wages decline and the aggregate unemployment is increasing (see e.g. Ottaviano and Peri, 2006, for US evidence).

An important issue for an assessment of the migration impacts is the adjustment of other markets in the economy. The standard migration model is based on the assumption that capital stocks are fixed, which is hardly a realistic scenario if we consider that investors exploit profit opportunities. Indeed, it is one of the few empirically supported facts in economics that the capital-output ratio and, hence, the productivity adjusted capital intensity of production remains constant over time (Kaldor, 1961). Thus, capital stocks adjust in one way or another to labour supply shocks, which in turn implies that the aggregate impact of migration on wages is mitigated when capital adjusts in the long-run. We thus consider the adjustment of capital stocks here and examine empirically whether and to what extent capital stocks adjust even in the short-run.

International links via goods and capital markets can further reduce the impact of labour mobility on wages and unemployment in the receiving and sending countries. The standard models of trade theory suggest that the impact of labour mobility on factor prices and employment opportunities is mitigated if migration, trade and capital movements are substitutes (see Venables, 1999, for a discussion). Under the extreme assumption that international demand on the goods markets is perfectly elastic, international migration has no impact on wages and employment opportunities. Although this is empirically not very likely, trade and capital movements may contribute to reduce the migration impacts.

Against this background, the two types of models employed here may deliver slightly different results: The first model analyses the domestic adjustment of economies mainly via the labour market. It considers the elasticities of substitution and complementarities

in the different cells of the labour market in detail. Adjustments in other markets are only considered as long as they affect the capital-output ratio. This enables us, however, to capture the adjustment of capital stocks via domestic or international investment, which may be the most important channel of adjustment of the other markets. The second type of model goes beyond this since it considers also the adjustment of the sectoral structure of the economy via international trade and shifts in the structure of demand and production. We therefore expect that the short-term migration impact on both the receiving and the sending countries will be smaller in the second type of model.

5.2 A review of the literature

The impact of migration on wages and employment in general and in the context of the EU's Eastern enlargement has been addressed by numerous studies. We can distinguish three strands in the literature: The first strand of literature is based on econometric estimates which use the regional variance of the migration share for the identification of the wage and employment effects of immigration. The second approach uses the variance of the migration share across the education and experience cells of the labour market at the national level for identification. Finally, the third approach uses CGE or other macroeconomic models for the simulation of the labour market effects.

The spatial correlation approach has been widely applied in the US and European literature during the 1990s for an evaluation of the labour market effects of immigration. Both the wage and employment effects of migration are small and seem to cluster about zero (see Borjas, 2003; Friedberg and Hunt, 1995, for a discussion). Recent meta-analyses of this literature indicate that an increase in the labour force by 1 per cent reduces native wages by less than 0.1 per cent and increases the unemployment risk of natives by less than 0.1 percentage point (Longhi et al., 2005; 2006). A recent study based on this approach which examines the effects of migration in the context of EU enlargement in the UK finds that immigration from the NMS has a small positive impact on wages and a small negative impact on unemployment of natives (Lemos and Portes, 2008), supporting earlier findings by Dustmann et al. (2005) for the UK. Both effects are however insignificant.

The spatial correlation approach may yield spurious results if migrants are not randomly distributed across locations. Large parts of this literature therefore rely either on natural experiments or use instrumental variable or difference-in-difference estimators in addressing this endogeneity problem (see e.g. Dustmann and Glitz, 2005, for a discussion). It remains nevertheless controversial whether the wage and employment effects of immigration can be properly identified by the spatial correlation approach. Hence, another part of the empirical literature uses the variance of migrants across education and experience cells in the labour market at the national level for identification. In his seminal study, Borjas (2003) finds for the US that a 1 per cent increase of the labour force through immigration reduces native wages substantially by about 0.3 to 0.4 per cent. Similar results are obtained by Aydemir and Borjas (2006) for Canada and Mexico. In contrast, Ottaviano and Peri (2006) reconcile the findings of the

spatial correlation studies for the US. They estimate that the impact of immigration on native wages is almost neutral, while foreign workers tend to lose substantially. Similar results have been recently obtained for the UK by Manacorda et al. (2006) and for Germany by Brücker and Jahn (2008), D'Amuri et al. (2008), and Felbermayr et al. (2008), whereby the last study explicitly simulates the wage and employment effects of immigration in the context of the EU's Eastern enlargement. All these studies find that an increase of the foreign labour force by 1 per cent reduces native wages by less than 0.1 per cent and increases native unemployment risks by less than 0.1 percentage points.

The third strand of the literature addresses the macroeconomic impact of migration on basis of 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. A number of these studies have addressed the labour market effects of immigration in the context of the Eastern enlargement. The main focus of this literature is on the changing skill composition of the labour force through immigration. Assuming that the low-skilled and high-skilled labour force in Austria would increase by 10.5 and 2.1 per cent, respectively, Keuschnigg and Kohler (1999) estimate a 5 per cent decrease in wages for low-skilled workers. Heijdra et al. (2002) estimate the effect of migration from the NMS to Germany. They assume that migration from Eastern European countries to Germany would rise from 550,000 in 2008 to 2.5 million in 2030, with 35 per cent of the migrant population entering the labour market. 40 per cent of the migrants are assumed to be skilled and 60 per cent 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 per cent for an immigration rate of 1 per cent of the labour force, while the unemployment rate increases by 0.02–0.1 percentage points. In another study, Brücker (2007) demonstrates that if 4 per cent 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.

Altogether, this literature finds wage and employment effects of immigration which are somewhat larger than those found by the econometric literature. However, the still relatively modest negative effects of immigration on wages and unemployment of particularly low-skilled workers are outweighed by positive and strong effects which result from the integration of the NMS into the goods markets of the EU (e.g. Brown et al. 1995; Baldwin et al. 1997). Consequently most models predict that Eastern enlargement results in lower aggregate unemployment and higher wages in both the EU-15 and the NMS.

Not surprisingly, all CGE models predict that enlargement increases the GDP in the receiving countries and the total EU. In earlier studies, this effect was predicted to vary between 0.1 per cent and 0.5 per cent in the EU-15, and between 5 per cent and 18 per

cent 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 per cent gain in the income per capita if 3 per cent 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, while the opening-up of the UK has resulted in a higher GDP.

Most studies which address the macroeconomic effects of migration in the context of the EU Eastern enlargement employ a CGE framework. A notable exception is the recent study by Barrell et al. (2007). This study uses a large new Keynesian macroeconometric model to describe the absorption of a labour supply shock triggered by the EU Eastern enlargement. In contrast to the general equilibrium framework, these types of macroeconomic models are less rigorously founded on theoretical models but cover a huge variety of economic relations. Interestingly enough, the differences between the Barrell et al. (2007) study and the results reported from the CGE literature are quite small.[23]

5.3 Migration scenarios

The analysis of the impact of immigration on the destination and sending countries in the enlarged EU is carried out here in two steps. In the first step, we analyse the impact of the actual migration movements which took place under the current institutional and legal conditions during the years from 2004 to 2007 and contrast this with a counterfactual scenario of no EU enlargement. In the second step, we analyse on basis of the projections carried out in Chapter 4.3 the potential impact of future immigration under the assumptions that (i) the present immigration restrictions under the transitional arrangements for the free movement of worker continue and that (ii) the free movement is introduced in the entire EU. The purpose of these scenarios is to grasp the main changes in immigration policies which have been carried out in the context of the EU Eastern enlargement.

5.3.1 Transitional arrangements vs. no EU Eastern enlargement

In the first step we analyse the impact of the immigration shock which took place since EU enlargement from 2004 to 2007. As has been outlined in Chapter 4.1, the EU Eastern enlargement involved a distinct increase in migration from the NMS-8 and a diversion of migration flows away from Austria and Germany towards Ireland and the UK. In our

[23] Barell et al. (2007) find that immigration of 1 per cent of the population leads to a 1.1 per cent increase in GDP while Baas and Brücker (2008) report a 1 per cent increase in GDP.

counterfactual scenario we assume that the pre-enlargement conditions for migration between the NMS on the one hand and the EU-15 on the other hand prevail. This status quo scenario does not assume that no labour mobility takes place, but that both the overall scale and the regional distribution of immigration flows stay at their pre-enlargement levels. We thus base the immigration from 2004 to 2007 on an extrapolation of the average immigration during the 1999-2003 period in this counterfactual scenario. This scenario is contrasted by an EU Eastern enlargement scenario. In the EU Eastern enlargement scenario we have calculated the actual increase in the migration stocks between 2004 and 2007.[24] The difference between these two scenarios is treated here as the "EU enlargement effect", i.e. the migration effect which has been caused by the EU's Eastern enlargement. The figures of the two scenarios are displayed in Table 5.1. The foreign population from the NMS-8 in the EU-15 has increased from 874,000 in 2003 to 1.9 million persons in 2007 or by one million persons. According to our counterfactual scenario, the increase would have been a mere 199,000 persons without enlargement, which yields a migration effect of 837,000 persons which can be attributed to the EU's Eastern enlargement.

Immigration from Bulgaria and Romania has already accelerated before enlargement as a consequence of the immigration policies in Spain and Italy. The foreign population from Bulgaria and Romania in the EU-15 has grown between 2003 and 2007 from 694,000 to 1.9 million persons or by 1.2 million persons. We can not attribute this increase to the EU's Eastern enlargement since the NMS-2 joined the EU-15 at January 1, 2007. Therefore, we use a zero immigration scenario as a counterfactual to the actual increase from the population from Bulgaria and Romania in our later analysis. This measures, however, the impact of relaxed immigration conditions in the EU-15 for these two countries and not the EU Eastern enlargement effect.

[24] We have, in case of missing information in some countries, estimated the 2007 figures, which yield slightly higher results than the actual figures presented in Chapter 4.1.

Table 5.1 Migration stock for the NMS-8 and NMS-2, 2003-2007 scenario

	Foreign residents from NMS-8 in per cent of population				Foreign residents from NMS-2 in per cent of population	
	Benchmark	Counterfactual scenario	Enlargement scenario		Benchmark	Enlargement scenario
	2003	2007	2007		2003	2007
AT	0.75	0.81	1.12	AT	0.34	0.46
BE	0.16	0.22	0.41	BE	0.07	0.23
DE	0.52	0.60	0.68	DE	0.13	0.16
DK	0.18	0.21	0.41	DK	0.03	0.06
ES	0.11	0.20	0.31	ES	0.67	1.98
FI	0.30	0.37	0.46	FI	0.02	0.03
FR	0.06	0.05	0.06	FR	0.02	0.07
GR	0.16	0.20	0.19	GR	0.29	0.50
IE	0.86	1.52	4.47	IE	0.44	0.61
IT	0.10	0.13	0.20	IT	0.33	1.15
LU	0.36	0.58	1.15	LU	0.11	0.25
NL	0.08	0.11	0.23	NL	0.03	0.07
SE	0.24	0.22	0.47	SE	0.04	0.07
UK	0.21	0.27	1.05	UK	0.03	0.07
CZ	0.70	0.94	1.03	BG	2.04	3.97
EE	1.93	2.51	2.72	RO	2.47	7.16
HU	0.88	0.88	1.33			
LT	1.55	2.58	3.73			
LV	1.02	1.40	1.83			
PL	1.42	1.68	3.45			
SI	1.76	2.05	1.80			
SK	0.82	1.12	2.45			
EU-15[1)]	**0.24**	**0.29**	**0.52**	**EU-15[1)]**	**0.19**	**0.51**
NMS-8	**1.21**	**1.48**	**2.64**	**NMS-2**	**2.35**	**6.32**

1) Without Portugal.
Notes: The stock of foreign residents in 2003 is used as a benchmark. The counterfactual scenario assumes that immigration flows continue at their pre-enlargement levels, while the enlargment scenario refers to the actual figures observed in 2007.

Sources: Own calculations and estimates based on the figures from national population statistics and the European LFS.

The immigration influx varies widely across the EU-15 countries. The net inflow of residents from the NMS-8 which has been caused by EU enlargement, i.e. the difference between the Easten enlargement scenario and the counterfactual scenario without free movement, amounts to 3 per cent of the population in Ireland, 0.8 per cent in the UK and 0.6 per cent in Luxembourg compared to 0.2 per cent at the EU-15 average according to our scenario. The net inflow of residents from the NMS-2 in the 2003-2007 amounts to 1.3 per cent of the population in Spain, 0.8 per cent of the population in Italy and 0.2 per cent of the population in Greece, compared to 0.3 per cent at the EU-15 level.

Among the NMS-8, an outflow of about 1.8 per cent of the population in Poland has been caused by the EU Eastern enlargement according to our scenarios during the 2004 to 2007 period, compared to 1.2 per cent at the NMS-8 average. During the same period of

time, the net outflow amounted 4.7 per cent of the population in Romania and 1.9 per cent of the population in Bulgaria.

5.3.2 Free movement vs. prolongation of transitional arrangements

In the second step we analyse the potential impact of removing the remaining immigration restrictions which are in place under the transitional arrangements. In case of the NMS-8, the remaining EU-15 countries still having immigration restrictions in place have to decide whether to maintain these restrictions or to introduce the free movement in 2009. Particularly relevant is this decision in case of Austria and Germany, since these two countries are still important destinations for migrants from the NMS. In case of Bulgaria and Romania, most EU member states have to decide whether to prolong the immigration restrictions which are still in place vis-à-vis the NMS-2 in the second phase of the transitional arrangements beginning with January 1, 2009.

For the assessment of the macroeconomic effects of transitional periods we employ two policy scenarios and a benchmark scenario. Both policy scenarios rely on the migration forecasts carried out in Chapter 4.3. The status quo scenario is based here on the assumption that the migration restrictions which are applied at present will be maintained until 2011. Germany and Austria thus employ the same set of immigration restrictions for workers from the NMS-8 until the end of the transitional periods, while the UK, Ireland and Sweden continue to grant workers from the NMS-8 free access to their labour markets. Analogously, the EU member states maintain their immigration restrictions which are currently in place vis-à-vis Bulgaria and Romania. Consequently, we assume that the overall scale of immigration from the NMS-8 and the NMS-2 follows the status quo scenario outlined in Chapter 4.3, and that the regional distribution of the inflows of migrants across the EU-15 destination countries remains constant during this period.

The free movement scenario is again based on the projections carried out in Chapter 4.3. Note that the free movement scenario relies on the assumption that the elasticity of migration with respect to the income difference and labour market variables is similar in the NMS compared to other sending countries in the EU-15. Nevertheless, the free movement scenario expects that immigration from the NMS-8 and the NMS-2 will further accelerate if the free movement is introduced compared to its level under the transitional arrangement.

Table 5.2 Migration stock for the NMS-8 (2007-2011) and NMS-2 (2007-2014)

	Foreign residents from NMS-8 in per cent of population				Foreign residents from NMS-2 in per cent of population		
	Benchmark	Status Quo scenario	Free movement scenario		Benchmark	Status Quo scenario	Free movement scenario
	2007	2011	2011		2007	2014	2014
AT	1.03	1.30	1.56	AT	0.37	0.46	0.87
BE	0.40	0.62	0.60	BE	0.22	0.46	0.40
DE	0.68	0.81	1.04	DE	0.16	0.20	0.38
DK	0.41	0.60	0.61	DK	0.06	0.10	0.13
ES	0.23	0.34	0.34	ES	1.45	2.96	2.59
FI	0.45	0.59	0.69	FI	0.03	0.04	0.06
FR	0.06	0.07	0.09	FR	0.07	0.16	0.12
GR	0.19	0.22	0.29	GR	0.49	0.79	1.03
IE	4.10	6.91	6.04	IE	0.56	0.80	1.26
IT	0.18	0.26	0.27	IT	0.71	1.27	1.38
LU	1.10	1.74	1.63	LU	0.23	0.42	0.46
NL	0.22	0.35	0.33	NL	0.07	0.13	0.13
SE	0.46	0.66	0.70	SE	0.07	0.12	0.14
UK	1.02	1.71	1.50	UK	0.07	0.12	0.13
CZ	0.99	1.42	1.72	BG	3.56	5.32	6.00
EE	2.72	3.48	3.80	RO	5.39	10.41	10.65
HU	1.30	1.87	2.20				
LT	3.69	5.39	5.51				
LV	1.84	3.19	3.32				
PL	3.41	4.92	4.94				
SI	1.77	1.31	1.85				
SK	2.30	4.03	3.93				
EU-15[1)]	**0.50**	**0.72**	**0.75**	**EU-15[1)]**	**0.38**	**0.71**	**0.73**
NMS-8	**2.59**	**3.77**	**3.89**	**NMS-2**	**4.91**	**9.07**	**9.43**

1) Without Portugal.
Notes: The stock of foreign residents in 2007 is used as a benchmark. The status quo scenario refers to migration projections assuming that the transitional arrangements are prolonged, while the free movement scenario refers to projections which assume that free movement is introduced in the entire EU.

Sources: Own calculations and estimates based on the figures from national population statistics and the European LFS.

Introducing the free movement will affect not only the overall scale of migration in the enlarged EU, but also the regional distribution of migrants across destination countries. Due to missing historical evidence, we can hardly forecast the future distribution of migrants from the NMS across the EU-15 (see Chapter 4.3). Hence, we have to base our free movement scenario on assumptions here. We assume that the regional migration pattern before 2004 reflect the free choice of migrants such that future migration under the free movement will display a similar regional pattern. As a consequence, some countries (e.g. Germany and Austria) receive more migrants while others (e.g. UK and Ireland) attract less. This counterfactual policy scenario is of course based on the heroic assumption of constant behaviour of migrants and ignores that network effects etc. established since 2004 will certainly affect future migration flows. The reversion in the geographical structure of migration flows to the pre-enlargement structure can thus be

considered as the most extreme assumption. The actual regional migration pattern is likely to be between the present regional distribution and the regional distribution of migration flows before EU enlargement.

The effects of the two policy scenarios are compared with a baseline scenario which describes a setting in 2007 prior to a decision about a prolongation of transitional periods, i.e. with zero immigration during the 2008-2011 period. The policy scenarios are displayed in Table 5.2.

Throughout our simulations, we have used the actual activity and employment rates of the immigrant population derived from the European Labour Force Survey (Eurostat, 2008) for the calculation of the labour supply shocks. Moreover, we used the skill and age composition of the immigrant workforce for the analysis of the labour market effects from the same data source. However, since migrants from the NMS are employed in occupations which do not correspond to their educational attainment, we made adjustments for the 'brain waste' in the receiving countries.

5.3.3 Accounting for differences between migrants' jobs and skills

For an empirically meaningful assessment of the migration impact, we have to make assumptions on the skill structure of the labour supply shock. As has been outlined in Chapter 3, the skill level of migrants from the NMS is higher than that of natives who stay behind in the sending countries, even if we control for cohort effects (see Chapter 3). We apply here the assumption that there is no selection with respect to unobservable abilities relative to the native population in the home countries, such that migrants from the NMS would be employed in their home countries similar to natives with the same skill levels and work experience.

In the receiving countries, the occupational structure of employment suggests that migrants from the NMS are employed below their educational levels: a large share of migrants is employed in occupations which need only elementary skills irrespective of their educational attainment. As a consequence, the wage level of migrants from the NMS in the UK is well below that of natives in the receiving countries with similar education and work experience (see Chapter 6 in this report, and Barret and Duffy, 2008 for evidence from Ireland). Moreover, the returns to education do not increase significantly with the time spend in the receiving countries, although it is too early to ultimately assess the labour market assimilation of migrants from the NMS (Chapter 6). Overall, migrants from the NMS compete to a large extent in the less-skilled segments of the labour market with natives and other foreigners in the EU-15, although their educational attainment is relatively high.

Using the skill level of migrants from the NMS as reported in the Labour Force Survey would therefore bias our simulations of the migration impact. In order to avoid this, we have classified migrants according to their occupational breakdown, which has been related to the skill level of the workforce. As a result, we find much higher shares of migrants from the NMS in the group with low education, and much lower shares in the

group with high education. This revised breakdown provides in our view a much better approximation of the skill structure of the labour supply shock from the NMS than the skill breakdown reported by the Labour Force Survey.

5.4 A structural analysis of the labour market effects

5.4.1 The empirical framework

The first model we employ here for the evaluation of the labour market effects of immigration and other macroeconomic effects analyses the wage and employment effects of immigration simulataneously. The model is based on a wage-setting framework (Layard et al., 2005), which assumes that wages respond to a change in the unemployment rate, albeit imperfectly. This enables us to derive the labour market effects of migration in a setting with unemployment and wage rigidities which characterise European labour markets. The main features of the model are outlined in Box 5.1, for further details see the Background Report and Brücker and Jahn (2008).

The simulation of the immigration effects requires the estimation of the relevant parameters of the production function, of the wage-setting curves and the adjustment of capital stocks. Due to data limitations, we followed a double strategy here. For the two main destinations of immigration from the NMS-8, the UK and Germany, we used detailed and comprehensive data sets derived from the social security records (Germany) and the LFS (UK). These data sets enable us to identify the wage-setting curves and the elasticities of the production function at a disaggregated level for these two countries.

Box 5.1 Outline of the structural model

The model which is applied here is based on Brücker and Jahn (2008) and analyses the wage and employment effects of immigration simultaneously. Following Boeri and Brücker (2005), Layard et al. (2005), and Levine (1999), it is assumed that wages respond to changes in the unemployment rate, albeit imperfectly. As a consequence, an additional labour supply through immigration can both reduce wages and increase unemployment in the native labour force, depending on the elasticites of substionality and complementarity in the different segments of the labour market.

Following Borjas (2003), Ottaviano and Peri (2006), and others, we derive labour demand from a nested CES production function which groups the labour force by education, work experience and national origin. The elasticities of the production function are estimated using data from the ECHP and larger data sets derived from administrative social security data for Germany and from the LFS for the UK.

We estimate the wage-setting curves in the different segments of the labour market at the national level as

$$\ln w_{ijt} = \beta_0 + \beta_1 \ln w_{ij,t-1} + \beta_2 \ln w_{ij,t-2} + \beta_3 TREND_t + \eta_{ij} \ln u_{ijt} + \varepsilon_{ijt}, \qquad (5.1)$$

where w_{ijt} is the wage rate, $TREND_t$ a deterministic time trend, u_{ijt} the unemployment rate, ε_{ijt} the error term, β and η coefficients, i an index for education group i, j an index for experience group j, and t as before the time index. In case of the UK and Germany we estimate the wage-setting curves seperately for the different education and experience groups in the labour market; for the remaining countries we estimate a uniform wage curve due to data limitations. We control for endogeneity by instrumenting the unemployment rate with lagged values.

Following Ottaviano and Peri (2006), the model considers the adjustment of the physical capital stock to labour supply shocks. While it is assumed that the capital-output ratio remains constant in the long-run, labour supply can affect the capital intensity of production in the short-run. The adjustment process is estimated as

$$\ln \kappa_t = \beta_0 + \beta_1 \ln \kappa_{t-1} + \beta_2 \ln \kappa_{t-2} + \beta_3 TREND_t + \gamma \Delta \ln L_t + \varepsilon_t, \qquad (5.2)$$

where κ_t is the capital-labour ratio, $TREND_t$ a deterministic time trend, L_t the labour force, ε_t the error term, and Δ the difference operator, β and γ coefficients, and t the time index. The numbers of lags of the dependent variable which are included have been chosen by significance level of the respective lag.

The estimation results from the elasticities of the production function, the elasticities of the wage-setting curves and for the adjustment of capital stocks are then used for the simulation of the impact of labour supply shocks through immigration in a general equilbrium framework. Further details are provided in the Background Report and in Brücker and Jahn (2008).

We have then estimated the elasticities of the production function at a less disaggregated level for the EU-15 countries based on data from the European Community Household Panel (ECHP). The ECHP has a limited number of observations which may affect a precise estimation of the relevant parameters. As a robustness check, we have carried out a sensitivity analysis based on parameter values taken from various studies in the literature. Our findings have, however, turned out to be robust irrespective of the parameter values we use.[25] For the sending countries in the NMS we have not yet comparable data at hand. We therefore used the average of our parameter estimates for the EU-15 in our simulations for the NMS assuming that the economies will behave there similarly to the EU-15 countries. The estimation results for the elasticities of the wage-setting curves, the elasticities of the production function and the adjustment of the capital-labour ratio are presented in detail in the Background Report.

5.4.2 Outline of the scenarios

We simulate first the impact of the EU Eastern enlargement on migration between the NMS-8 and the EU-15 during the 2004 to 2007 period, and then the impact of migration between the NMS-2 and the EU-15 during the same period of time. In each scenario we distinguish between the short-run and the long-run effects of migration. In the short-run scenario we assume that the capital-labour ratio adjusts partially to the labour supply shock, in the long-run scenario we assume that the capital stock adjusts completely to the increasing labour supply.

In all scenarios we have calculated the following effects:

- First, the impact of migration on aggregate GDP, on GDP per capita and the total factor income per native. The first variable captures the overall effect on output and the second one the output effect per capita. Both indicators should not be misunderstood as welfare indicators. They do in particular not capture whether natives in the receiving countries lose or gain. The third indicator comprises the total factor income of the native population based on the assumptions that migrants do not bring capital and that natives own the entire capital stock of the economy. Under these strong assumptions, this is an indication for the change in total earnings of the native population.

- Second, we have calculated the aggregate effects on the labour market. This covers the the wage rate and the aggregate unemployment rate.

- Third, we have analysed the wage and unemployment effects in detail for different groups in the labour market, distinguishing between high skilled, medium and low skilled workers.

[25] The results of the sensitivity analysis are available from the authors upon request.

5.4.3 The impact of Eastern enlargement on the UK and Germany, 2004-2007

Based on the detailed estimation of the parameters, including the elasticities of the wage-setting curves for different education and experience groups in the labour market, we have first simulated the impact of Eastern enlargement on the UK and Germany. According to our scenarios, Eastern enlargement involves an increase in the labour force through immigration from the NMS-8 of about 1.3 per cent in the UK, but only of 0.1 per cent in Germany. Immigration from the NMS-2 is negligible in both countries. The workforce is grouped here by four types of skill levels: workers without a vocational training degree, workers with a vocational training degree or a similar level of schooling, workers with a college degree in the UK or an 'Abitur' and a vocational degree in Germany, and, finally, workers with a university degree.

Our simulation results indicate that the immigration from the NMS will decrease the GDP per capita in the UK by about 0.34 per cent in the short-run while the long-run effect is almost neutral. The short-run decrease can be attributed to the fact that migrants do not bring capital. However, the factor income of the native population, i.e. the income of native labour and capital, will increase by 0.31 per cent in the long-run and only slightly decline by 0.06 per cent in the short-term. Wages decline in the short-run by about 0.29 per cent and unemployment increases by about 0.26 percentage points in the short-run. In the long-run, when capital stocks have adjusted, the wage impact is zero while the unemployment rate is slightly increasing by 0.18 percentage points. The results for Germany display a similar picture, but are much smaller due to the lower immigration.

We find that the effects are very balanced across the different groups of the labour force in the UK and Germany, with the notable exception of workers with no vocational training. In the UK, these workers are much more affected by declining wages in the short-term (-0.67) compared to workers with vocational training (-0.23), a high school (-0.27) or a university degree (-0.26). In the long-run, these effects diminish (Table 5.3). Similarly, the unemployment rate of workers with no vocational training tends to increase more than that of other workers. In the long-run, the unemployment rate remains by and large unchanged for all groups in the labour market in the UK, except for workers with no vocational training. It is also important to note that the native workforce tends to win from migration slightly in the long-run both in terms of higher wages and lower unemployment risks, while the foreign workforce loses substantially (Table 5.3).

It is worthwhile to note that the ceteris paribus condition applies for these results, i.e. that other currents may affect wages and the unemployment rate in one direction or another. In fact, unemployment has increased in the UK slightly by about 0.5 percentage points from 2004 to 2007 which is in the range of normal fluctuations which we observe since the beginning of this decade and before the financial crisis began. We thus conclude that our findings are by and large consistent with actual developments. However, the unemployment rate of the foreign workforce has increased by less than 0.5 percentage points during the simulation period, i.e. by much less than our simulation results suggest. Again, the findings presented here do not predict the actual development of the unemployment rate or wage growth for certain groups in the labour market, but the

potential impact of migration under the assumption that anything else is equal and that the values of the parameters of our structural model remain constant.

Table 5.3 The impact of Eastern enlargement on the UK and Germany, 2004-2007

	NMS-8				NMS2			
	Germany		United Kingdom		Germany		United Kingdom	
	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run
	Changes in per cent (unemployment rate: changes in percentage points)							
	Macro figures							
Change of labour force	0.10	0.10	1.28	1.28	0.04	0.04	0.07	0.07
GDP	0.01	0.07	0.44	0.81	0.00	0.03	0.03	0.05
GDP per capita	-0.07	-0.01	-0.34	0.03	-0.02	0.00	-0.01	0.01
Factor income per native	-0.03	0.03	-0.06	0.31	-0.01	0.01	0.00	0.02
Unemployment	0.04	0.02	0.26	0.18	0.02	0.01	0.01	0.01
Wages	-0.03	0.00	-0.29	0.00	-0.01	0.00	-0.01	0.00
	Wages by education							
All	-0.03	0.00	-0.29	0.00	-0.01	0.00	-0.01	0.00
No vocational	-0.07	-0.04	-0.67	-0.38	-0.03	-0.02	-0.04	-0.02
Vocational	-0.03	0.00	-0.23	0.06	-0.01	0.00	-0.01	0.00
High school	-0.03	0.00	-0.27	0.02	-0.01	0.00	-0.01	0.00
University	-0.03	0.00	-0.26	0.05	-0.01	0.00	-0.01	0.00
	Native wages by education							
All natives	-0.02	0.00	-0.24	0.05	-0.01	0.00	-0.01	0.00
No vocational	-0.04	-0.01	-0.52	-0.23	-0.01	0.00	-0.03	-0.01
Vocational	-0.02	0.01	-0.20	0.09	-0.01	0.00	-0.01	0.00
High school	-0.03	0.00	-0.21	0.08	-0.01	0.00	-0.01	0.00
University	-0.02	0.01	-0.20	0.10	-0.01	0.00	-0.01	0.01
	Non-native wages by education							
All non-natives	-0.07	-0.04	-0.89	-0.60	-0.03	-0.02	-0.05	-0.03
No vocational	-0.12	-0.09	-4.45	-4.17	-0.04	-0.03	-0.25	-0.23
Vocational	-0.04	-0.02	-0.85	-0.56	-0.02	-0.01	-0.05	-0.03
High school	-0.07	-0.04	-0.75	-0.47	-0.02	-0.01	-0.04	-0.03
University	-0.07	-0.03	-0.62	-0.31	-0.03	-0.02	-0.03	-0.02
	Unemployment by education							
All	0.04	0.02	0.26	0.18	0.02	0.01	0.01	0.01
No vocational	0.10	0.06	1.02	0.92	0.04	0.02	0.06	0.05
Vocational	0.03	0.00	0.15	0.06	0.01	0.00	0.01	0.00
High school	0.03	0.01	0.14	0.04	0.01	0.00	0.01	0.00
University	0.01	0.00	0.04	0.02	0.01	0.00	0.00	0.00
	Native unemployment by education							
All natives	0.02	0.00	0.07	-0.01	0.01	0.00	0.00	0.00
No vocational	0.05	0.02	0.18	0.08	0.02	0.01	0.01	0.00
Vocational	0.02	-0.01	0.06	-0.02	0.01	0.00	0.00	0.00
High school	0.01	0.00	0.07	-0.02	0.00	0.00	0.00	0.00
University	0.01	0.00	0.01	-0.01	0.00	0.00	0.00	0.00
	Non-native unemployment by education							
All non-natives	0.11	0.07	1.69	1.59	0.04	0.03	0.11	0.10
No vocational	0.17	0.13	5.58	5.47	0.07	0.05	0.63	0.62
Vocational	0.07	0.03	1.30	1.18	0.03	0.01	0.09	0.08
High school	0.09	0.06	0.40	0.22	0.03	0.02	0.02	0.01
University	0.05	0.03	0.06	0.02	0.02	0.01	0.00	0.00

Source: Own estimates and simulation, see text.

5.4.4 The impact of Eastern enlargement on the EU-25, 2004-2007

Table 5.4 presents the impact of migration from the NMS-8 to the EU-15 caused by Eastern enlargement on key macroeconomic variables in the entire EU during the 2004-2007 period. We find that immigration from the NMS-8 increases the GDP of the enlarged EU in the short-run by about 0.1 per cent and in the long-run, after the adjustment of capital stocks, by about 0.2 per cent. While the GDP in the EU-15 increases by about 0.3 per cent it falls in the NMS-8 by about 1 per cent in the long-run. This is not surprising, since the first group of countries receives additional labour and, after the adjustment of capital stocks, additional capital. The reverse holds for the sending countries.

The impact of migration on the GDP per capita is largely influenced by two factors: First, since immigrants do not bring physical capital by assumption, the capital endowment per capita falls in the receiving and increases in the sending countries in the short-term. In the long-term, when capital stocks adjust to changes in the labour supply, this effect disappears. Second, the rate of participation in the labour market is higher among the migrant population compared to the population average in the receiving countries. As a consequence, the GDP per capita tends to rise in the receiving countries. Our simulations demonstrate that the GDP per capita tends to increase in the sending countries in the short-term, while it remains largely constant in the receiving countries.

More importantly, the total gross factor income of natives in the receiving countries is increasing in the long-run. Several factors contribute to this. First, natives in the sending countries tend to benefit from migration if they differ in their factor endowments (human capital, physical capital) from the migrant population. However, if the unemployment rate is increasing, the effects on the aggregate income of natives are ambiguous. When capital adjusts in the longer term, adverse shocks on employment are mitigated and total factor income increases with a larger capital stock. The converse holds for the sending countries.

It is important to note in this context that our calculation of the gross factor income per native is based on the assumption that the capital stock of the economy is owned by the native population. This is a strong assumption, since we may have an inflow of foreign capital and savings by the migrant population. In the first case some of the additional income may flow abroad and in the second case to the migrant population. Nevertheless, since it is likely that most of the investment is undertaken by natives, this simplifying assumption is not expected to have a large impact on the findings.

Under the assumptions of our simulations, the total factor income of the native population increases by 1.3 per cent in Ireland and by 0.3 per cent in the UK in the long-run.[26] In the short-run, the impact of migration on the total factor income of the native population is almost neutral in the UK, while it declines by about 0.8 per cent in Ireland

[26] Note that the findings for the UK and Germany are based here on different parameter estimates and therefore deviate slightly from those presented in the previous section. The differences are, however, modest.

reflecting the labour supply shock of 5 per cent there. With the exception of Luxembourg, the impact on the other receiving countries is negligible. Depending on the scale of the emigration shock in the NMS-8, the total factor income of the native population declines in the long-run in the NMS-8 when capital stocks have adjusted. Note that we assume that the population in the NMS consists only of natives such that GDP per capita is identical to the GDP per native.

Table 5.4 The macroeconomic impact of migration from the NMS-8, 2004-2007

		GDP		GDP per capita		Factor income per native		Unemployment		Wages	
	Change of labour force	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run
		Changes in per cent (unemployment rate: changes in percentage points)									
AT	0.42	0.31	0.34	0.00	0.02	0.12	0.15	0.02	0.02	-0.02	0.00
BE	0.22	0.11	0.17	-0.08	-0.02	0.01	0.07	0.07	0.05	-0.04	0.00
DE	0.10	0.04	0.10	-0.03	0.02	-0.01	0.04	0.03	0.01	-0.03	0.00
DK	0.23	0.13	0.20	-0.08	-0.01	0.00	0.07	0.02	0.00	-0.05	0.00
ES	0.19	0.03	0.11	-0.08	-0.01	-0.04	0.04	0.05	0.02	-0.04	0.00
FI	0.09	0.03	0.08	-0.06	-0.01	-0.02	0.04	0.03	0.01	-0.03	0.00
FR	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GR	-0.01	0.00	-0.01	0.01	0.00	0.00	-0.01	0.00	0.00	0.00	0.00
IE	4.87	0.80	2.93	-2.07	-0.02	-0.77	1.31	0.87	0.37	-1.61	0.00
IT	0.11	0.04	0.08	-0.03	0.01	0.00	0.04	0.02	0.01	-0.03	0.00
LU	1.00	0.81	1.13	0.23	0.55	0.34	0.65	0.12	0.05	-0.25	0.00
NL	0.14	0.09	0.12	-0.03	-0.01	0.02	0.04	0.02	0.01	-0.02	0.00
SE	0.38	0.25	0.33	-0.01	0.07	0.05	0.12	0.05	0.03	-0.06	0.00
UK	1.28	0.50	0.89	-0.28	0.10	-0.05	0.34	0.21	0.11	-0.29	0.00
CZ	-0.08	-0.07	-0.11	0.01	-0.03	0.01	-0.03	-0.02	0.00	0.03	0.00
EE	-0.21	-0.09	-0.19	0.12	0.02	0.12	0.02	-0.04	0.00	0.06	0.00
HU	-0.44	-0.34	-0.49	0.10	-0.04	0.10	-0.04	-0.04	0.00	0.11	0.00
LT	-1.14	-0.55	-1.15	0.61	-0.01	0.61	-0.01	-0.32	-0.01	0.31	0.00
LV	-0.43	-0.26	-0.46	0.17	-0.03	0.17	-0.03	-0.09	0.00	0.12	0.00
PL	-1.77	-0.88	-1.94	0.90	-0.18	0.90	-0.18	-0.59	0.03	0.43	0.00
SI	0.26	0.15	0.21	-0.10	-0.05	-0.10	-0.05	0.02	0.00	-0.04	0.00
SK	-1.34	-0.53	-1.51	0.82	-0.18	0.82	-0.18	-0.55	0.00	0.43	0.00
EU-15[1)]	**0.36**	**0.13**	**0.26**	**-0.09**	**0.03**	**-0.02**	**0.10**	**0.06**	**0.02**	**-0.09**	**0.00**
NMS-8	**-1.16**	**-0.52**	**-1.10**	**0.65**	**0.05**	**0.65**	**0.05**	**-0.42**	**-0.02**	**0.25**	**0.00**
Total	**0.11**	**0.11**	**0.20**	**0.11**	**0.20**	**0.16**	**0.25**	**-0.03**	**0.00**	**-0.07**	**0.00**

1) Without Portugal.

Source: Own estimates and simulation, see text.

In the short-run, the unemployment in the receiving countries increases by 0.06 percentage points, while it remains stable after the adjustment of capital stocks. In the mainly affected countries, our simulations suggest that the unemployment rate may increase by 0.2 percentage points in the UK and 0.9 percentage points in Ireland in the short-run. In the long-run, the unemployment rate increases by 0.1 percentage points in the UK and 0.4 percentage points in Ireland.

In contrast to these results, we do not find any visible increase in the unemployment rate in Ireland in the course of the EU's Eastern enlargement despite the substantial influx of migrants there. This may be traced back to a faster adjustment of the capital stock than

assumed by our model or by other adjustment mechanisms not considered by our model such as international trade.

In the sending countries, we find that the unemployment rate is declining as a consequence of the outflow of labour. The same holds true for the entire EU, since migrants tend to move out of countries or regions with an unemployment rate at or above the average level of the enlarged EU, while they moved to countries which have unemployment rates below the EU average.

In our model, migration affects aggregate wages only in the short-run, since aggregate factor proportions remain unchanged in the long-run due to the adjustment of capital stocks. At the average of the EU-15, wages decline slightly by 0.1 per cent, but increase in the sending countries by 0.3 per cent in the short-run. Again, Ireland is at a wage decrease of 1.6 per cent the most affected country, while the wage decreases are at 0.3 per cent in the UK and Luxembourg and only limited in the other affected countries. In contrast, depending on the outflow, wages increase by 0.4 per cent in Poland and Slovakia in the short-run, such that migration there contributed slightly to the wage convergence. Nevertheless, the wage impact is rather moderate and cannot be felt in most receiving and sending countries.

Migration affects the different groups in the labour market in different ways. We have therefore analysed how the different groups are affected in terms of their wages and unemployment risks. We find that low- and medium skilled workers are slightly more affected by declining wages in the EU-15 (-0.10 and -0.09 per cent) compared to high-skilled workers (-0.07 per cent) in the short-term. In the long-term, we find that migration from the NMS-8 reduces wages of the low- and medium-skilled by only 0.01 per cent, and increases wages of high-skilled by 0.02 per cent. This pattern reflects that migrants from the NMS are heavily concentrated at the low and medium ranges of the skill spectrum if we adjust for their employment structure as has been outlined above. If migrants from the NMS can transfer their human capital better than today into the labour markets of the receiving countries in the future, then the low skilled will become less affected and the high skilled more affected than in the simulations presented here.

In the NMS-8, high-skilled natives benefit more from emigration (+0.30 per cent) than less- (+0.23 per cent) and medium-skilled workers (+0.23 per cent) in the short-run. In the long-run, wages of the high-skilled increase by 0.03 per cent, while the wages of the medium-skilled decline by 0.02 per cent. This can be traced back to the fact that the labour supply in the medium range of the skill spectrum is substantially larger in the NMS-8 compared to the EU-15, such that the composition of the migrant workforce changes labour endowments in the receiving and the sending countries in different ways (Table 5.5).

Table 5.5 The impact of migration from the NMS-8 on wages, 2004-2007

	All		Low-skilled		Medium-skilled		High-skilled	
	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run
				Changes in per cent				
AT	-0.02	0.00	-0.02	0.00	-0.02	0.00	-0.02	0.00
BE	-0.04	0.00	-0.03	0.01	-0.03	0.00	-0.05	-0.01
DE	-0.03	0.00	-0.03	0.00	-0.03	0.00	-0.03	0.00
DK	-0.05	0.00	-0.05	0.00	-0.05	0.00	-0.05	0.00
ES	-0.04	0.00	-0.03	0.01	-0.14	-0.09	-0.01	0.04
FI	-0.03	0.00	-0.03	0.00	-0.03	0.00	-0.03	0.00
FR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IE	-1.61	0.00	-1.72	-0.19	-1.84	-0.23	-1.34	0.30
IT	-0.03	0.00	-0.03	0.00	-0.03	0.00	-0.03	0.00
LU	-0.25	0.00	-0.13	0.12	-0.14	0.11	-0.63	-0.38
NL	-0.02	0.00	-0.02	0.00	-0.02	0.00	-0.03	0.00
SE	-0.06	0.00	-0.05	0.01	-0.05	0.01	-0.08	-0.02
UK	-0.29	0.00	-0.35	-0.07	-0.35	-0.06	-0.19	0.11
CZ	0.03	0.00	0.03	0.00	0.02	0.00	0.03	0.01
EE	0.06	0.00	0.07	0.01	0.06	0.00	0.06	0.00
HU	0.11	0.00	0.09	-0.01	0.10	-0.01	0.12	0.01
LT	0.31	0.00	0.32	0.02	0.30	-0.01	0.33	0.01
LV	0.12	0.00	0.11	0.00	0.11	-0.01	0.13	0.01
PL	0.43	0.00	0.41	0.01	0.39	-0.03	0.51	0.06
SI	-0.04	0.00	-0.06	-0.02	-0.04	0.00	-0.03	0.01
SK	0.43	0.00	0.36	-0.02	0.41	-0.02	0.49	0.05
EU-15[1)]	**-0.09**	**0.00**	**-0.10**	**-0.01**	**-0.09**	**-0.01**	**-0.07**	**0.02**
NMS-8	**0.25**	**0.00**	**0.23**	**0.00**	**0.23**	**-0.02**	**0.30**	**0.03**
Total	**-0.07**	**0.00**	**-0.09**	**-0.01**	**-0.08**	**-0.01**	**-0.06**	**0.03**

1) Without Portugal.

Source: Own estimates and simulation, see text.

Finally, immigration from the NMS-8 affects the unemployment risks of different groups in the labour market in different ways. It increases the unemployment rate of less-skilled workers in the EU-15 by 0.07 percentage points, of medium-skilled workers by 0.06 percentage points and of high-skilled workers by 0.02 percentage points. In the long-run, the impact of immigration on employment is largely neutral, the unemployment rates of the low- and medium-skilled increase by a mere 0.03 percentage points. A measurable impact is only found in Ireland. Note that it is rather likely that a larger part of the increasing unemployment risk is absorbed by the migrant population and not by natives.

In the NMS-8, the unemployment rate is declining in the short-term for the less-skilled (-0.81 percentage points), compared to -0.41 percentage points for the medium skilled and -0.19 percentage points for the high-skilled. In the long-run, the unemployment-risk is declining by -0.21 percentage points for the less-skilled, while the effects for the medium- and high-skilled are rather negligible (Table 5.6).

Table 5.6 The impact of migration from the NMS-8 on unemployment, 2004-2007

	All		Low-skilled		Medium-skilled		High-skilled	
	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run
	Changes in percentage points							
AT	0.02	0.02	0.03	0.02	0.01	0.00	0.09	0.09
BE	0.07	0.05	0.09	0.06	0.08	0.06	0.03	0.02
DE	0.03	0.01	0.04	0.01	0.02	0.00	0.03	0.02
DK	0.02	0.00	0.03	0.00	0.01	0.00	0.03	0.01
ES	0.05	0.02	0.04	0.00	0.16	0.12	0.01	-0.02
FI	0.03	0.01	0.04	0.00	0.04	0.01	0.02	0.01
FR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IE	0.87	0.37	1.32	0.57	0.86	0.43	0.31	-0.01
IT	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.00
LU	0.12	0.05	0.04	-0.04	0.04	-0.02	0.47	0.40
NL	0.02	0.01	0.03	0.02	0.01	0.01	0.01	0.00
SE	0.05	0.03	0.08	0.05	0.04	0.02	0.07	0.05
UK	0.21	0.11	0.29	0.14	0.25	0.16	0.04	-0.02
CZ	-0.02	0.00	-0.11	-0.07	-0.01	0.00	0.00	0.00
EE	-0.04	0.00	-0.08	-0.01	-0.05	0.00	-0.02	0.00
HU	-0.04	0.00	-0.10	0.00	-0.04	0.00	-0.01	0.00
LT	-0.32	-0.01	-0.61	-0.11	-0.33	0.01	-0.15	0.00
LV	-0.09	0.00	-0.14	-0.02	-0.09	0.00	-0.05	0.00
PL	-0.59	0.03	-1.12	-0.23	-0.61	0.06	-0.26	0.00
SI	0.02	0.00	0.05	0.02	0.02	0.00	0.01	0.00
SK	-0.55	0.00	-1.55	-0.21	-0.52	0.00	-0.28	-0.12
EU-15[1)]	**0.06**	**0.02**	**0.07**	**0.03**	**0.06**	**0.03**	**0.02**	**0.00**
NMS-8	**-0.42**	**-0.02**	**-0.81**	**-0.21**	**-0.41**	**0.00**	**-0.19**	**-0.03**
Total	**-0.03**	**0.00**	**-0.01**	**-0.01**	**-0.07**	**0.01**	**0.00**	**-0.01**

1) Without Portugal.

Source: Own estimates and simulation, see text.

5.4.5 The impact of migration from Bulgaria and Romania, 2004-2007

While we have analysed in the previous section the impact of migration flows which have been caused by the EU's Eastern enlargement during the period 2004 to 2007, we analyse here the impact of migration from the NMS-2 during the same period compared to a zero migration scenario. Table 5.7 displays the aggregate effects on GDP and factor income. The immigration from the NMS-2 of about 0.5 per cent of the labour force of the EU-15 increases the GDP of the EU-15 by 0.1 per cent in the short-run and 0.3 per cent in the long-run, while it reduces it in the NMS-2 by 2.9 per cent in the short-run and by 4.1 per cent in the long-run. The GDP per capita in the EU-15 falls by 0.2 per cent in the short-run and by 0.02 per cent in the long-run. The decrease in the short-run reflects the fact that the immigration from the NMS-2 reduces the capital stock per capita in the short-run. Finally, the total factor income of the native population in the EU-15 is slightly reduced in the short-run, but it increases in the long-run. In contrast, the factor income of the native population of the NMS-2 declines. It is worth noting that the total factor

income of natives in the main receiving countries, Spain and Italy, increases by 0.5 and 0.4 per cent, respectively, in the long-run (Table 5.7).

Table 5.7 The macroeconomic impact of migration from the NMS-2, 2004-2007

		GDP		GDP per capita		Factor income per native		Unemployment		Wages	
	Change of labour force	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run
		Changes in per cent (unemployment rate: changes in percentage points)									
AT	0.13	0.09	0.10	-0.04	-0.03	0.03	0.04	0.01	0.01	-0.01	0.00
BE	0.22	0.09	0.15	-0.07	-0.01	0.00	0.06	0.07	0.05	-0.04	0.00
DE	0.04	0.02	0.04	-0.01	0.01	0.00	0.02	0.01	0.00	-0.01	0.00
DK	0.03	0.02	0.03	-0.01	0.01	0.00	0.01	0.01	0.01	-0.01	0.00
ES	2.29	0.42	1.33	-0.88	0.01	-0.44	0.46	0.65	0.24	-0.50	0.00
FI	0.01	0.00	0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FR	0.06	0.03	0.05	-0.03	-0.01	0.00	0.02	0.01	0.01	-0.01	0.00
GR	0.31	0.08	0.22	-0.13	0.01	-0.03	0.11	0.07	0.01	-0.08	0.00
IE	0.33	0.09	0.24	-0.08	0.06	-0.04	0.11	0.06	0.02	-0.11	0.00
IT	1.27	0.42	0.90	-0.39	0.08	-0.05	0.43	0.26	0.09	-0.32	0.00
LU	0.15	0.10	0.15	-0.03	0.02	0.04	0.08	0.01	0.00	-0.04	0.00
NL	0.04	0.03	0.04	-0.02	0.00	0.00	0.01	0.01	0.00	-0.01	0.00
SE	0.05	0.02	0.03	-0.02	-0.01	0.00	0.01	0.01	0.01	-0.01	0.00
UK	0.07	0.05	0.07	0.01	0.03	0.01	0.02	0.01	0.00	-0.01	0.00
BG	-1.93	-0.98	-1.98	0.97	-0.05	0.97	-0.05	-0.60	-0.08	0.50	0.00
RO	-4.70	-3.60	-4.83	1.15	-0.14	1.15	-0.14	-0.61	-0.16	0.84	0.00
EU-15[1)]	**0.50**	**0.13**	**0.30**	**-0.19**	**-0.02**	**-0.05**	**0.13**	**0.13**	**0.05**	**-0.10**	**0.00**
NMS-2	**-3.97**	**-2.91**	**-4.07**	**1.10**	**-0.12**	**1.10**	**-0.12**	**-0.57**	**-0.10**	**0.76**	**0.00**
Total	**0.18**	**0.11**	**0.28**	**0.11**	**0.28**	**0.25**	**0.41**	**0.08**	**0.04**	**-0.10**	**0.00**

1) Without Portugal.

Source: Own estimates and simulation, see text.

While the impact of immigration from the NMS-2 on unemployment in the EU-15 is almost neutral in the long-run, it increases by 0.1 percentage points in the short-run. According to our simulations, the unemployment rate would have increased by 0.7 percentage points in Spain and 0.3 percentage points in Italy in the short-run. However, we observe a distinct decline of the unemployment rate in Spain during the period of observation. Again, there may be several explanations for this puzzle: Capital stocks may have adjusted faster than projected, or the elasticity of the wage curve may be larger than according to our estimates.

Wages decline in our model in the receiving countries by about 0.1 per cent in the short-run. This is relatively moderate. In the two mainly affected receiving countries, Spain and Italy, wages decline by about 0.5 per cent (Spain) and 0.3 per cent (Italy) in the short-run. Note that we do not observe a flatting of the wage increases in Spain and Italy since the beginning of this decade. Nevertheless, the wage growth would have been slightly higher there accordint to our simulations. In the two sending countries, wages increase by 0.5 per cent (Bulgaria) and 0.8 per cent (Romania) in the short-run, while the long-run effects of emigration on wages are neutral.

At the level of the EU-15, the short-run impact of immigration from the NMS-2 on the structure of wages is – at between -0.05 and -0.15 per cent for the different skill groups – rather moderate. However, we observe distinct differences in the main destination countries: The wages for the less skilled (-0.02 per cent) and the medium skilled (-0.93 per cent) decrease in Spain in the long-run, while those of the high skilled tend to rise (+0.46 per cent). In contrast, the effects on the structure of wages are rather neutral in Italy in the long-run. In the sending countries, wages tend to increase for the high-skilled by 0.15 per cent in the long-run, while they decline for the medium and the less skilled moderately. In the short-run, we observe again the largest wage increase for high skilled workers (Table 5.8).

Table 5.8 The impact of migration from the NMS-2 on wages, 2004-2007

	All		Low-skilled		Medium-skilled		High-skilled	
	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run
				Changes in per cent				
AT	-0.01	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00
BE	-0.04	0.00	-0.04	0.00	-0.03	0.01	-0.05	-0.01
DE	-0.01	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00
DK	-0.01	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00
ES	-0.50	0.00	-0.48	-0.02	-1.42	-0.93	-0.09	0.46
FI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FR	-0.01	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00
GR	-0.08	0.00	-0.11	-0.02	-0.09	-0.01	-0.05	0.04
IE	-0.11	0.00	-0.11	0.00	-0.12	-0.01	-0.11	0.01
IT	-0.32	0.00	-0.31	0.00	-0.33	-0.01	-0.30	0.02
LU	-0.04	0.00	-0.02	0.02	-0.05	-0.01	-0.05	-0.01
NL	-0.01	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00
SE	-0.01	0.00	-0.01	0.00	-0.01	0.00	0.00	0.00
UK	-0.01	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00
BG	0.50	0.00	0.49	0.02	0.46	-0.05	0.56	0.05
RO	0.84	0.00	0.80	-0.04	0.77	-0.06	1.06	0.21
EU-15[1)]	**-0.10**	**0.00**	**-0.15**	**0.00**	**-0.12**	**-0.04**	**-0.05**	**0.05**
NMS-2	**0.76**	**0.00**	**0.76**	**-0.03**	**0.71**	**-0.06**	**0.88**	**0.15**
Total	**-0.10**	**0.00**	**-0.14**	**0.00**	**-0.11**	**-0.04**	**-0.05**	**0.05**

1) Without Portugal.

Source: Own estimates and simulation, see text.

The unemployment rate in the receiving countries increases for the less skilled by 0.20 percentage points, for the medium skilled by 0.14 percentage points in the short-run and only slightly by 0.03 percentage points for the high-skilled. In the long-run, the unemployment rate is declining for the high-skilled, but slightly increasing for the low- and medium-skilled. Particularly affected are again medium skilled workers in Spain. In the sending countries, we observe that less-skilled and high-skilled workers benefit particularly from falling unemployment rates in the the long-run, while the medium skilled benefit less than proportional (Table 5.9).

Table 5.9 The impact of migration from the NMS-2 on unemployment, 2004-2007

	All		Low-skilled		Medium-skilled		High-skilled	
	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run
	Changes in percentage points							
AT	0.01	0.01	0.02	0.01	0.00	0.00	0.04	0.04
BE	0.07	0.05	0.15	0.11	0.03	0.01	0.05	0.03
DE	0.01	0.00	0.02	0.00	0.01	0.00	0.01	0.01
DK	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.02
ES	0.65	0.24	0.64	0.20	1.40	0.99	0.06	-0.28
FI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FR	0.01	0.01	0.01	0.00	0.02	0.02	0.01	0.01
GR	0.07	0.01	0.07	0.02	0.07	0.00	0.03	-0.01
IE	0.06	0.02	0.08	0.03	0.06	0.02	0.03	0.01
IT	0.26	0.09	0.26	0.06	0.30	0.15	0.14	0.01
LU	0.01	0.00	0.01	-0.01	0.02	0.01	0.02	0.01
NL	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01
SE	0.01	0.01	0.03	0.02	0.01	0.01	0.00	0.00
UK	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.00
BG	-0.60	-0.08	-1.12	-0.23	-0.49	0.00	-0.38	-0.11
RO	-0.61	-0.16	-0.62	-0.26	-0.66	-0.12	-0.54	-0.31
EU-15[1)]	**0.13**	**0.05**	**0.20**	**0.06**	**0.14**	**0.09**	**0.03**	**-0.03**
NMS-2	**-0.57**	**-0.10**	**-0.66**	**-0.20**	**-0.59**	**-0.07**	**-0.41**	**-0.15**
Total	**0.08**	**0.04**	**0.15**	**0.05**	**0.07**	**0.07**	**0.01**	**-0.04**

1) Without Portugal.

Source: Own estimates and simulation, see text.

5.4.6 The impact of transitional arrangements and the free movement of workers from the NMS-8, 2008-2011

In this section we address the impact of a prolongation of the transitional arrangements for the free movement of workers from the NMS-8 as well as the implications of introducing the free movement for them. We evaluate the impacts during the 2008-2011 period, i.e. until the date the transitional arrangements will finally expire. Note that introducing the free movement would trigger not only an increase of aggregate migration but also a change in the geographical distribution of the migration flows.

Table 5.10 displays the macroeconomic effects of the prolongation of the transitional arrangements and the introduction of the free movement. The difference between these scenarios is interpreted as the effect of introducing the free movement in all remaining countries in 2009. As a consequence of the redirection of migration flows away from the UK and Ireland we find that the GDP declines by 0.11 per cent in the UK and by 0.17 per cent in Ireland, while the GDP increases in Germany by 0.11 per cent and by 0.24 per cent in Austria in the free movement case compared to a prolongation of the transitional arrangements. However, since both countries have to open their labour markets anyway in 2011, the effects are modest. The unemployment rate rises by 0.08 percentage points

in Germany and 0.02 percentage points in Austria, while wages tend to decline (-0.08 per cent in Germany and -0.02 per cent in Austria).

Table 5.10 Short-run effects of transitional arrangements and the free movement of workers from the NMS-8, 2008-2011

	Change of labour force	GDP	GDP per capita	Factor income per native	Unemployment	Wages
	Changes in per cent (unemployment rate: changes in percentage points)					
AT	0.33	0.24	-0.01	0.09	0.02	-0.02
BE	-0.02	-0.01	0.01	0.00	-0.01	0.00
DE	0.28	0.11	-0.09	-0.02	0.08	-0.08
DK	0.01	0.01	0.00	0.00	0.00	0.00
ES	0.00	0.00	0.00	0.00	0.00	0.00
FI	0.11	0.03	-0.08	-0.02	0.03	-0.03
FR	0.03	0.02	-0.01	0.00	0.01	0.00
GR	0.07	0.02	-0.05	-0.01	0.02	-0.02
IE	-1.26	-0.17	0.57	0.24	-0.23	0.44
IT	0.02	0.01	-0.01	0.00	0.00	-0.01
LU	-0.18	-0.15	-0.04	-0.06	-0.02	0.05
NL	-0.01	-0.01	0.00	0.00	0.00	0.00
SE	0.05	0.03	0.00	0.01	0.01	-0.01
UK	-0.30	-0.11	0.08	0.02	-0.05	0.07
CZ	-0.30	-0.27	0.02	0.02	-0.06	0.08
EE	-0.32	-0.15	0.18	0.18	-0.07	0.09
HU	-0.33	-0.25	0.08	0.08	-0.03	0.08
LT	-0.12	-0.06	0.07	0.07	-0.03	0.03
LV	-0.13	-0.08	0.05	0.05	-0.03	0.04
PL	-0.01	-0.01	0.01	0.01	-0.01	0.00
SI	-0.54	-0.31	0.23	0.23	-0.05	0.09
SK	0.10	0.04	-0.06	-0.06	0.04	-0.03
EU-15[1)]	**0.02**	**0.02**	**-0.01**	**0.00**	**0.01**	**0.00**
NMS-8	**-0.12**	**-0.12**	**0.00**	**0.00**	**-0.01**	**0.04**
Total	**0.00**	**0.01**	**0.01**	**0.02**	**0.01**	**0.00**

1) Without Portugal.

Source: Own estimates and simulation, see text.

5.4.7 The impact of transitional arrangements and the free movement of workers from Bulgaria and Romania, 2008-2014

The selective application of immigration restrictions vis-à-vis workers from Bulgaria and Romania by the EU-15 countries has affected both the overall scale and the geographical distribution of migration flows from the NMS-2 similar to the NMS-8. Particularly Spain and Italy experienced an immigration surge, while inflows to Germany and Austria declined. Introducing the free movement of workers for Bulgaria and Romania will therefore again both increase the number of immigrants and change the geographical distribution of immigration flows, also the regional structure will change to a smaller extent compared to the NMS-8.

Our macroeconomic simulations reflect this picture. In Germany, the GDP will increase if the free movement is introduced, while the GDP per capita falls, wages tend to decline and the unemployment rate tends to rise in the short-run (Table 5.11). This is offset in the long-run due to the adjustment of capital stocks. Then GDP increases further, while the wage and unemployment effects diminish. The same picture can be drawn for Italy; GDP there increases by 0.06 per cent, wages shrink by 0.04 per cent and unemployment rises by 0.03 percentage points as a consequence of further immigration. For Spain, we obtain a slightly different picture: The scale of migration under the transitional arrangements and under the free movement is almost the same on the EU-15 level. However, the share of Spain in the overall inflows will decline if free movement is introduced according to our scenarios.

Table 5.11 Short-run effects of transitional arrangements and the free movement of workers from Bulgaria and Romania, 2008-2014

	Change of labour force	GDP	GDP per capita	Factor income per native	Unemployment	Wages
	Changes in per cent (unemployment rate: changes in percentage points)					
AT	0.41	0.28	-0.12	0.11	0.03	-0.02
BE	-0.08	-0.03	0.02	0.00	-0.02	0.01
DE	0.22	0.09	-0.06	-0.01	0.06	-0.06
DK	0.03	0.02	0.00	0.00	0.01	-0.01
ES	-0.59	-0.12	0.21	0.10	-0.16	0.12
FI	0.01	0.01	-0.01	0.00	0.00	0.00
FR	-0.04	-0.02	0.02	0.00	-0.01	0.00
GR	0.35	0.08	-0.15	-0.03	0.07	-0.09
IE	0.79	0.25	-0.16	-0.06	0.12	-0.24
IT	0.17	0.06	-0.05	0.00	0.03	-0.04
LU	0.04	0.03	-0.01	0.01	0.00	-0.01
NL	0.00	0.00	0.00	0.00	0.00	0.00
SE	0.02	0.01	-0.01	0.00	0.01	0.00
UK	0.02	0.01	0.00	0.00	0.00	0.00
BG	-0.68	-0.36	0.33	0.33	-0.21	0.17
RO	-0.24	-0.19	0.05	0.05	-0.03	0.04
EU-15[1)]	**0.03**	**0.03**	**0.00**	**0.01**	**0.00**	**-0.01**
NMS-2	**-0.36**	**-0.24**	**0.13**	**0.13**	**-0.08**	**0.07**
Total	**0.01**	**0.03**	**0.03**	**0.03**	**-0.01**	**-0.01**

1) Without Portugal.

Source: Own estimates and simulation, see text.

Altogether, the enlarged EU is a winner of the free movement of workers within the EU. The joint GDP rises by 0.03 per cent and the income of natives rises by 0.03 per cent relative to a scenario where the present immigration restrictions under the transitional arrangements are prolonged during the 2008–2014 period.

5.5 A multisectoral analysis of the labour market effects

The previous section has analysed the labour market effects and macroeconomic impact of migration under the transitional arrangements on basis of a structural model which distinguishes different segments of the labour markets, but is otherwise based on a one-sector economy. In this section we extent the analysis by employing a multi-sectoral computable general equilibrium (CGE) model for selected destination and sending countries. A multisectoral CGE framework has not only the advantage of enabling us to identify the impact of immigration on different sectors of the economy, but also to consider the interaction between immigration and trade. Note that the interaction between migration and trade may mitigate potential labour market effects of migration.

The model we employ here comprises 16 commodities, 16 domestic industries and reflects trade of intermediary and final goods as well as the movement of capital. Similarly to the model used in the previous section, it is assumed that labour markets are imperfect and that wages adjust to changes in the unemployment rate by a wage-setting curve. The same elasticities of the wage-setting curves as in the model of the previous section are used and we also assume the same speed of adjustment of physical capital as in the previous section. The details of the model and the assumptions regarding the parameters of the model are presented in the Background Report.

We consider Germany and the UK as destination countries, and Poland, Hungary, Slovakia and Slovenia as sending countries. The selection of countries which are considered here is particularly relevant. The UK is the country which has been in absolute terms mainly affected by the diversion of migration flows since enlargement, as it has almost completely removed the barriers for worker mobility vis-à-vis the new member states. In contrast, Germany still heavily restricts migration from the NMS, but has been the main destination for migration from there before enlargement in absolute terms. The four sending countries differ with respect to their size and the amount of migrants working abroad. Therefore, these countries are affected by the EU Eastern enlargement very differently. According to our estimates, more than 1.3 million migrants from Poland resided in the EU-15 in 2007, while only 632,000 Polish migrants would live there in the case without Enlargement. The difference accounts for almost two per cent of the Polish workforce. While Slovakia experiences a similar effect of EU Enlargement, the neighbouring country Slovenia is much less affected by emigration, as well as the medium sized Hungary.

As in the previous section, the effects of migration are analysed in two steps. In the first step we evaluate the effects of the impact of Eastern enlargement in the 2004-2007 period. As outlined in Section 5.3, we distinguish a status quo scenario, where the immigration policies before EU Eastern enlargement are maintained, while the Eastern enlargement scenario displays immigration policies since Eastern enlargement under the transitional arrangements. In the second step we analyse the potential impact of introducing the free movement of workers in the 2008-2011 period. There, we distinguish a scenario where the transitional arrangements for the free movement of workers are prolonged from a free movement scenario.

5.5.1 Key macroeconomic simulation results

Table 5.12 presents the macroeconomic impact of migration triggered by the EU Eastern enlargement during the 2004-2007 period. It compares the impact of migration from the NMS-8 under the EU's Eastern enlargement with the counterfactual scenario of migration under the pre-enlargement conditions. The sending countries experience a reduction in GDP and unemployment while wages increase. Per capita GDP in the EU enlargement scenario is therefore higher than in the counterfactual scenario without enlargement. In contrast, the GDP and unemployment rates of the receiving countries are higher and wages are lower in the scenario with EU enlargement than in the counterfactual scenario. The impact on GDP per capita is ambiguous. Moreover, migration complements trade: In the receiving countries exports and imports tend to increase more than proportional relative to GDP, while the converse holds true for the sending countries.

Table 5.12 Key macroeconomic effects of Eastern enlargement, 2004-2007

	Germany	UK	Hungary	Poland	Slovenia	Slovakia
			Changes in per cent			
GDP	0.06	0.86	-0.23	-0.92	0.17	-0.44
GDP per capita	-0.02	-0.03	0.18	0.81	-0.06	0.81
Exports Intra-EU	0.12	1.24	-0.21	-1.25	0.20	-0.26
Exports Extra-EU	0.12	1.09	-0.21	-1.24	0.20	-0.27
Imports Intra-EU	0.05	0.81	-0.25	-0.80	0.16	-0.54
Imports Extra-EU	0.05	0.89	-0.24	-0.81	0.16	-0.54
Wages	-0.02	-0.34	0.12	0.32	-0.05	0.34
			Changes in percentage points			
Unemployment rate	0.02	0.13	-0.08	-0.48	0.03	-0.45

Notes: The simulation results indicate the difference between the status-quo scenario and the counterfactual scenario of no enlargement.

Sources: Own estimates.

Altogether, the effects of migration on wages and unemployment are moderate in our simulations. The labour supply shocks are mitigated by the partial adjustment of the capital-output ratio and the redistribution of factors among sectors. Therefore, we observe that both labour and capital endowments increase in the destination countries. Analogously, capital stocks decline in the sending countries. As a second important effect, sectoral factor mobility assures that the new factor endowments are employed in those sectors where they are used most productively. Consequently, the sectoral structure of production changes in the course of the labour supply shocks (Table 5.13).

Table 5.13 Impact of Eastern enlargement on output by sector, 2004-2007

	Germany	UK	Hungary	Poland	Slovenia	Slovakia
			Changes in per cent			
Agriculture, hunting and forestry	0.10	0.70	-0.20	-0.80	0.10	-0.60
Fishing	0.00	0.50	-0.30	-0.90	0.20	-0.60
Mining and quarrying	0.00	0.40	-0.30	-1.00	0.20	-0.70
Manufacturing	0.10	1.10	-0.20	-1.00	0.20	-0.40
Electricity, gas and water supply	0.00	0.70	-0.20	-0.80	0.20	-0.60
Construction	0.10	0.70	-0.20	-0.80	0.20	-0.70
Wholesale and retail trade[1)]	0.00	0.90	-0.20	-0.90	0.20	-0.50
Hotels and restaurants	0.10	0.80	-0.30	-0.80	0.20	-0.70
Transport, storage and communication	0.00	0.80	-0.30	-0.90	0.20	-0.60
Financial intermediation	0.10	0.60	-0.20	-0.80	0.20	-0.60
Real estate, renting and business activities	0.10	0.60	-0.20	-0.80	0.20	-0.60
Public administration and defence; compulsory social security	0.10	0.90	-0.30	-0.90	0.20	-0.70
Education	0.10	0.90	-0.30	-0.90	0.20	-0.70
Health and social work	0.10	0.90	-0.30	-0.90	0.20	-0.70
Other community, social and personal service activities	0.10	0.70	-0.30	-0.90	0.20	-0.70
Activities of households[2)]	0.10			-0.70	0.20	
Total	**0.00**	**0.90**	**-0.20**	**-0.90**	**0.20**	**-0.60**

1) Includes also repair of motor vehicles, motorcycles and personal and household goods.
2) Blank fields indicate missing values in the I/O tables.

Sources: Own estimates.

Note that the simulation results displayed in Table 5.13 are very similar to those obtained by the structural model in the previous section, although the framework of the model has changed considerably. We therefore conclude that our results are pretty robust irrespective of the choice of the modelling framework.

5.5.2 Germany

The immigration from the NMS-8 into Germany has increased by a mere 62,000 person through Eastern enlargement compared to the pre-enlargement stats quo scenario. Hence, macroeconomic effects are small in Germany. If the participation rates of recent arrivals resemble those of their counterparts with a longer immigration history, EU Eastern enlargement has increased the labour force by 39,000 persons in Germany. This figure considers an employment rate of NMS-migrants in Germany of 63 per cent, which is slightly higher than the employment rate of natives.

This small increase in labour supply involves that the GDP increases by 0.06 per cent due to EU-Enlargement, and the immigration from Bulgaria and Romania adds no more than 0.01 per cent of GDP to this effect. While wages are shrinking by about 0.02 per cent, unemployment rises slightly by 0.02 percentage points. Thus, as expected, the impact of EU-Enlargement on migration can not be felt at the macroeconomic level in Germany.

Nevertheless, migration has some impact on the sectoral structure of the economy. The manufacturing sector producing tradable goods is affected by the labour supply shock more than proportionally, while all other sectors enhance their production only slightly. On average, sectors producing nontradable goods, like hotels and restaurants, public services, education, and administration gain from the enhanced labour force less than proportional. However, the effects of EU-Enlargement are even on the sectoral base relatively small, hence the aggregate gain in production is less than 0.05 per cent.

5.5.3 UK

In contrast to Germany, the opening of the labour market in the UK involves that EU Eastern enlargement has triggered an additional immigration of about 455,000 persons there. This corresponds to an increase in the UK labour force by 338,000 persons compared to the status quo scenario. The strong increase in the labour force is not only the result of the high immigration into the UK, but also of the participation of NMS immigrants in the labour force. Interestingly enough, the employment rate of NMS-2 migrants is even higher with 86 per cent. Both figures are even larger than the employment rate of natives and essentially larger than the employment rate of NMS-migrants in Germany.

Accordingly, the macroeconomic effects of migration are strong: The EU-Enlargement increases the GDP by 0.86 per cent in the UK, while immigration from the NMS-2 adds another 0.02 per cent to GDP there. As in Germany, immigration enhances exports. Nevertheless, imports are reacting less dynamic than exports; hence migration improves the trade balance.

Relative to the size of the labour supply shock, we find that unemployment is increasing only slightly by 0.13 percentage points and wages decline by 0.34 per cent.

5.5.4 Hungary

Hungary is less affected by emigration than other NMS-8 countries, since the compensation per employee was higher and unemployment lower there compared to the NMS-8 average. According to our scenarios, Eastern enlargement involved an additional emigration of 44,000 persons in Hungary, which corresponds to 0.44 per cent of the Hungarian labour force. The declining labour force reduces GDP and production slightly. The GDP declines by 0.23 per cent in the Eastern enlargement scenario compared to the status quo scenario. The partial adjustment of the capital output ratio leads to a decline in capital endowment; investment is consequently reduced in the simulation model. Nevertheless, the trade balance is improving. Exports and imports are moving closely among the same rate as GDP is shrinking, but the effect on exports is weaker than the effect on imports.

Furthermore, the reduced labour force does not lead to a strong reallocation of factors across sectors. Hence, production declines by only 0.2 per cent in the course of EU Eastern enlargement and almost all sectors reduce their production by the same amount. Consequently we do not observe a reallocation of production factors between the tradable and non-tradable sectors, which was already indicated by the close movement of exports and imports in Hungary.

5.5.5 Poland

In the first year following the EU Eastern enlargement, wages in Poland have been slightly below the NMS-8 average (28.8 per cent compared to 29.7 per cent) and the unemployment rate was at 19 per cent relatively high. Not surprisingly, Poland was more than proportionally affected by emigration: According to our scenario, Eastern enlargement triggers the emigration of an additional 666,000 persons compared to the counterfactual scenario.

This substantial emigration of Polish workers caused by the EU Eastern enlargement has resulted in a decline in GDP by 0.92 per cent. Trade is also heavily affected by the labour supply shock. The adjustment of the capital stock leads to a strong reduction in exports and to a smaller reduction in imports. This indicates that the labour supply shock involves adjustments of the capital balance. The outflow of labour triggers additional capital inflows, e.g. in form of remittances.

The tradable sectors are consequently more than proportionally affected by the reduced production in Poland. The production of the manufacturing sector declines by 1.0 per cent and by a similar amount in the mining and quarrying sector. In contrast, production is less than proportionally reduced in the service sectors.

Altogether, the emigration of workers increases wages by 0.32 per cent and reduces unemployment by 0.48 percentage points

5.5.6 Slovenia

Slovenia is the country with the highest per capita GDP level among the NMS-8 (58 per cent of the EU-25 average compared to 30 per cent in the NMS-8). Moreover, unemployment is at about 7 per cent rather low. According to our estimates, Eastern enlargement has involved declining instead of rising emigration from Slovenia into the EU-15: Emigration is reduced under Eastern enlargement compared to the status quo scenario.

Consequently, EU enlargement increases the GDP by 0.17 per cent in Slovenia. This slightly affects trade, small differences in imports occur. Extra-EU imports are reduced more than intra-EU exports in case of Eastern enlargement, but both are reduced to a lower extend than exports.

This small labour supply shock involves that all sectors are affected by the reduced production in the same way such that the sectoral structure of the economy remains largely unchanged. The shares of the tradable and non-tradable sectors do not change as well.

Wages decrease in Slovenia by 0.05 per cent and the unemployment rate rises by 0.03 percentage points.

5.5.7 Slovakia

Slovakia is a relatively small country heavily affected by emigration. At the outset of EU enlargement, the unemployment rate was relatively high at 17.6 per cent compared to the NMS-8 average, while the compensation per employee was at 23.2 per cent lower than in all other NMS-8 countries. We estimate that the EU Eastern enlargement triggers an emigration of an additional 66,000 persons from Slovakia, which is high compared to the small size of the country.

This emigration shock reduces the GDP in Slovakia by 0.44 per cent. Interestingly enough, the impact of the emigration shock in imports is twice as high as that on exports.

The overall level of production declines by 0.6 per cent. Manufacturing is less than proportionally affected, while the non-tradable sectors reduce production well above the average. Thus, the sectoral structure of the economy is heavily affected by the emigration shock in Slovakia.

5.6 The potential impact of introducing the free movement of workers

So far we have analysed the impact of the migration under the transitional arrangements in the course of the EU Eastern enlargement. In this Section we compare the effects of migration under the free movement with those of a prolongation of the transitional arrangements for workers from the NMS-8. As before, the free movement of workers

incolves two effects: First, the overall level of migration from the NMS-8 into the EU increases, and second, the geographical structure of the destination countries changes. As a consequence, Germany receives more immigrants from the NMS-8 under free movement compared to a prolongation of the transitional arrangements, while the UK receives less.

Table 5.14 Effects of free movement for the NMS-8 compared to a prolongation of the transitional arrangements, 2008-2011

	Germany	UK	Hungary	Poland	Slovenia	Slovakia
			Changes in per cent			
GDP	0.17	-0.20	-0.19	-0.01	-0.38	0.03
GDP per capita	-0.06	0.01	0.15	0.02	0.16	-0.08
Exports Intra-EU	0.33	-0.29	-0.17	-0.01	-0.45	0.01
Exports Extra-EU	0.32	-0.26	-0.17	-0.01	-0.45	0.01
Imports Intra-EU	0.12	-0.19	-0.20	0.00	-0.35	0.04
Imports Extra-EU	0.13	-0.21	-0.20	0.00	-0.36	0.04
Wages	-0.06	0.08	0.10	0.01	0.13	-0.03
			Changes in percentage points			
Unemployment rate	0.06	-0.03	-0.07	-0.01	-0.07	0.04

Notes: The simulation results indicate the difference between the status-quo scenario and the counterfactual scenario of no enlargement.

Sources: Own estimates.

Table 5.14 presents the difference in the effects of the free movement scenario with the scenario of a prolongation of the transitional arrangements. We find that the overall effects on GDP and the other macroeconomic aggregates are larger in the open-economy model presented here compared to the closed-economy model presented in Section 5.4. The stronger GDP effects in the German case can be traced back to an improvement in the balance of payments. Labour moves into the manufacturing sector there (+0.3 per cent) and consequently boosts exports. In contrast, the declining migration to the UK under free movement compared to the scenario where the transitional arrangements are prolonged reduces the GDP there. The manufacturing sector and the service sectors are particularly affected (-0.3 per cent).[27] Moreover, the share of the tradable sectors in production declines, which in turn worsens the balance of payments in the UK.

5.7 Conclusions

In this section we analysed the impact of migration in the enlarged EU on wages, employment and some macroeconomic aggregates on basis of two general equilibrium

[27] For a full sectoal breakdown for all six report countries see the Background Report on the macroeconomic impact of Eastern enlargement.

models. The labour market effects are derived from a wage setting framework which assumes that wages respond imperfectly to an increase in the unemployment rate. We find an average elasticity of the wage-setting curve of -0.13, which is slightly higher than that found by the average of regional level studies. In our view, the higher elasticity reflects the impact of centralised wage setting, which results in a higher elasticity of the wage-setting curve if it is measured at the national level. Another important figure which drives our results is the finding that capital stocks adjust to an increasing labour supply, although these adjustments take time. The speed of adjustment has been estimated and is considered in our simulations.

The simulation of the impact of migration from the NMS-8 and the NMS-2 provides a number of interesting insights. First, we observe that the additional migration from the NMS-8 caused by the EU's Eastern enlargement during the 2004-2007 period has increased the aggregate GDP of the enlarged EU by about 0.11per cent in the short-run and 0.20 per cent in the long-run, while the migration from the NMS-2 has increased the GDP of the enlarged EU by 0.11 in the short-run and by 0.28 per cent in the long-run during the same period of time. Second, we observe that the total factor income of natives in the destination countries tends to increase in the long-run, while it declines only slightly in the short-run. This can be traced back to the fact that complementary factor incomes tend to increase in case of migration. Third, we find that the unemployment rate is slightly increasing in the destination countries in the short-run, while it is falling in the sending countries. The long-run effects of migration on the aggregate unemployment rate are by and large neutral. Fourth, wages decline slightly in the receiving countries and increase in the sending countries in the short-run, while the long-run impact of migration on wages is largely neutral. Fifth, at the given skill structure of the migrant workforce in the LFS, workers with medium skills would be more than proportionally affected by increasing competition from the new member states compared to high skilled and less skilled workers. However, a huge share of migrants are employed below their qualification level. Therefore, we controled for the phenomenon of a 'brain waste' by classifying migrants according to their occupational breakdown.

An important caveat is crucial to highlight here. In Ireland and Spain, which are the countries mainly affected by immigration from the NMS-8 and the NMS-2, respectively, our simulations yield relatively large effects particulary with respect to unemployment and wages. However, the labour supply shocks in both countries have not resulted in visible changes of the unemployment rates there. It is thus likely that we tend to overstate the migration effects on these countries. There might be two explanations for this puzzle: First, capital stocks may adjust faster than predicted by our estimates. Second, the wage response might be larger than is expected by our estimates of the wage curve. As an example, Bentolila et al. (2007) argue that immigration itself has changed the bargaining position of workers, such that responsiveness of wages has increased through higher immigration. Thus, wages may decline even further, while the unemployment effects are smaller compared to our simulations.

The trade and sectoral effects of labour mobility have been addressed here within a CGE framework. As our results demonstrate, the economies of the countries involved respond in different ways to labour supply shocks: In Germany, exports are affected nearly twice as much from the migration shock than imports, while in the UK these differences are much smaller. This reflects different trade structures and different degrees of openness in the two main destinations of migrants from the NMS-8. Moreover, the different labour market participation rates of migrants in Germany and the UK lead to a rising GDP per capita in the UK and a shrinking one in Germany.

Differences also occur among sending countries: In Hungary and Slovenia the sectoral production structure deviates after the migration shock only slightly from the pre-enlargement structure, while we observe a strong sectoral reallocation of production factors in Poland and Slovakia. As an example, the production of the manufacturing sector in Poland is reduced by 1 per cent in the EU-Enlargement scenario while the hotels and restaurant service sector shrinks only by about 0.8 per cent there.

We have furthermore assessed the potential impact of introducing the free movement of workers from the NMS-8 and the NMS-2 countries in separate scenarios. For the NMS-8 countries there is only a two year period left during which the transitional arrangements can be prolonged, so that the free movement will eventually be introduced for these countries in 2011. However, the labour mobility of migrants from NMS-2 countries can be prohibited until 2014. We find that the two year prolongation for NMS-8 countries has only a moderate macroeconomic impact. On the one hand, Germany and Austria, i.e. the last countries who maintain immigration restrictions, are mainly affected by further immigration if the free movement is introduced. Their GDP will rise while wages decline and unemployment increases. However, these effects are extremely small. On the other hand, the UK and Ireland attract fewer immigrants if the free movement is introduced in the entire EU. This reduces their GDP, while wages tend to increase and unemployment tends to decline. Again, these effects are relatively small.

A similar picture emerges in the case of Bulgaria and Romania. Introducing the free movement for these countries will increase immigration from there particularly in Germany, while it will increase only slightly in Italy and decreases in Spain. The macroeconomic effects are straightforward: The GDP increases in Germany and Italy, while wages decline and unemployment rises slightly there in the free movement scenario compared to a scenario where the transitional arrangements are prolonged. A decline in GDP can be observed in Spain.

Altogether, our findings indicate that the enlarged EU will benefit from increased labour mobility by higher GDP and lower unemployment. The effects of migration on wages and unemployment are, however, modest in both the destination and the sending countries. The labour market effects of migration are mitigated both by the partial adjustment of capital stocks to labour supply shocks and by trade effects which foster the reallocation of factors between tradable and non-tradable sectors.

6 Brain Drain, Brain Gain and Brain Waste

The large scale migration from the NMS into the EU-15 involves also that the skill composition of the labour force changes in both the sending and the destination countries. Notwithstanding a rapidly growing scholar interest in the phenomenon of the 'brain drain', deeper insights on this issue with respect to the NMS are missing. The lack of in-depth analysis is nevertheless matched by a widespread agreement on the significant size of the outflow of highly skilled workers from the area (e.g. Balaz et al., 2004), and by the perception of its negative impact on human capital endowments in the sending countries, ensuing detrimental effects on economic growth there (see Radu 2003; Straubhaar and Wolburg, 1999; Wolburg, 1996; 1997; Salt and Findlay, 1989; Salt 1997; 2001). Similarly, although the immigration surge from NMS to the UK and Ireland is bringing this issue to the forefront, few studies carried out in receiving countries have focused on the impact of migrants from Central and Eastern European countries on the skill composition of the workforce.

The purpose of this chapter is to analyse the impact of migration in the context of EU enlargement on the skill composition of labour force both in the sending and receiving countries and to discuss the possible economic implications. We start with a presentation of the aggregate data on the skill composition of the migrant labour force from the NMS compared to natives in the sending countries drawing on data from the Labour Force Surveys conducted in the EU-15 countries (Chapter 6.1). We then analyse the self-selection of migrants between different destinations on basis of the recent experience in the UK and Germany (Chapter 6.2). Chapter 6.3 examines whether the emigration of skilled workers is to be perceived in terms of brain drain and discusses the question whether migration in the context of the EU Eastern enlargement has increased incentives to invest in human capital. Chapter 6.4 addresses the question of 'brain waste', i.e. whether and to what extent migrants from the NMS are employed below their educational levels. Chapter 6.5 concludes.

6.1 The skill composition of migrants from the NMS-10 in the EU-15

The analysis of the skill composition of migration flows out of the NMS represents a significant analytical challenge, as the countries of origin do not collect reliable administrative data on their emigrant population. Thus, we need to resort to data sources collected in the EU-15 countries in order to obtain information about the educational level of immigrants from the NMS. The periodical labour force surveys collected by EUROSTAT in the EU member countries represent the most comprehensive source ensuring the cross-country comparability of the data. We thus aggregated the data collected in the EU-15 countries by country of origin of the interviewees to obtain a breakup by skill level of the emigrant population from each of the NMS.[28] Hence, our approach to data collection

[28] We considered three possible skill-levels, defined with respect to the educational attainment: high, for individuals who have completed tertiary education; medium, for individuals with upper secondary education; low, for the remaining individuals.

draws on a similar approach adopted by Docquier and Marfouk (2005),[29] but it restricts the focus on migration flows towards EU-15 countries, and it provides updated figures referring to the post-accession period. Additionally, we also employed the labour force surveys collected in the NMS to have comparable figures on the skill-structure of the population in the countries of origin, which are reported in the first three data columns of Table 6.1.

Table 6.1 Skill composition of the native population in the NMS and of migrants from the NMS in the EU-15, 2006

	Resident population, natives			Migrant population			Migrant population, age adjusted		
Country	low	medium	high	low	medium	high	low	medium	high
Bulgaria	31.3	50.8	17.9	24.0	48.5	30.2	24.2	45.9	29.1
Czech Republic	16.7	72.1	11.2	14.8	48.8	36.4	19.3	48.3	34.9
Estonia	22.7	49.8	27.5	35.8	49.4	14.8	26.8	43.1	19.2
Hungary	27.6	57.4	15.0	9.0	38.7	35.4	9.3	66.2	23.9
Lithuania	21.3	56.1	22.6	25.9	38.7	35.4	22.1	39.3	39.8
Latvia	25.4	56.8	17.8	-	-	-	-	-	-
Poland	21.3	64.1	14.7	26.1	48.2	25.7	21.5	47.6	26.8
Romania	33.0	57.5	9.6	33.2	53.3	13.5	33.2	53.1	13.6
Slovenia	23.4	58.8	17.8	34.4	59.2	6.4	33.2	60.0	6.6
Slovak Republic	19.2	69.1	11.7	18.2	62.6	19.2	17.3	63.3	21.3

Note: the age adjusted selection rates are computed applying the age distribution of the resident population to migrants' age-specific skill composition.

Source: Own Calculations based on Eurostat Labour Force Survey.

Table 6.1 shows that – not differently from the resident population – the majority of emigrants from the NMS who resided in the EU-15 in the year 2006 belongs to the medium skill group. The share of highly educated individuals among the pool of migrants is higher than the corresponding share in the resident population for seven out of ten countries. Clearly, a comparison of figures referring to the skill composition of the resident and of the migrant population is biased by the different demographic structures of the two groups: If, which is most likely to be the case, younger cohorts of the population have an education above the population average, then the comparison of the skill structures of the two groups tends to overestimate the extent of migration of skilled individuals as younger people have a higher propensity to migrate. To remove this bias, in the last three data columns of Table 6.1 we report the skill composition of the migrant population, if it had the same age structure as the resident population in the countries of origin. This adjustment does not significantly influence the overall picture.

The limited impact of the age adjustment offers us the chance to stress that – not differently from Docquier and Marfouk (2005) – our data are stock data, as the

[29] Docquier and Marfouk (2005) offer the most widely-used and comprehensive data source on the skill composition of the pool of emigrants from each country of origin, that has been built through the aggregation of census data – that refer to the year 2000 - on immigrants on the countries of destination.

EUROSTAT labour force surveys capture the immigrant populations at a given point in time, irrespective of the time elapsed since migration. As most of the NMS had long-standing migrant communities even prior to the EU Eastern enlargement, the data reported in Table 6.1 is a blend of these past flows and of the more recent migration waves.

With these caveats in mind, we can state that the general picture emerging from the LFS data is that migrants from the NMS countries are slightly positively self-selected with regard to their skill levels, but that we cannot observe the significant drain of skilled people from the NMS that is often portrayed in the media.

6.2 The self-selection of migrants between different destinations

The aggregate figures on the skill composition of migrants from the NMS in the EU-15 presented in the previous section hide significant differences across destination countries. The Background Report provides detailed evidence with respect to Polish migration into the EU (see also Kaczmarczyk and Okólski, 2008), which compares the skill composition of Polish migrants to Germany and the United Kingdom before and after accession with the skill composition of the native workforce in Poland based on various waves of the national labour force surveys. Germany had been hosting a large Polish community for decades prior to 2004, while the United Kingdom experienced only a limited inflow of Polish people prior to that date.

We find that post-accession migrants to Germany have been negatively selected with respect to education – to an even greater extent than earlier migrants, while the United Kingdom experienced an opposite pattern, as the Polish migrants who arrived in the country after 2004 happened to be significantly positively selected with respect to education (Kaczmarczyk and Okólski, 2008, Background Report).

While the selective application of immigration restrictions during the transitional periods for the free movement of workers can help to understand the diversion of migration flows from Germany to the United Kingdom, it fails to explain the widely differing pattern of migrant self-selection in the two countries. The literature on migrant self-selection (e.g. Borjas, 1987) suggests that the different skill structure of migrants in the UK and Germany can be explained by the greater wage dispersion characterising the British labour market compared to the German one. But this argument is considerably weakened by the evidence about the poor returns to education that migrants from the NMS receive in the United Kingdom (see Section 6.4).

More convincing is to explain the observed difference in the skill structure of Polish migrants in the UK and Germany by the role of migration networks. McKenzie and Rapoport (2008) provide theoretical and empirical evidence suggesting that larger migration networks tend to increase the likelihood – or the extent – of a negative self-

selection of migrants with respect to education.[30] Such an effect arises because larger migration networks reduce the direct and indirect cost of mobility for potential migrants (see also Carrington et al., 1996 on this point), and this reduces the migration costs for low-skilled individuals more than proportional. As an example, existing migrant communities reduce migration costs as they help new migrants to find a job at destination – thus reducing the length of the initial spell of unemployment –, they can initially offer shelter and financial support, and they reduce the psychological costs of migration as they ensure the supply of so-called "ethnic goods", which range from food, to music and newspapers in the mother tongue of the migrants.[31] Thus, since large networks of migrants from Poland and other NMS countries have been established in Germany long before accession whereas immigration to the United Kingdom is a relatively recent phenomenon, it is likely that the existing Polish community in Germany attracted additional unskilled migrants, while only better educated individuals were able to afford the costs – and the risks – associated with a migration to the United Kingdom.

6.3 Between brain drain and brain gain

The analysis presented in Section 6.1 suggests that regardless of the methodological issues and the uncertainty as to the real scale of the phenomenon, most of the data indicates that there is a positive selection of emigrants from the NMS with regard to education. Additionally, it was argued that emigration from the NMS is likely to have only a very limited impact on the relative endowments of human capital in the countries of origin. The recent literature on the 'brain drain' questions the proposition of the traditional brain drain literature that the emigration of skilled workers necessarily reduces human capital endowments and, hence, growth prospects in the sending countries (e.g. Beine et al., 2001; Mountford, 1997; Stark et al., 1997). The opportunity to migrate can increase human capital endowments in the sending country, because, so the reasoning goes, "higher prospective returns to skills in a foreign country impinge on skill acquisition decisions at home" (Stark et al., 1997). To assess the impact of post-accession mobility on the sending countries we will follow the line of reasoning of Beine et al. (2001) and analyse the consequences of the highly skilled mobility in a static (drain effect) and dynamic (brain effect) framework.

6.3.1 Is there a drain of highly skilled from the NMS?

A massive outflow of migrants — as has been observed in some of the NMS — may have a significant impact on the labour market in sending countries. Consequences of out-

[30] In a companion paper, McKenzie and Rapoport (2007) develop a similar argument about self-selection with respect to economic conditions, and they argue that "*only the middle class of the wealth distribution may have both the means and the incentives to migrate*" in the early stage of migration process.

[31] Note that these effects become even more sizeable when the fixed costs of migration are decreasing and less differentiated across destination countries, as it has been argued in the first chapter of this report.

migration include an eventual decline in unemployment, labour shortages and a corresponding pressure on wages.

A descriptive analysis of the NMS labour market data seems to support these hypotheses. Unemployment rates in most NMS are dropping rapidly since May 2004. In case of Poland, between the 2nd quarter of 2004 and the 1st quarter of 2007 the number of unemployed individuals decreased from 3.1 million to 1.5 million and the unemployment rate fell below 10 per cent, compared with as much as 20 per cent in 2002 (Kaczmarczyk and Okólski, 2008). Simultaneously, the number of vacancies is rising rapidly. Between 2005 and 2007 the average job vacancy rate in the region increased by around 60 per cent. The highest increases were noted in the Baltic States (e.g. in Lithuania vacancy rate more than tripled over given time period), in the Czech Republic (100 per cent increase) and in Poland (100 per cent increase). At the same time the number of companies reporting hiring difficulties was on the rise. In countries which are mostly affected by shortage of labour (the Baltic states, the Czech Republic, Poland, Romania and Hungary) major concern became skill shortages reported as an important obstacle by 35 to 50 per cent of all companies. The shortage of workers became particularly severe in construction and in manufacturing (World Bank, 2007).

In case of Poland, the number of vacancies increased rapidly from 2005 until the third quarter of 2007. Simultaneously, the number of companies experiencing labour shortages as a barrier of growth raised from almost zero per cent (2005), to over 14 per cent in the late 2007. The shortages of workers were the most apparent in construction (with 35 per cent of firms affected) and manufacturing (more than 15 per cent). Throughout 2007, labour shortages were declared as the most important barrier of growth. Regarding level of skills of demanded workers, the labour shortages are comprised mainly of qualified workers (albeit not necessarily highly-qualified) – in 2007/2008 lack of qualified workers was reported by almost 40 per cent of Polish companies. The distribution of qualification shortages varies between sectors - the largest share of firms seeking unqualified labour may be found in the services sector (NBP, 2008).

The question is then to what extent described phenomena should be linked to the post-2004 outflow. Recent studies show that changes on the NMS labour markets can be attributed to a complex set of factors. The impact of emigration on unemployment, shortages and wages, if it exists, is not substantial. Bukowski et al. (2008) conclude that the factor with the highest impact on the level of unemployment is the process of job creation (level of employment). In order to evaluate the effect of migration on the Polish labour market, Budnik (2007) compared the observed migration scenario against a counterfactual one (no massive outflow) and find that although the outflow of workers in the post-accession period was massive in scale, it did not have a substantial impact on the steady-state shares of individuals of different labour market status. These observations are in line with conclusions provided by the World Bank report (2007) saying that the primary cause of labour market developments in the NMS was an increase in labour demand and other factors (including migration) played secondary role only. Recent data seem to prove this thesis: as the phase of the business cycle changed and

the Polish economy started slowing down (in 2008) labour shortages ceased to pose a serious problem for most of the firms. This means that the labour shortages observed on the Polish labour market were, primarily, due to a favourable economic climate, and the impact of emigration was less important. In case of other countries, particularly the Baltic States, the outflow may have a significantly larger impact but statistical evidence is still missing.

Even if the impact of mobility on labour markets in the region is largely exaggerated and there is no clear evidence of the brain drain on national levels, there is a common perception that effects of migration are clearly visible on the sectoral level. Sectors possibly affected include particularly health care, particularly due to the fact that there are strong pull factors to encourage migration among medical professionals from the NMS. Indeed, a set of studies completed prior to the EU-enlargement showed a very high migration potential among health care workers (Andres, Kallaste, Priinits, 2004, Aidis, Krupickaitè, Blinstrubaitè, 2005). Data on the mobility of medical professionals from the NMS is rather limited, but available data sources do not indicate dramatically high level of migration. For instance, in the case of Poland some indication of the scale of potential migration of medical professionals is provided by the numbers of certificates confirming qualifications and professional experience required by employers in Western European states issued to Polish medical professionals. The number of issued certificates (6,724 as of the end of December 2007) amounted to 5.7 per cent of the total number of medical doctors in Poland. In the case of dentists, certificates were issued to 1,924 persons (6.3 per cent of the total). For semi-skilled medical staff, around 9,300 certificates were issued to nurses and midwives, which represents 0.3 per cent of this professional group in Poland. The data presented show that the scale of the outflow is not large enough to pose a threat to the healthcare system in the short-term. In fact, to some extent migration of medical specialists may be viewed as another example of overflow rather than a drain of workers.

6.3.2 Increasing human capital investment in the NMS

In this report we cannot examine the question whether the increasing opportunities to migrate in the context of the EU Eastern enlargement have resulted in higher human capital investment. Instead we provide descriptive evidence on the development of human capital endowments in the NMS and discuss on this basis whether EU enlargement has contributed to additional human capital investments there.

Table 6.2 displays the percentage of the population aged between 25 and 64 that has at least completed upper secondary education. The data are drawn from the EUROSTAT LFS. Two distinct features are striking: First, in all NMS countries this per centage is higher than the corresponding average figure for the EU-15 countries; second, the share of medium and highly skilled individuals is continuously increasing in all NMS countries from 2000 to 2007. Thus, the observed difference in the share of individuals which has at least completed upper secondary education is not simply a heritage of mass education of the

communist regimes in the past, but also the result of increasing investment in education which can be observed in all NMS since the begin of transition.

Table 6.2 Percentage of the population aged 25 to 64 having completed at least upper secondary education, 2000-2007

Country	2000	2001	2002	2003	2004	2005	2006	2007
EU-15	61.5	61.5	62.4	63.9	65.2	66.2	66.7	67.5
NMS10	79.4	79.7	80.7	82.1	83.1	84.2	-	-
Bulgaria	67.5	71	71.6	71.2	71.7	72.5	75.5	77.4
Czech Republic	86.1	86.3	87.9	88.5	89.1	89.9	90.3	90.5
Estonia	86.1	87.1	87.6	88.5	88.9	89.1	88.5	89.1
Latvia	83.2	79.6	82.2	83.2	84.6	84.5	84.5	85.0
Lithuania	84.2	84.2	84.9	86.1	86.6	87.6	88.3	88.9
Hungary	69.4	70.0	71.4	74.1	75.3	76.4	78.1	79.2
Poland	79.9	80.2	80.9	82.3	83.6	84.8	85.8	86.3
Romania	69.3	70.6	71.1	70.5	71.5	73.1	74.2	75.0
Slovenia	75.3	75.8	77.0	78.1	79.7	80.3	81.6	81.8
Slovakia	83.8	85.1	86.0	86.7	87.0	87.9	88.8	89.1

Source: Own elaboration based on Eurostat data.

Such a trend in the skill composition of the working age population in the NMS has been driven by an underlying steady increase in the numbers of students enrolled in institutions providing tertiary education: As Table 6.3 shows, the numbers of tertiary students have undergone a steep increase between 2000 and 2006 - with the only exception of Bulgaria. The pace of tertiary education enrolment cannot be explained by demographic factors and is well above that observed in other countries of the European Union.

Hence, Table 6.2 and Table 6.3 suggest that even an underestimation of the degree of positive self selection of recent migrants would not reverse the argument that post-accession migration flows are unlikely to significantly alter the relative factor endowments of the NMS. The observed increase in the number of tertiary students has been so large that the domestic supply of skilled workers is not endangered by the current process of migration.

Table 6.3 Trends in the number of students (ISCED 5-6) relative to 2000, EU-25 and NMS

Country	2000	2001	2002	2003	2004	2005	2006
EU-25	100.00	103.49	107.38	111.05	113.89	115.43	116.42
Bulgaria	100.00	94.53	87.41	88.21	87.45	91.04	93.19
Czech Republic	100.00	102.48	112.14	113.13	125.70	132.56	132.99
Estonia	100.00	107.84	113.06	118.66	122.57	126.49	127.43
Latvia	100.00	112.72	121.16	130.37	140.02	143.31	143.75
Lithuania	100.00	111.48	122.07	137.49	149.88	160.30	163.17
Hungary	100.00	107.62	115.40	127.16	137.48	141.97	142.85
Poland	100.00	112.37	120.68	125.56	129.42	134.09	135.84
Romania	100.00	117.81	128.63	142.27	151.50	163.23	184.49
Slovenia	100.00	109.19	118.38	121.12	124.58	133.89	136.99
Slovakia	100.00	105.89	111.99	116.34	121.19	133.48	145.62

Notes: The international Standard Classification of Education (ISCED) is commonly used in order to compare education data between countries; level 5 refers to the first stage of tertiary education, and level 6 to the second stage of tertiary education.

Source: Own elaboration based on Eurostat data.

Table 6.4 adds further evidence to this argument: It shows that – with the exceptions of the Czech Republic, Bulgaria, and Lithuania – the unemployment rates for young workers with a tertiary degree are broadly in line with the average across the EU-15 countries. This suggests that recent migration flows – that could have nevertheless favoured the reduction in the unemployment rate for young high-skilled workers observed in some NMS – are unlikely to trigger significant skill shortages.

Table 6.4 Unemployment rates in the NMS, individuals aged 15-39 with tertiary education, 2000-2007

Country	2000	2001	2002	2003	2004	2005	2006	2007
EU-15	6.1	5.3	6.0	6.1	6.3	6.3	5.7	5.1
Bulgaria	7.9	9.5	10.3	8.6	7.4	5.2	4.5	2.8
Czech Rep.	3.8	4.0	2.3	3.2	2.3	2.9	3.0	2.0
Estonia	-	8.8	-	-	8.3	-	-	-
Latvia	7.6	-	7.7	4.5	-	4.1	-	3.5
Lithuania	11	8.4	8.3	5.6	7.2	4.7	-	2.4
Hungary	2.0	1.4	2.5	1.8	3.1	3.6	3.9	4.1
Poland	7.7	9.0	9.4	9.7	10.1	9.6	7.9	6.1
Romania	5.6	5.5	5.3	4.4	4.7	5.8	5.6	3.9
Slovenia	3.2	2.8	3.9	4.9	4.0	4.6	4.9	4.6
Slovakia	7.3	8.0	5.2	5.9	8.4	6.3	4.4	5.8

Notes: If the survey for the second quarter was not available, we employed a different quarter.

Source: Own elaboration based on Eurostat data.

We thus observe not only relatively high human capital endowments in the NMS, but also a further increase in the share of medium and highly skilled individuals and a boost in

tertiary education enrolment in the NMS. Whether the opening of EU labour markets for migrants from the NMS has fostered these additional human capital investments is an open question. Egger and Felbermayr (2007) have recently argued that migration opportunities reduce the incentives to invest in human capital if the relative returns to investment in human capital are in the receiving countries below those of the sending countries and vice versa. Since we still observe a higher wage compression in the NMS compared to the destination countries in the EU-15 (see Chapter 3), the opening of EU labour markets may have increased the incentives to invest in human capital. However, as the next section demonstrates, the returns to human capital in the EU-15 are extremely low for migrants from the NMS. This would excert a detrimental impact on the incentives to invest in education. However, as Bertoli and Brücker (2008) have recently demonstrated, migration may still create additional incentives for human capital investment even if the relative returns to human capital in the receiving countries are below those of the sending countries. Still, it is fair to say that it is probably too early to discern how migration is influencing educational choices in the NMS, although the relevance of some factors – as the increased student mobility out of these countries – should not be underestimated. This is clearly an important area for future research.

6.4 Brain waste

There is a widespread concern that migrants from the NMS are employed in occupations which require skills well below the education level of migrants from the NMS such that human capital acquired in the home countries is wasted. In this section we analyse this question in some detail for the most affected destination country for migrants from the NMS-8 since accession, the UK. Dustmann et al. (2007) show that despite being better educated than natives, new immigrants to the UK - at least in the period 1996–2005 - tend to downgrade to less-skilled occupations upon arrival, and Drinkwater et al. (2006) confirm this finding. They argue that "*the majority of post-enlargement migrants from accession countries have found employment in low-paying jobs*".

In this section we measure the extent to which recent migrants are employed in jobs below their education level. The data are taken from the UK Quarterly Labour Force Survey from the 4th quarter 1993 to the 4th quarter 2007. We are of course particularly interested in the years since the NMS-8 joined the EU, i.e. 2004–2007. We compare the occupational structure of similarly educated migrants and natives. We classify education by the age when the individual left full-time education, grouped into bands corresponding loosely to ages when significant qualifications are received in the UK education system, namely the age of 16, 18 and 21 years.[32]

[32] Occupations are classified using the SOC-2000 major groups.

Table 6.5 Distribution of occupation by education: UK-born workers

	Age left full-time education				
Occupation	less than 16	16 or 17	18, 19 or 20	more than 20	Total
Managers and senior officials	9.01	13.12	19.07	19.79	14.33
Professionals	2.40	4.70	11.14	44.5	11.58
Associate professional and tech.	5.60	10.79	18.66	18.38	12.25
Admin and secretarial	12.93	19.02	20.76	7.91	16.33
Skilled trades	13.41	11.95	4.60	1.51	9.38
Personal services	12.88	10.68	10.38	2.95	9.86
Sales and customer services	8.82	8.69	7.64	2.88	7.62
Process, plant and machine oper.	16.23	10.37	3.13	0.87	8.85
Elementary occupations	18.71	10.67	4.62	1.21	9.80

Source: UK Quarterly Labour Force Survey 1993Q4-2007Q4

The descriptive evidence is quite striking. Table 6.5 shows the distribution of occupations across educational groups for workers born in the UK. Nearly 80 per cent of workers who left full-time education after the age of 21 (most of whom will have a degree) are employed in managerial, professional or associate professional occupations. In contrast, nearly 80 per cent of workers who left school before the age of 16 are in non-managerial and non-professional occupations.

Table 6.6 Distribution of occupation by education: pre-2004 migrants from the NMS

	Age left full-time education				
Occupation	less than 16	16 or 17	18, 19 or 20	more than 20	Total
Managers and senior officials	8.33	4.62	8.71	13.21	10.29
Professionals	2.78	4.62	5.41	30.38	16.59
Associate professional and tech.	5.56	5.38	8.71	10.75	9.08
Admin and secretarial	8.33	10.77	13.88	11.32	12.01
Skilled trades	8.33	18.46	8.94	3.96	7.69
Personal services	5.56	7.69	18.82	8.87	12.19
Sales and customer services	6.94	10.77	9.41	5.47	7.61
Process, plant and machine oper.	27.78	12.31	7.53	6.04	8.64
Elementary occupations	26.39	25.38	18.59	10.00	15.90

Source: UK Quarterly Labour Force Survey 1993Q4-2007Q4

A higher proportion of migrants from the NMS who arrived before 2004 are in less-skilled (and lower-paying) occupations, and this is the case across all education groups (see Table 6.6). But much greater differences are displayed in Table 6.7, which presents the occupational patterns for the migrants from the NMS which arrived after 2004. A remarkable 36 per cent of these migrants who left full-time education after an age of 21 are employed in elementary occupations, compared to 1 per cent of natives with a similar education level.

Table 6.7 Distribution of occupation by education: post-2004 migrants from the NMS

	Age left full-time education				
Occupation	less than 16	16 or 17	18, 19 or 20	more than 20	Total
Managers and senior officials	0.00	0.85	0.74	2.77	1.43
Professionals	0.00	0.00	0.18	8.31	2.96
Associate professional and tech.	0.00	0.00	2.03	7.20	3.54
Admin and secretarial	3.85	0.00	3.33	4.99	3.54
Skilled trades	19.23	16.10	9.80	8.86	10.42
Personal services	0.00	5.08	8.32	12.47	9.18
Sales and customer services	3.85	0.85	1.85	2.22	1.91
Process, plant and machine oper.	15.38	33.05	24.03	17.17	22.47
Elementary occupations	57.69	44.07	49.72	36.01	44.55

Source: UK Quarterly Labour Force Survey 1993Q4-2007Q4

Although descriptive statistics already convey evidence that supports the widespread concern about the labour market performance of migrants from the NMS in destination countries, we pursue the analysis one step further: We estimate the return to education that migrants from the NMS receive in the UK. Using the same data source, we employ all observations where a respondent's labour market status is "employee" and where information on hourly wages is available.[33]

The basic model we estimate is:

$$\ln w_i = \beta_0 + \boldsymbol{\beta}_F \mathbf{F}_i + \boldsymbol{\beta}_{Fl}(\mathbf{F} \cdot l)_i + \beta_e e_i + \boldsymbol{\beta}_{Fe}(\mathbf{F} \cdot e)_i + \boldsymbol{\beta}_x \mathbf{x}_i + \tau_t + \varepsilon_i \qquad (6.1)$$

where the dependent variable is log hourly wages. The vector $\mathbf{F}_i$ contains a dummy variable for each migrant group. In the simplest case, $\mathbf{F}_i$ would simply be 1 for a person born outside the UK, and 0 otherwise. Here we distinguish five groups of employees in the UK: UK-born, born in the NMS and arrived before 2004, born in the NMS and arrived after 2004, born in another EU-15 country or Cyprus or Malta, and born in any other country.

The variable *l* measures the number of years since arrival in the United Kingdom, and it takes the value of zero for UK-born workers. The variable *e* measures years of education measured as the age left full-time education minus five.[34] The vector $\mathbf{x}_i$ contains other characteristics of individuals. At present, the only characteristics included are age, sex and region of residence. There are numerous other controls that one could include in a Mincerian wage equation of this sort which is estimated here. Without doubt, occupation

[33] We drop outliers on hourly pay (top and bottom 1 per cent), and we drop observations with missing information on year of arrival in the UK and years of education, and those referring to individuals who are still in the educational system. The resulting sample has approximately 750,000 observations on 575,000 individuals (because from 1998 onwards about 175,000 individuals are interviewed twice).

and industry have an impact on wages. But if the lower returns of migrants to human capital are the result of working in industries or occupations with low-skill requirements then we are in danger of "controlling away" the causes of the low returns to education. Finally, τ_t is a calendar time effect measured by year and quarter dummies.

The basic hypothesis is that $\boldsymbol{\beta}_{Fe} < 0$ because the returns to education are smaller for foreign-born workers. In addition, this equation allows us to see whether there is a "catch-up" in terms of wages as the length of time in the UK increases. An additional interaction term of the form $(\mathbf{F} \cdot e \cdot l)_i$ would also allow us to see if there was a "catch-up" in terms of returns to education. For example, if migrants initially start in a low-skilled job regardless of their education then $\boldsymbol{\beta}_{Fe} < 0$ when *l* is low. As the length of stay increases they may find better jobs and $\boldsymbol{\beta}_{Fe}$ might rise.

The estimation results are reported in Table 6.8. The first column reports basic wage differences between migrants and natives without considering returns to education. Migrants from the NMS who arrived before 2004 earn, on average, 26.5 per cent less than natives. The interaction term for this group with the length of stay is positive and significant, but small, suggesting that a "catch-up" to the income levels of natives occurs only after long periods of time if at all.

[34] Note that this may be problematic, since children in Eastern Europe typically start their formal education at the age of seven.

Table 6.8 Returns to education, migrants and natives

	Model 1	Model 2	Model 3	Model 4
F				
Born in NMS, arrived before 2004 (NMS)	-0.2652***	-0.0264	0.1658*	0.1478*
	(0.0195)	(0.0623)	(0.0838)	(0.0709)
Born in NMS, arrived after 2004 (new NMS)	-0.4249***	0.3336***	0.1778	0.0269
	(0.0259)	(0.0701)	(0.1211)	(0.1024)
Born in EU15 (EU15)	0.0229**	0.0997***	0.3122***	0.2540***
	(0.0079)	(0.0203)	(0.0281)	(0.0238)
Born in rest of world (RoW)	-0.1467***	0.1400***	0.2928***	0.1432***
	(0.0045)	(0.0112)	(0.0169)	(0.0143)
F·l				
Length of stay (NMS)	0.0083***	0.0077***	-0.0036	-0.0047
	(0.0009)	(0.0009)	(0.0034)	(0.0029)
Length of stay (new NMS)	0.0165	0.017	0.1369	0.1382*
	(0.0163)	(0.0149)	(0.0773)	(0.0654)
Length of stay (EU15)	-0.0005	0.0032***	-0.0078***	-0.0065***
	(0.0003)	(0.0003)	(0.0010)	(0.0009)
Length of stay (RoW)	0.0044***	0.0050***	-0.0028***	-0.0031***
	(0.0002)	(0.0002)	(0.0007)	(0.0006)
E				
Years of education		0.0802***	0.0802***	0.0338***
		(0.0002)	(0.0002)	(0.0002)
F·e				
Years of education (NMS)		-0.0283***	-0.0413***	-0.0234***
		(0.0037)	(0.0053)	(0.0045)
Years of education (new NMS)		-0.0598***	-0.0492***	-0.0172*
		(0.0045)	(0.0081)	(0.0068)
Years of education (EU15)		-0.0192***	-0.0336***	-0.0220***
		(0.0012)	(0.0018)	(0.0015)
Years of education (RoW)		-0.0300***	-0.0405***	-0.0205***
		(0.0007)	(0.0011)	(0.0009)
F·e·l				
Years of education*length of stay (NMS)			0.0008***	0.0006**
			(0.0002)	(0.0002)
Years of education* length of stay (new NMS)			-0.0081	-0.0085
			(0.0051)	(0.0043)
Years of education* length of stay (EU15)			0.0008***	0.0006***
			(0.0001)	(0.0001)
Years of education* length of stay (RoW)			0.0006***	0.0004***
			(0.0000)	(0.0000)
Gender dummy	1	1	1	1
Age dummies	11	11	11	11
Region dummies	19	19	19	19
Time dummies	17	17	17	17
Occupation dummies				8
Industry dummies				18
R^2	0.244	0.3702	0.3704	0.5502
N	748,882	748,882	748,882	748,333

Note: standard errors in parenthesis; ***, ** and * denote significance at 1, 5 and 10 per cent, respectively.

Source: UK Quarterly Labour Force Survey 1993Q4-2007Q4

Recent migrants from the NMS experience an even larger wage gap: They earn on average 42.5 per cent less than natives. The coefficient on length of stay for this group is poorly identified presumably because there is insufficient variation in the data due to the short time period which has expired since 2004. In contrast, migrants from the EU-15

and Cyprus and Malta earn a small wage premium of 2.3 per cent. Migrants from the rest of the world have a smaller wage gap (-14.7 per cent) but an equally long "catch-up" period as the pre-2004 NMS migrants.

The second column estimates the wage equation which controls for human capital characteristics and includes measures of returns to education split by migrant group. Returns to education for natives are estimated to be 8 per cent. Returns to education for all migrant groups are significantly smaller. Interestingly, the largest effect is estimated for post-2004 migrants whose return to education is only 2 per cent. This is consistent with returns to education estimated for Polish migrants by Drinkwater et al. (2006).

Finally, in column 3 we also introduce interactions between education and the length of stay. A positive coefficient here indicates that a particular migrant group's return to education increases with length of stay. We find small but significant effects for all migrant groups *except* recent NMS migrants. So, for example, a migrant from the NMS who arrived before 2004 is estimated to have a return to education of 4 per cent upon arrival, but this would rise to about 4.7 per cent 10 years after arrival. Again, the short period of time that new NMS migrants have been in the UK implies that the interaction term for these migrants is poorly identified.

There are a number of reasons why returns to education might be lower for migrants. One possibility is that their choice of occupation and industry leads to low-skill jobs which do not reward human capital. If this were the case, the inclusion of controls for occupation and industry should reduce the negative coefficient of $\boldsymbol{\beta}_{Fe}$. In column 4 we add these controls. Their inclusion significantly reduces the overall rate of return to education for natives and migrants, but the gap between natives' and migrants' returns to education remains significant. Now, however, the gap between natives' and migrants' returns to education no longer differs significantly between migrant groups, suggesting that the larger gap for new NMS migrants found in previous specifications and emerging from descriptive statistics is the result of differences across occupation and industries.[35]

The poor returns to human capital that recent migrants from the NMS receive in the United Kingdom according to our estimates may cast doubts on the economic profitability of migration itself. Still, there are two important objections against this conclusion: First, as Grogger and Hanson (2008) have recently argued, migration decisions are driven by considerations about the absolute difference in wage levels across countries, rather than by the relative returns to skill, as the seminal contribution by Borjas (1987) assumes. This entails that the wage of, say, a Polish mechanical engineer employed in a cafeteria in London could be substantially higher than the wage he would have earned in a job more suited to his or her own qualifications in Warsaw. Although this would possibly represent a waste of his human capital, it could still be individually rational, as it could

[35] A second possibility is that, even within an occupation or industry, education is less well-rewarded for migrants, perhaps because of discrimination or because they have genuinely lower productivity for a given level of education, for example due to lower language skills.

form part of an inter-temporal strategy of the migrant who wants to accumulate savings with a foreign low-skilled job, and then invest it at home e.g. to establish a business.[36]

The second point is related to this latter observation. Hazans (2007) has recently demonstrated that Latvian return migrants command a sizeable wage premium once they return to Latvia. Controlling for potential confounders, return migrants earn a wage that is about 15 per cent higher than that of other Latvian workers. This result is particularly surprising if we consider that migrants are occupied in foreign countries below their education levels, i.e. that they fail to acquire education-specific work experience. However, migrants may acquire other forms of human capital in foreign countries relevant for the labour market such as foreign languages. Moreover, migrants might be positively self-selected with regard to unobservable skill such that a past migration experience also provides a valuable signal to domestic employers which will be rewarded in the labour market.

6.5 Conclusions

The main findings of this chapter can be summarised as follows: First, we find that migrants from the NMS are positively self-selected if we compare average education levels of the migrants with those of natives in the sending countries. However, this positive selection bias is moderate; the overwhelming majority of migrants and natives concentrate at the medium skill levels. Second, there is no strong statistical evidence of drainage of the highly skilled from the NMS, although brain drain effects may be of some relevance in the Baltic countries. Third, increased migration from the NMS is accompanied by increasing investment in education. Particularly investment in tertiary education has substantially increased during the last decade. Whether improved migration opportunities have contributed to these increasing human capital investment in Central and Eastern Europe is however an open question. Fourth, we observe that migrants from the NMS are employed well below their education levels in the EU-15. As our analysis of the 'brain waste' in the UK demonstrates, the returns to human capital investments are pretty low. However, this does not necessarily imply that migration results in a brain waste if we consider the entire life cycle. Additional human capital may be acquired abroad such as language skills, which will display their returns later in the domestic labour market. Altogether, our findings suggest that neither the 'brain drain' nor the 'brain gain' will have a considerable impact on labour markets and the economies in the sending and the destination countries.

[36] Note that the legal validation of the qualifications obtained in another country is often a costly and time-consuming process, such that validation does not represent a profitable choice if migration episodes are short.

7 The impact on the welfare state

The purpose of this chapter is to examine whether and to what extent migrants from the NMS will affect the welfare state in the destination countries. Our analysis draws on data collected by the European Survey on Income and Living Conditions (EU-SILC) between 2004 and 2006, which is in our view the only data source which allows a comprehensive cross-country analysis in Europe. Regrettably, the EU-SILC does not disclose – for confidentiality reasons – the information about the citizenship or the country of birth of the interviewees, and it provides only a rough distinction between immigrants from EU-25 countries, and immigrants from other countries.[37] Although this prevents the identification of the immigrants from the NMS, the analysis remains nevertheless informative for the analysis of the implications of Eastern Enlargement. National statistics show that immigrants from the countries that joined the EU in 2004 represent 53 per cent of total immigration from the EU-25 to Greece, 47 per cent in Finland, 43 per cent in Ireland and 35 per cent in Austria. Furthermore, the Background Report provides evidence that the immigrants from the NMS are similar to immigrants from other member countries with respect to their educational achievement, and this should reasonably be expected to narrow down the potential dissimilarities with respect to their use of the welfare system in destination countries. Moreover, is is likely that migrants from the NMS will become more and more similar to migrants from other EU member states the longer they stay in the receiving countries.

The assessment of the impact of immigration upon the fiscal balance of destination countries represents an extremely relevant topic that is riddled with significant analytical challenges and that is often hindered by substantial data limitations. A complete analysis of the fiscal implication of migration needs to go well beyond an answer to the question of whether current immigrants are net contributors to the fiscal balance, as the short- and the long-run impact of immigration could significantly differ. For instance, although immigrants could be providing a negative net contribution to the fiscal system, they may return home before having completed the minimum vesting period that the destination countries requires to be entitled to receive public pensions.[38] If such an event is coupled with the existence of limits to the portability of pension rights (see Holzmann et al., 2005), then immigrants would be providing a substantial – albeit possibly unfair – support to the pension systems of destination countries that would not be captured by any static analysis of their net fiscal contribution.[39]

[37] This distinction is not available for Estonia, Germany, Latvia, and Slovenia.

[38] For instance, Dustmann and Weiss (2007) provide evidence that a large share of immigrants to the United Kingdom returns home after a very short period of time.

[39] Note, *inter alia*, that the impact of immigrants on the fiscal system depends also on their legal status: if they lack a legal residence permit, they are ineligible for receiving welfare transfers, but they are also likely to broaden the informal sector of the economic system.

Furthermore, a full assessment of the impact of immigration on public finances would also need to account for the general-equilibrium effects brought about by immigration. Immigrants could reduce the incentives for domestic firms to offshore the labour-intensive phases of their production processes (Bertola et al., 2008), or they could increase the labour force participation of native women through the care they provide for the elderly, and both these effects have a non negligible impact on the revenue side of the fiscal balance. Fiscal revenues are also influenced by the occurrence of the so called brain waste,[40] when immigrants are employed in occupations for which they are over-qualified, as this reduces their incomes and hence their fiscal contributions.

Thus, the purpose of this chapter is in a way more modest, as we do not attempt to provide a full account of the impact of immigration upon the fiscal balance, but we rather focus on its impact of the welfare system, assessing whether immigrants rely on welfare benefits more than natives, and which factors can help to explain the differen-ces we might be observing. Anecdotal evidence often suggests that immigrants tend to rely disproportionately on the welfare system of destination countries, and thus represent a burden for the fiscal system in this respect. Still, as Barrett and McCarthy (2008) argue, the empirical evidence on the impact of migration on the fiscal system of destination countries is surprisingly limited, possibly "at odds with the amount of public debate (and concern) about the extent to which immigrants use welfare". Citizens from EU countries seem to share this concern, as the data from the European Social Survey carried out in 2002 that are presented in background report signal that 45 per cent of the respondents believe that immigrants represent a burden for the fiscal system, compared to 27 per cent of respondents who hold the opposite view.[41]

Although the analysis that we present here is narrower in scope, it represents a significant contribution to the existing literature as it is broad in its coverage: We analyse the relationship between immigrants and the welfare benefits in all the countries covered by the EU-SILC over the years 2004 to 2006. This represents a major difference to the existing studies – which we will briefly review in the next section – focusing on a single country alone.

Furthermore, we exploit the detailed coverage of welfare transfers provided by the EU-SILC, and we analyse separately contributory and non-contributory transfers, which distinguishes our approach from large parts of the relevant literature. The rationale for a separate analysis is that contributory benefits are social-insurance schemes to which individuals are entitled to only if they have contributed to the system in the past; this restriction to eligibility is likely to lead to a migrant under-representation, while the

[40] The relevance of this phenomenon for immigrants from the New Members States is provided by the country study on the United Kingdom; further evidence is provided by Del. 6 in the case of Polish emigration to the United Kingdom.

[41] Boeri (2006) provides similar evidence drawn from the Eurobarometer, a public opinion survey carried out by Gallup for the European Commission; over the 1990s, a high and increasing share of citizens from EU15 countries agreed with the statement that "*minority groups exploit the system of social welfare*".

reverse could occur with respect to non-contributory benefits. If we pooled the two groups of welfare transfers together, we might end up hiding or blurring relevant differences. [42]

The findings which we present here are drawn from the Background Report "*The impact of labour mobility on public finances and social cohesion";* further details are presented there.

7.1 Immigrants and the welfare state

The question about the relationship between immigrants and the welfare state can be addressed from two different, albeit interrelated, perspectives. The first one requires the observation of whether immigrants are overrepresented among the pool of welfare recipients, and whether their average receipt of welfare transfers is above or below the corresponding figures for natives. The second requires the analysis of the determinants of differences across immigrants and natives that could have emerged from descriptive statistics to understand whether these can be traced back to observable individual or household characteristics.

If observed characteristics fail to explain the observed differences in the reliance on the welfare system, then we would be observing what can be labeled as "residual welfare dependency". Such a residual dependency for the immigrants arises if immigrants are, *ceteris paribus*, more likely than migrants to be receiving some forms of welfare contribution. Although immigrants could differ from natives with respect to some unobserved characteristics – e.g. problems with the language of psychological trauma linked to migration (Brücker et al., 2002) – that render them more likely to claim welfare allowances, the evidence of a "residual welfare dependency" is what resembles more closely the public concern from an abuse of the welfare system by the immigrants.

Although the analysis of an eventual residual welfare dependency allows one to gain a deeper understanding of immigrants' behaviour with respect to the welfare system, the analysis of descriptive data is interesting per se. If data evidence an over-representation of immigrants among welfare recipients, a country might be willing to tailor its immigration policy so to reduce the chances of admissions for those would-be migrants which present a set of observable characteristics that increases the likelihood of reliance on the welfare system (Riphahn, 2004). Such an argument would gain further strength given the concern that migratory flows could be influenced by differences in the coverage

[42] Contributory transfers include individual benefits designed to cover against the risks of unemployment, longevity, sickness, disability, as well as against the death of the main bread-winner in the household, while non-contributory transfers are provided on a household-basis, and they include housing and family allowances, and transfers targeted to groups which are exposed to the risk of social exclusion.

of the welfare systems in destination countries.[43] Although immigrants may not behave differently from natives, countries with generous welfare systems would end up attracting immigrants that are eligible to receive welfare transfers, and this would put pressure on the sustainability of the welfare system itself. De Giorgi and Pellizzari (2006) find evidence of such an effect for migration to the EU-15 countries, and – albeit the estimated effect is small – they argue that it *"is still large enough to distort the distribution of migratory flows, and, possibly, offset the potential benefits of migration as an inflow of labour into countries with traditionally sedentary native workers."*

As we have already observed, there is limited evidence with respect to the impact of immigration on the welfare systems, and this is especially true for European countries, despite their relatively rich social programmes. This literature almost invariably evidences that immigrants are overrepresented in the pool of welfare recipients, with Barrett and McCarthy (2007; 2008) representing notable exceptions, while significant differences emerge with respect to the extent to which the various studies trace these differences back to the specific characteristics of the group of immigrants.

Particular attention has been devoted to analyze the Swedish and German experiences. Sweden represents an ideal case study to analyse the patterns of welfare participation among the native and immigrants, given the generosity of its welfare system and the rapid increase in the immigrant population occurring there at the beginning of the 1990s. According to Hansen and Lofstrom (2003), the huge increase in welfare costs registered in Sweden between the late 1980s and the mid-1990s is largely attributable to the increased immigrant participation in welfare programs. Hansen and Lofstrom (2003) show that immigrants have, *ceteris paribus*, a higher propensity to participate in social assistance and that welfare participation declines with the time spent in the host country. Moreover, evidence of a residual welfare dependency for second-generation immigrants to Sweden is provided by Hammerstedt and Ekberg (2004).

The opposite evidence emerges from Barrett and McCarthy (2007; 2008) for Ireland: Immigrants are underrepresented in the pool of welfare recipients – as immigrants to Ireland tend to be significantly positively selected with respect to their human capital endowment, and migrant status maintain a negative impact on the likelihood of receiving welfare benefits even after controlling for potential confounders. As the authors suggest, this latter finding can be traced back to the exclusion clauses for immigrants that are contained in the Irish welfare system.[44]

Several studies focused instead on the German experience (Bird et al., 1999; Fertig and Schmidt, 2001; Frick et al., 1996; Riphahn, 1998; Sinn et al., 2001; Castranova et al.,

[43] See Sinn (2003) for a description of the diversion effects of migratory flows after the Eastern Enlargement of the EU due to existing differences in the social assistance schemes of European countries.

[44] Barrett and McCarthy (2008) argue that "*by simply denying welfare to immigrants even for a period of time, the apparent tendency of immigrants to use welfare more intensively can be reduced*".

2001), reaching the conclusion that the higher probability of migrant households relative to native households to depend on social assistance and related welfare programs is the result of their human capital and other socio-economic characteristics. Immigrants are equally or even less likely to depend on welfare than natives once the data is controlled for observable characteristics. Lower education, a lower age of the household head and a higher number of children of migrants relative to natives households are the prime factors that contributed to the higher welfare dependency of foreign relative to native households (Riphahn, 1998; Bird et al., 1999; Frick et al., 1996; Fertig and Schmidt, 2001). The higher welfare dependency of foreign households relative to their native counterparts is, not surprisingly, closely related to the weaker labor market performance of adults in the foreign households relative to the native households.[45]

7.2 Evidence from the EU-SILC 2004-2006

7.2.1 Descriptive statistics on the receipt of welfare transfers by immigrants

The evidence from the EU-SILC that is presented in the Background Report and that is summarised here is in line with expectations with respect to contributory benefits.[46] The share of migrants from EU-25 to EU-15 countries which receives this sort of transfers is lower – and in most cases, significantly so – than the corresponding share of natives (see Table 7.1), and the average transfer they receive is always significantly below the average transfer to natives (see Table 7.2), and a broadly similar picture emerges also for extra EU-25 immigrants.[47]

[45] In contrast to the evidence emerging from the Unites States (e.g. Borjas and Hilton, 1996), there is evidence that immigrants in European countries tend to assimilate out of welfare assistance. In Germany, welfare dependency, *ceteris paribus*, declines with the duration of stay of migrant households (Fertig and Schmidt, 2001; Riphahn, 1998). Strong evidence for the hypothesis that migrants tend to assimilate out of welfare has also been found in the Swedish case, although this does not entail that the welfare dependency ratios of migrants and natives converge (Hanson and Lofstrom, 2003).

[46] Although the tables refer to all the countries included in the analysis, here we restrict our comments mostly to immigrants from EU-25 to EU-15 countries, as these data are more informative with respect to the migration to old from the New Member States.

[47] The only exceptions to this pattern are represented by Finland and Denmark, where extra EU-25 migrants are over-represented in the pool of contributory benefit recipients, and also EU-25 immigrants to Denmark are marginally so.

Table 7.1 Contributory benefits: Percentage of recipient immigrants minus the corresponding percentage for natives

	Country	EU-25 immigrants	Extra EU-25 immigrants	All immigrants
EU-15	Austria	-0.10 [5.67]***	-0.14 [12.55]***	
	Belgium	-0.02 [2.37]**	-0.13 [9.10]***	
	Denmark	0.04 [1.91]*	0.05 [3.77]***	
	Finland	-0.03 [1.28]	0.08 [4.69]***	
	France	-0.01 [0.44]	-0.09 [8.69]***	
	Germany[+]			-0.08 [5.86]***
	Greece	-0.19 [7.50]***	-0.25 [22.71]***	
	Ireland	-0.14 [11.54]***	-0.25 [13.62]***	
	Italy	-0.17 [7.96]***	-0.19 [24.76]***	
	Luxembourg	-0.18 [34.54]***	-0.24 [18.95]***	
	Netherlands	-0.06 [1.63]	-0.17 [3.65]***	
	Portugal	-0.12 [3.24]***	-0.28 [15.24]***	
	Spain	-0.07 [2.00]**	-0.22 [14.38]***	
	Sweden	-0.08 [5.04]***	-0.17 [10.51]***	
	United Kingdom	-0.01 [0.81]	-0.24 [23.39]***	
New Member States	Cyprus	-0.05 [3.92]***	-0.24 [19.39]***	
	Czech Republic	0.05 [1.05]	-0.37 [9.78]***	
	Estonia[+]			0.06 [8.91]***
	Hungary	-0.25 [6.35]***	-0.34 [5.71]***	
	Latvia[+]			0.11 [13.43]***
	Lithuania	0.06 [0.91]	0.08 [3.01]***	
	Poland	-0.03 [0.38]	-0.19 [3.78]***	
	Slovakia	0.18 [3.68]***	-0.06 [0.65]	
	Slovenia[++]			0.10 [15.40]***
Other Countries	Iceland	-0.09 [3.27]***	-0.04 [7.65]***	
	Norway	-0.07 [4.10]***	-0.13 [7.64]***	

Notes: averages over the available years; t statistics in brackets, ***,** and * denote significance at 1, 5 and 10 percent respectively; [+] the EU-SILC does not distinguish between EU-25 and extra-EU25; [++] migrants identified by country of birth; the EU-SILC does not distinguish between EU-25 and extra EU-25 migrants.

Source: own calculations on data from EU-SILC 2004-2006.

Note that the underrepresentation of immigrants among the pool of recipients of contributory benefits does not per se entail that immigrants provide a positive contribution to the sustainability of the pension systems of European countries, which are under strain because of population ageing. For instance, the underrepresentation could be traced back to the choice of migrants to return to their home countries upon retirement to enjoy the higher purchasing power of their pensions in source countries; this entails that any data source – as the EU-SILC – capturing only residents in the country fails to account for the share of contributory benefits that is paid to past immigrants.

Table 7.2 Contributory benefits: Average transfer per immigrants minus average transfer per native

	Country	EU-25 immigrants	Extra EU-25 immigrants	All immigrants
EU-15	Austria	-2,152 [197.29]***	-3,288 [522.39]***	
	Belgium	-520 [105.21]***	-1,833 [279.64]***	
	Denmark	-195 [10.09]***	-1,182 [91.48]***	
	Finland	-1,424 [63.97]***	-1,919 [117.02]***	
	France	-1,040 [278.06]***	-2,274 [720.17]***	
	Germany[+]			-1,675 [679.30]***
	Greece	-163 [19.94]***	-1,844 [524.54]***	
	Ireland	-1,426 [173.19]***	-1,922 [165.71]***	
	Italy	-1,967 [245.00]***	-3,254 [1317.72]***	
	Luxembourg	-4,901 [230.47]***	-6,074 [118.46]***	
	Netherlands	-1,831 [65.18]***	-3,723 [123.12]***	
	Portugal	-548 [54.89]***	-1,469 [352.86]***	
	Spain	-304 [31.49]***	-1,865 [457.92]***	
	Sweden	-1,197 [158.50]***	-2,214 [292.27]***	
	United Kingdom	-402 [85.88]***	-2,636 [1026.91]***	
New Member States	Cyprus	-86 [7.19]***	-1,592 [123.65]***	
	Czech Republic	37 [8.83]***	-877 [285.47]***	
	Estonia[+]			92 [89.95]***
	Hungary	-588 [128.04]***	-884 [123.39]***	
	Latvia[+]			141 [199.44]***
	Lithuania	39 [6.30]***	315 [121.18]***	
	Poland	350 [50.43]***	-628 [150.41]***	
	Slovakia	347 [60.44]***	-40 [4.28]***	
	Slovenia[++]			434 [89.41]***
Other Countries	Iceland	-2,455 [33.53]***	-1,366 [74.14]***	
	Norway	-402 [85.88]***	-2,636 [1026.91]***	

Notes: figures are in euros, averages over the available years; t statistics in brackets, ***,** and * denote significance at 1, 5 and 10 percent respectively; [+] the EU-SILC does not distinguish between EU-25 and extra-EU25; [++] migrants identified by country of birth; the EU-SILC does not distinguish between EU-25 and extra EU-25 migrants.

Source: own calculations on data from EU-SILC 2004-2006.

When we move to non contributory benefits, the picture that emerges from descriptive statistics changes quite substantially, evidencing a notable divide between migrant households from EU-25 and from other countries.[48] In most destination countries, EU-25 migrant households are under-represented also among the recipients of non contributory benefits (Table 7.3). More specifically, Luxembourg represents the unique EU-15 countries where immigrant households from EU-25 countries are over-represented among welfare recipients when we focus on non contributory benefits alone, while in all other countries - thus including Austria, Finland, Greece, and Ireland, where the share of

[48] The analysis is performed here at the household rather than at the individual level, as most non contributory benefits – which are funded from general taxation, and unrelated to previous contributions – are meant to address specific household needs, and because the EU-SILC provides information on family allowances in such a way that would not allow to differentiate among individuals within the same household.

migrants from the NMS is highest – the share of recipients among immigrant households is either not significantly different or even below the corres-ponding share for native households.[49]

Table 7.3 Non contributory benefits: Percentage of recipient immigrant households minus the corresponding percentage for native households

	Country	EU-25 immigrant households	Extra EU-25 immigrant households	Immigrant households	Mixed households
EU-15	Austria	-0.04 [1.23]	0.13 [6.60]***		0.23 [8.84]***
	Belgium	-0.02 [0.85]	0.10 [3.59]***		0.25 [10.40]***
	Denmark	0.05 [1.06]	0.28 [10.85]***		0.15 [6.44]***
	Finland	-0.08 [1.69]*	0.36 [10.22]***		0.22 [7.49]***
	France	0.02 [0.78]	0.43 [25.04]***		0.20 [8.74]***
	Germany[+]			0.10 [3.16]***	0.15 [6.31]***
	Greece	-0.07 [1.85]*	-0.08 [5.03]***		-0.04 [1.53]
	Ireland	-0.10 [4.36]***	-0.02 [0.73]		0.00 [0.17]
	Italy	-0.24 [6.27]***	0.05 [4.28]***		0.13 [6.06]***
	Luxembourg	0.17 [18.28]***	0.37 [15.30]***		0.14 [6.97]***
	Netherlands	-0.04 [0.43]	0.41 [2.62]***		0.14 [2.91]***
	Portugal	-0.27 [3.80]***	-0.05 [1.30]		0.25 [4.91]***
	Spain	-0.03 [1.02]	0.04 [2.60]***		0.05 [2.06]**
	Sweden	-0.11 [3.51]***	0.19 [5.63]***		0.18 [7.25]***
	United Kingdom	0.00 [0.10]	0.00 [0.13]		0.10 [4.12]***
New Member States	Cyprus	-0.38 [15.29]***	-0.45 [14.13]***		-0.08 [3.44]***
	Czech Republic	-0.25 [3.57]***	-0.07 [1.11]		0.18 [2.89]***
	Estonia[+]			-0.09 [7.04]***	0.13 [4.60]***
	Hungary	-0.11 [1.29]	-0.13 [1.21]		0.23 [2.72]***
	Latvia[+]			-0.09 [5.97]***	0.03 [1.27]
	Lithuania	-0.24 [1.48]	-0.14 [1.86]*		-0.01 [0.14]
	Poland	-0.21 [1.51]	-0.12 [0.85]		0.17 [2.18]**
	Slovakia	-0.08 [0.62]	-0.01 [0.04]		-0.08 [0.89]
	Slovenia[++]			0.09 [5.90]***	0.04 [1.88]*
Other Countries	Iceland	-0.01 [0.14]	0.09 [4.67]***		0.02 [1.63]
	Norway	-0.03 [0.84]	0.24 [6.93]***		0.15 [5.82]***

Notes: averages over the available years; t statistics in brackets, ***,** and * denote significance at 1, 5 and 10 percent respectively; [+] the EU-SILC does not distinguish between EU-25 and extra-EU25; [++] migrants identified by country of birth; the EU-SILC does not distinguish between EU-25 and extra EU-25 migrants.

Source: own calculations on data from EU-SILC 2004-2006.

When looking at the average transfers received rather than at the share of recipients (see Table 7.4), the picture is more composite, as there are six EU-15 countries where immigrant households from the EU-25 countries receive significantly higher contributory

[49] A further exception is represented by Germany, although for this country no distinction is available with respect to the country of origin of the immigrants.

benefits than native households do: In the Netherlands and the United Kingdom, the difference exceeds €1,000 per year.[50]

Conversely, immigrant households from other countries tend to be over-represented in most destination countries – with Greece representing the sole significant exception among EU-15 countries - in the pool of recipients of non contributory transfers.[51] A radically different picture emerges also when we focus on mixed households that are defined as those households where we have at least an immigrant and a native. Although this third group of households is small in most countries, it is characterized by a remarkably higher share of recipients of non contributory benefits than native households, and by larger average benefit receipts. This result is suggestive that – besides eligibility – information could be playing a significant role with respect to welfare receipt, as the native member is more familiar with the features of the domestic welfare system, and this could, *ceteris paribus*, significantly increase the likelihood that a household is receiving non contributory benefits.

Descriptive statistics suggest that – at least with respect immigrants from EU-25 countries – there is little to no evidence that immigrants are over-represented in the pool of welfare recipients. While this comes as little surprise when we focus on contributory benefits alone (as these requires a minimum vesting period for eligibility), this evidence is remarkable when we consider non contributory benefits. As such a result also emerges for countries where the share of immigrants from the New Member States is highest, it is fair to say that the public concern about welfare abuse by immigrants is probably misplaced, at least as far as we concentrate on the effects of EU Eastern enlargement.

[50] A similar figure emerges for Germany, but this pools together all immigrant households.

[51] The huge differences in average transfers – exceeding €4,000 per year – observed in countries like Finland, the Netherlands and Sweden are highly suggestive that these could be driven by the large share of non economic migrants, as refugees, that reside in these countries.

Table 7.4 Non-contributory benefits: Average transfer of immigrant households minus average transfer of native households

	Country	EU-25 immigrant households	Extra EU25 immigrant households	Immigrant households	Mixed households
EU-15	Austria	-493 [60.49]***	707 [153.67]***		1,736 [355.62]***
	Belgium	-282 [82.14]***	1,736 [354.54]***		727 [208.75]***
	Denmark	76 [8.75]***	1,555 [280.31]***		559 [112.11]***
	Finland	361 [18.11]***	4,209 [294.16]***		2,052 [196.74]***
	France	-198 [85.01]***	2,918 [1517.96]***		1,735 [923.60]***
	Germany[+]			1,057 [383.68]***	1,649 [885.74]***
	Greece	27 [9.88]***	-99 [91.07]***		-91 [62.22]***
	Ireland	-95 [7.97]***	3,326 [231.05]***		596 [57.42]***
	Italy	-304 [94.91]***	131 [150.16]***		366 [213.12]***
	Luxembourg	1,481 [97.95]***	3,124 [67.44]***		1,020 [38.62]***
	Netherlands	1,494 [56.97]***	4,357 [123.07]***		43 [4.09]***
	Portugal	-185 [33.35]***	32 [15.81]***		337 [156.19]***
	Spain	-92 [26.28]***	-35 [24.12]***		311 [151.65]***
	Sweden	-393 [51.65]***	3,501 [440.42]***		1,982 [360.35]***
	United Kingdom	1,197 [166.36]***	885 [257.33]***		979 [265.98]***
New Member States	Cyprus	-945 [68.66]***	-837 [49.33]***		-106 [9.46]***
	Czech Republic	-312 [76.39]***	-166 [53.73]***		240 [84.33]***
	Estonia[+]			-98 [88.44]***	41 [23.61]***
	Hungary	-47 [8.59]***	-68 [9.28]***		409 [89.12]***
	Latvia[+]			-72 [93.20]***	20 [23.67]***
	Lithuania	-145 [14.23]***	-85 [16.70]***		18 [7.10]***
	Poland	-123 [38.24]***	-57 [19.97]***		80 [46.27]***
	Slovakia	290 [42.29]***	-146 [6.38]***		126 [35.20]***
	Slovenia[++]			-4 [0.79]	148 [27.82]***
Other Countries	Iceland	-654 [8.81]***	-480 [13.68]***		739 [45.86]***
	Norway	-260 [18.62]***	7,011 [480.58]***		1,954 [168.16]***

Notes: figures are in euros, averages over the available years; t statistics in brackets, ***,** and * denote significance at 1, 5 and 10 percent respectively; [+] the EU-SILC does not distinguish between EU-25 and extra-EU25; [++] migrants identified by country of birth; the EU-SILC does not distinguish between EU-25 and extra EU-25 migrants.

Source: own calculations on data from EU-SILC 2004-2006.

7.3 Is there any residual welfare dependency?

In order to further pursue our understanding of the impact of immigration upon the welfare state of destination countries, we set up a multivariate analysis of the determinants of the receipt of contributory and non contributory benefits. Although the descriptive statistics did not evidence substantial differences between immigrants from EU-25 countries and natives, these could still hide substantial behavioural differences, provided that immigrants and natives differ with respect to observable characteristics that have an impact upon their eligibility for welfare transfers. We thus estimated a country-specific *probit* model where the dependent variable is a dichotomous variable that signals the receipt of welfare benefits, and where the set of controls include the gender, age (and its square), marital status, number of children and household

members, educational level and income before transfers.[52] Furthermore, we include among the regressors dummy variables for immigrants – distinguishing, whenever possible, between EU-25 and other origin countries, and it is the size and the significance of these dummies which is informative about the existence of an eventual "residual welfare dependency" of the immigrants.

Table 7.5 Contributory benefits: Sign and significance of the incremental effect on the estimated probabilities of receiving transfers due to a change in the migrant dummies from country-specific individual-level probit models

		Migrant dummies			
	Country	EU-25	Extra EU-25	All countries	Obs.
EU-15	Austria	-0.082 [3.21]***	-0.011 [0.68]		41,843
	Belgium	-0.052 [4.03]***	-0.200 [12.39]***		40,460
	Denmark	0.010 [0.31]	0.074 [3.81]***		48,740
	Finland	-0.110 [3.01]***	0.020 [0.76]		90,745
	France	-0.063 [3.72]***	-0.109 [7.29]***		76,103
	Germany[+]			0.048 [2.37]**	75,937
	Greece	-0.046 [1.39]	-0.081 [4.84]***		51,344
	Ireland	-0.125 [8.44]***	-0.180 [8.13]***		46,340
	Italy	-0.107 [3.53]***	-0.007 [0.52]		192,440
	Luxembourg	-0.040 [4.15]***	-0.103 [5.61]***		30,476
	Netherlands	0.004 [0.08]	-0.128 [1.83]*		17,750
	Portugal	-0.123 [2.63]***	-0.116 [4.02]***		43,240
	Spain	-0.032 [1.81]*	-0.096 [5.60]***		119,170
	Sweden	-0.180 [7.81]***	-0.245 [11.65]***		47,573
	United Kingdom	0.004 [0.15]	-0.141 [7.98]***		58,626
New Member States	Cyprus	-0.031 [2.20]**	-0.137 [6.75]***		26,751
	Czech Republic	0.044 [0.72]	-0.275 [4.21]***		32,112
	Estonia[+]			0.049 [4.23]***	41,102
	Hungary	-0.210 [3.57]***	-0.402 [5.35]***		46,059
	Latvia[+]			-0.034 [2.69]***	24,893
	Lithuania	-0.157 [2.35]**	0.042 [0.99]		30,049
	Poland	-0.180 [2.03]**	-0.229 [3.90]***		110,235
	Slovakia	0.122 [2.08]**	-0.227 [3.35]***		38,388
	Slovenia[++]			0.009 [1.00]	74,347
Other Countries	Iceland	-0.023 [0.63]	-0.025 [2.64]***		26,488
	Norway	-0.038 [1.45]	-0.201 [6.79]***		47,259

Notes: z statistics in brackets, ***,** and * denote significance at 1, 5 and 10 percent respectively; [+] the EU-SILC does not distinguish between EU-25 and extra EU-25; [++] migrants identified by country of birth; the EU-SILC does not distinguish between EU-25 and extra EU-25 migrants.

Source: own elaborations on data from EU-SILC 2004-2006.

With respect to contributory benefits, the dummy variable for immigrants from EU-25 countries is either not significantly different from zero, or negative and highly statistically

[52] For contributory benefits, where the analysis is performed at the household level, the individual variables refer to the household head; see Del. 5 for details on the estimated coefficients of these regressors, which are in line with expectations.

significant (see Table 7.5). As contributory benefits require a minimum vesting time for eligibility and the EU-SILC does not provide information about the time elapsed since the immigrants have arrived in the country, this estimated coefficient is most likely to capture the effect of the limited number of years since migration rather than an actual behavioral difference between immigrants and natives.

Table 7.6 Non contributory benefits: Sign and significance of the incremental effect on the estimated probabilities of receiving transfers due to a change in the migrant dummies from country-specific household-level probit models

		Migrant household dummies				
	Country	EU-25	Extra EU-25	All countries	Mixed	Obs.
EU-15	Austria	-0.023 [0.53]	-0.073 [3.33]***		0.002 [0.07]	17,470
	Belgium	-0.046 [2.37]**	0.097 [2.90]***		0.037 [2.10]**	17,744
	Denmark	0.005 [0.06]	0.067 [1.42]		0.060 [2.61]***	21,054
	Finland	-0.141 [2.00]**	0.162 [2.62]***		-0.005 [0.14]	37,252
	France	0.034 [1.35]	0.295 [10.13]***		0.130 [6.41]***	32,679
	Germany[+]			0.179 [3.73]***	0.032 [1.29]	30,168
	Greece	-0.055 [1.66]*	-0.059 [3.84]***		0.009 [0.42]	19,620
	Ireland	-0.168 [5.21]***	-0.038 [0.80]		0.069 [2.96]***	18,797
	Italy	-0.154 [1.68]*	-0.017 [1.19]		0.058 [2.45]**	75,098
	Luxembourg	0.053 [2.62]***	0.090 [1.49]		0.025 [0.96]	12,661
	Netherlands	0.061 [0.56]	0.421 [2.86]***		-0.013 [0.26]	9,234
	Portugal	-0.177 [1.50]	-0.205 [6.15]***		0.123 [2.82]***	15,208
	Spain	-0.054 [3.76]***	-0.018 [2.17]**		0.004 [0.29]	44,184
	Sweden	-0.184 [3.90]***	0.035 [0.70]		0.059 [2.38]**	20,326
	United Kingdom	-0.060 [0.95]	-0.229 [9.64]***		-0.014 [0.59]	23,329
New Member States	Cyprus	-0.391 [11.63]***	-0.506 [11.00]***		-0.115 [4.74]***	9,191
	Czech Republic	-0.261 [6.74]***	-0.222 [4.34]***		-0.014 [0.25]	13,005
	Estonia[+]			-0.068 [3.68]***	0.046 [2.04]**	13,991
	Hungary	-0.123 [1.55]	-0.258 [2.39]**		0.248 [3.03]***	15,576
	Latvia[+]			-0.024 [1.16]	-0.010 [0.45]	7,699
	Lithuania[+++]		-0.173 [2.21]**		0.054 [0.89]	9,123
	Poland	0.009 [0.06]	-0.171 [1.93]*		0.016 [0.30]	32,536
	Slovakia	-0.022 [0.21]	0.291 [1.49]		-0.049 [0.78]	11,856
	Slovenia[++]			0.006 [0.27]	0.083 [5.55]***	19,612
Other Countries	Iceland	-0.232 [2.80]***	-0.047 [1.11]		-0.020 [0.58]	9,919
	Norway	-0.150 [3.84]***	0.106 [1.81]*		0.101 [3.93]***	20,164

Notes: z statistics in brackets, ***,** and * denote significance at 1, 5 and 10 percent respectively; [+] the EU-SILC does not distinguish between EU-25 and extra EU-25; [++] migrants identified by country of birth; the EU-SILC does not distinguish between EU-25 and extra EU-25 migrants; [+++] migrant households from EU-25 countries excluded from the estimation because of their limited number.

Source: own elaborations on data from EU-SILC 2004-2006.

As such, an eligibility constraint does not apply to non contributory benefits; the estimates reported in Table 7.6 are more likely to capture a behavioral difference between immigrant and native households with respect to the receipt of this kind of transfers. The estimates suggest that in seven EU-15 countries immigrant households from EU-25 countries have a *lower* probability of receiving non contributory benefits once

other relevant confounding factors are controlled for; for some countries, such as Ireland or Sweden, being an immigrant households reduces, *ceteris paribus*, the estimated probability of receiving transfers by more than 15 percentage points.[53] The multivariate analysis also suggests that - notwithstanding the significant differences emerging from the descriptive statistics (see Table 7.3) - a "residual welfare dependency" for mixed households emerges only in seven EU-15 countries, while in the other destinations different observed characteristics suffice to explain the differences in the receipt of non contributory benefits.[54]

7.4 Conclusions

Although the inability to single out immigrant households from NMS from other migrants might have led us to blur some relevant behavioural differences occurring *within* the broad group of EU-25 countries, the similarities between the estimates that we obtain for Austria, Finland, Greece and Ireland – where the share of immigrants from NMS is the highest – and the other destination countries are reassuring that our analysis is informative also for the case of interest.

The findings that we obtained from descriptive statistics and from the econometric analysis are in line with expectations when focusing on contributory benefits alone, as recent immigrants do not meet the minimum vesting period required for eligibility. Conversely, the result is noteworthy, and less intuitive, when it comes to non-contributory benefits. The lack of significant differences in welfare receipt can probably be traced back to the age and education structure of the immigrants from EU-25 countries that are broadly in line with the one of destination countriy natives. The econometric analysis further demonstrates that there are no behavioural differences between the two groups once potential confounders are controlled for.

Hence, the evidence from the EU-SILC data does not support widespread concerns in the public that immigrants are exploiting the welfare state in destination countries, even in the stricter sense of "residual welfare dependency" embedded in the multivariate analysis.

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[53] These findings are in line with the literature with respect to Ireland (Barrett and McCarthy, 2008), while they provide evidence with respect to Germany that is at odds with the literature, which suggests that migrant status has no effect on welfare receipt once one controls for other factors (e.g. Riphahn, 2004).

[54] This entails that the hypothesis that information matters for welfare receipt is less robust than descriptive statistics suggested, and this finding is broadly consistent with the evidence that in European countries immigrants, controlling for their labor market performance, tend to "assimilate out" of the welfare system.

8 Regional clustering and commuting

Spatial labour mobility always involves a regional component. This applies both to the choice of the region of residence and work as well as to the form of mobility. One can distinguish two main forms of spatial labour mobility: Migration and commuting. Migration involves changing both the place of residence and work, while commuters change the place of work without changing their residence. Both forms of spatial mobility are addressed in this chapter, since they may affect the regional impacts of labour mobility in the context of the EU Eastern enlargement by one way or another.

The high regional concentration of migrants in certain geographic locations is one of the most robust stylised facts found in the economic literature on migration. In her seminal paper Bartel (1989) shows that in the US close to 75 per cent of the migrants live in the 25 largest MSA of the United States, although only 50 per cent of the native population resides in these regions. Similar stylised facts can been found in the EU and other OECD countries.

Commuters, by contrast, may differ from migrants in a number of important ways. Commuting is much more dependent on distance between sending and receiving regions than migration. This implies that the regional impact of cross-border commuting on border regions is asymmetric: While the sending regions are often affected by large outflows of labour, the receiving regions by large inflows. In addition, there may also be more subtle differences, since research shows that commuting within a country is strongly focused on males, decreases with age, and increases with education. If some of these "stylised facts" carry over to cross-border commuters the possibility of commuting could also impact on the demographic and skill composition of cross-border labour flows in border regions.

In the context of European integration these issues are becoming increasingly relevant. In particular the relationship between cross-border commuting and migration has received high attention by policy makers in the context of enlargement of the EU by the NMS. In this debate it was repeatedly argued that due to the vicinity of major centres to the external border of the EU, cross-border commuting flows may have an additional impact on border regions and a number of analysts voiced concerns over the potential asymmetric effects of these labour movements on specific sending and receiving regions. In addition, the regional concentration of migrants raises issues as to whether migration has a differential impact on different regional economies, whether the potential formation of enclaves has a negative or positive effect on the probability of integration of foreigners and what policy activities could help those regional labour markets most strongly affected by migration and commuting to address the double task of integrating the new arrivals and adjusting to the increase in labour supply.

In this chapter our primary aim is to describe the regional concentration of migrants in Europe and analyse both the regional and the educational structure of cross-border commuters, with particular emphasis on labour mobility from the new member states and candidate countries. Furthermore, since cross-border labour mobility between the NMS

and some of the EU-15 countries still underlies severe restrictions, we augment this descriptive evidence by a case study on the willingness to migrate and commute of a border region in which particularly high cross-border commuting flows can be expected (the so called CENTROPE Region, which is the Austrian, Czech, Hungarian, and Slovak border region). Here we focus on the extent of the commuting flows and on the motivations of persons willing to migrate and commute. The final section draws some conclusions with respect to the asymmetric impact of migration on labour markets at the regional level.

8.1 The regional concentration of migrants in Europe

Focusing first on the regional concentration of migration from all countries at the NUTS-2 level of regional disaggregation, there is a strong regional concentration of migrants in the EU-15 (see the upper panel of Figure 8.1). Immigrants seem to cluster in capital city regions, the French and Spanish Mediterranean coast and the regions in central Europe. The (NUTS-2) region with the largest share of immigrants in Europe is the Île de France region: In 2006, according to European Labour Force Survey data, 5.7 per cent of all migrants in Europe lived in this region. Large proportions of immigrants can also be found in Outer (3.2 per cent) and Inner London (2.8 per cent) as well as Cataluña and the Comunidad de Madrid in Spain (both 2.7 per cent).

Furthermore, when considering the index of regional concentration[55] we find that 23.9 per cent of all immigrants in Europe would have to change their place of residence in order to achieve a distribution of migrants across Europe that parallels the distribution of total population. Again, Île de France is the European region where the difference between the percentage of migrants and the percentage of the total population living in the region is largest, closely followed by Inner and Outer London. The Darmstadt region (including the city of Frankfurt am Main) and the Comunidad de Madrid can also be found among the regions with the highest local concentrations (see Figure 8.1).

There are, however, large differences for immigrants from different ethnic backgrounds. This applies in particular to immigrants from the EU candidate countries and the NMS. Although the concentration coefficients for migrants from Turkey, Croatia, and Macedonia

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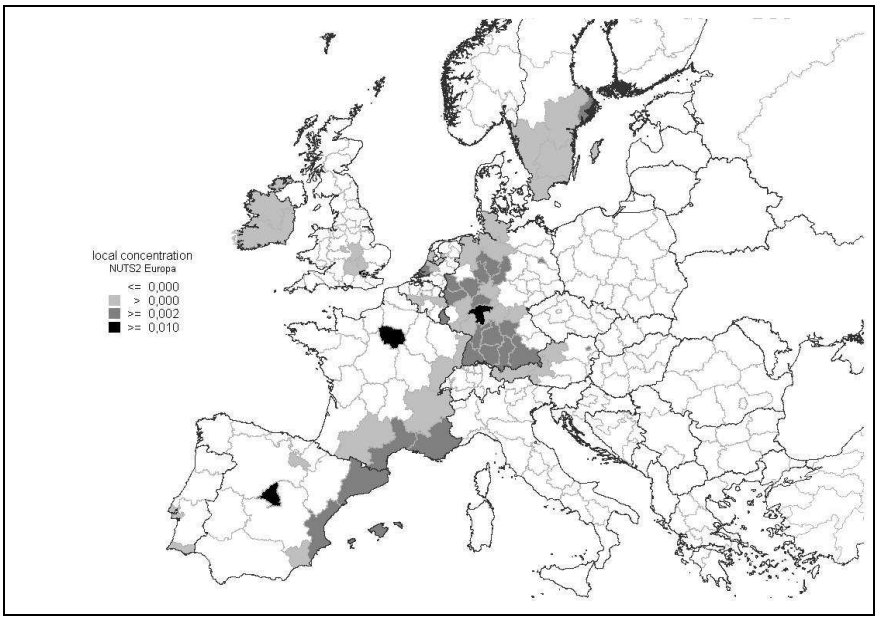
[55] This measures the share of foreign population that would have to change residence in order to achieve a distribution of foreign born that is equivalent to the total population. Formally it can be defined for I groups of migrants living in R regions. If m_{rj} is the number of migrants from a specific group $j \in I$ living in region $r \in R$, and n_r is the number of natives living in region r, then $\sum_{i=1}^{I} m_{ri}$ is the total number of migrants from all groups I in this region. The coefficient of geographic association is then given by: $G_j = \sum_r g_{rj}$ with g_{rj} the „local concentration", defined as:

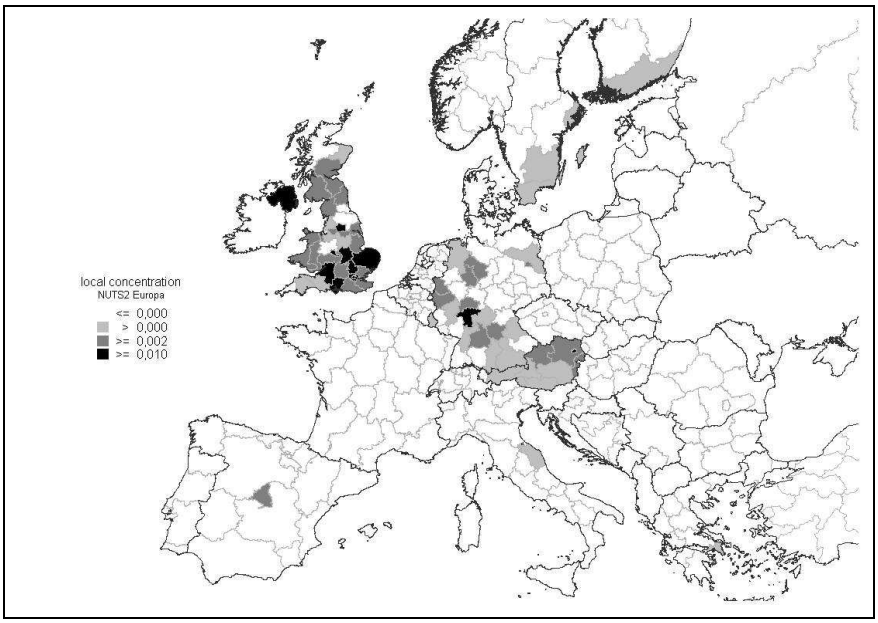
$$g_{rj} = \max\left[\frac{m_{rj}}{\sum_{r=1}^{R} m_{rj}} - \frac{n_r + \sum_{i=1}^{I} m_{ri}}{\sum_{r=1}^{R}\left(n_r + \sum_{i=1}^{I} m_{ri}\right)}, 0\right]$$

are only slightly higher than for overall migrants, immigrants from these countries are mostly concentrated in Germany, especially in Berlin, Düsseldorf, Darmstadt, Stuttgart, and Oberbayern.

Figure 8.1 Local concentration of all and NMS-8 migrants in the EU-15



All immigrants



NMS-8 immigrants

Sources: European Labour Force Survey 2007, Eurostat, WIFO.

By contrast, the largest concentration of immigrants from NMS-8 countries can be found among Estonians who often reside in Southern Finland (more than 40 per cent of all Estonian migrants live in this region). Relatively high concentrations can also be found for immigrants from the other Baltic States and Slovenia. Migrants from Slovakia are, by contrast, substantially more concentrated than Czech or Hungarian migrants. The lowest

concentration of all NMS-8 countries can be found for Polish immigrants which are mostly concentrated in the UK (in the London areas, East Anglia and West Yorkshire) and in Vienna. In general, however, immigrants from the NMS-8 show a lower degree of concentration than those from Bulgaria and Romania or the candidate countries, while they are more regionally concentrated than immigrants from other countries.

Other large migrant groups show varying degrees of concentration. Immigrants from Morocco and Algeria, the two largest immigrant groups in Europe, are mainly concentrated in France or Spain, which can be explained by former colonial ties. This holds, in part, also for Tunisian migrants. They all are, however, less concentrated than immigrants from Ecuador, who moved almost exclusively to Spanish regions, especially the Comunidad de Madrid, Cataluña and Valencia. A similar pattern can be observed for immigrants from Colombia. For both Ecuadorian as well as Colombian migrants, language can be expected to be the main driving force for migrating to Spain. Former colonial ties also play a role for Indian and Pakistani migrants, who mostly cluster in U.K. regions. Large local concentrations of migrants from Albania can be found in the nearby Greek region of Attiki as well as in Italy (Tuscany and Lombardy).

Furthermore, there are some differences between more recent and earlier migrant cohorts (i.e. those that arrived in the last 10 years and those that arrived earlier). This applies in particular to immigrants from Poland, who are the largest immigrant group among the NMS-8 in the EU-15. While earlier immigrants concentrated mostly in Vienna and the Comunidad de Madrid, later immigrants have shifted to U.K. regions (especially the London areas, East Anglia and West Yorkshire). Accordingly, the correlation of local concentration values between migration waves is rather low. This is also the case for most other NMS-8 countries (all except Estonians and Hungarians). However, performing the same analysis for migrants within a country suggests that these changes are primarily due to a shift in destination countries rather then the regional distribution of immigration within a country. Within-country correlation coefficients on the settlement structure of recent and earlier migrants are much larger than those considering the entire EU-15, and regression analysis confirms the importance of regional network size in migrants' location decisions.

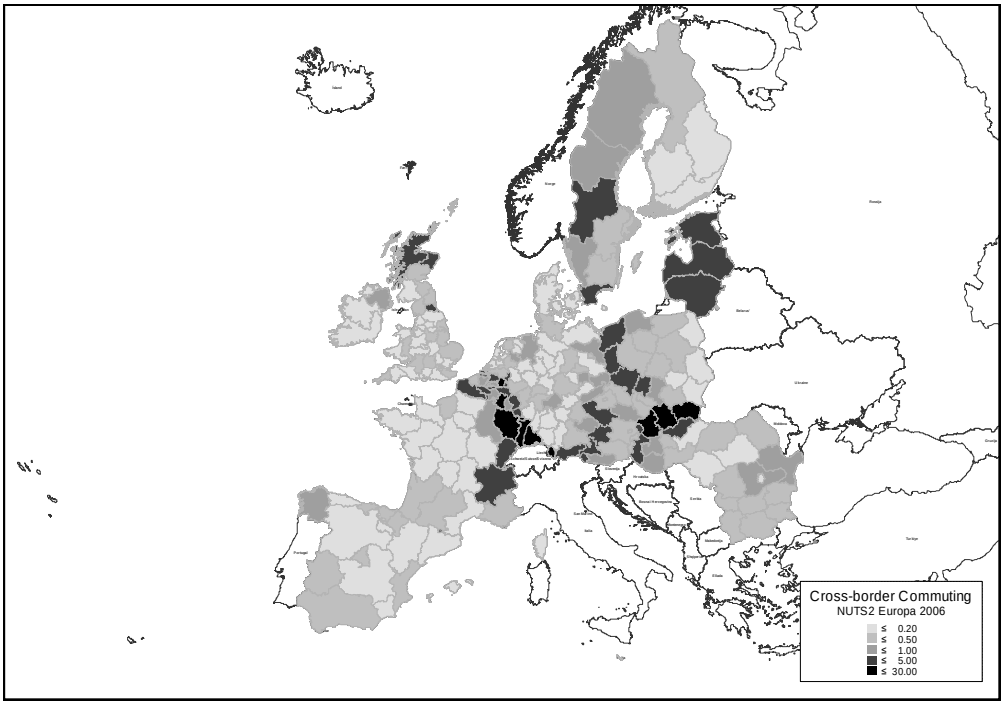
For the two countries which joined the EU in 2007 there is, however, still a strong correlation between the local concentration of earlier and more recent migration waves, as is also the case for the three candidate countries, especially Turkey and Macedonia. Highly significant and positive correlations can also be observed for immigrants from other countries with a high number of immigrants in the EU-15 like Algeria (with the largest cluster in Île de France), Ecuador (Comunidad de Madrid), India (Outer London), Tunisia (Île de France), Albania (Attiki), or Pakistan.

8.2 Cross-border commuting in the enlarged EU

Cross-border commuting in the European Union is, by contrast, rather low. In 2005 and 2006 only around 0.6 per cent of the employed persons in the EU-27 commuted across

borders. Furthermore, cross-border commuting is highly dependent on a country's geography. High rates of outbound cross-border commuting occur primarily in border regions or in regions close to the border. Thus small countries (e.g. Belgium, Austria and the Baltic Countries), where most regions are located close to the border, have higher shares of outbound cross-border commuting than large countries.

Figure 8.2 The extent of outbound cross-border commuting in EU-27 NUTS2-regions, 2006



Sources: European Labour Force Survey 2007, Eurostat, WIFO.

The regions where cross-border commuting attains some relevance in the EU are located at the German-French and French-Belgian borders, on the Austro-German border, at the Czech-Slovak border, in the Baltic countries and in Western Hungary as well as the German Polish border and southern Sweden (see Figure 8.2). This suggests that cross border commuting in the EU occurs primarily between countries which either share a common language, have been a single country until very recently or where special institutional arrangements influence the possibility of cross-border commuting. By contrast most other border regions are characterised by rather low cross-border commuting rates. In the regions outside of these areas the share of out commuting cross-border commuters is lower than 0.5 per cent of the resident workforce even when considering only border regions (see Figure 8.2).

In contrast to non-commuters, cross border commuters are disproportionately often medium skilled male manufacturing and construction workers, working in medium to less qualified manufacturing jobs. Furthermore, they often work in less skilled occupations

such as elementary occupations, plant and machine operators or as crafts and related trade workers as well as in the construction and manufacturing sector. [56]

These differences in the demographic, educational, and occupational characteristics of cross-border commuters can be expected to arise from a number of factors specific either to the receiving region such as the industrial structure and thus the structure of labour demand in border regions (which may be more strongly focused on manufacturing activities), or to the particular sending and receiving region pair considered (such as differences in the returns to education in sending and receiving regions). We thus first separated migration flows by receiving country into migration flows received by the EU-15 countries, those received by NMS-12 countries and those received by other countries outside the EU (see left hand side panel of Table 8.1).[57] The share of cross-border commuters with completed secondary education, working in manufacturing or in elementary occupations or employed as plant and machine operators, is particularly high among those workers that commute (from one of the EU-27 countries) to the NMS-12. At the same time, however, the cross-border commuters that commute to the EU-15 are also more strongly concentrated in these education, occupation and industry groups, than either non-commuters or internal commuters. A clearly better than average occupational, educational and industrial structure can be found only among those who commute from an EU-27 country to a non-EU country.

In a second step we also divided commuting flows by place-to-place categories separating cross-border commuters from within the EU-15, cross-border flows from an NMS-12 to an EU-15 country and all other commuting flows (see right hand side panel of Table 8.1). Here we find somewhat more pronounced differences. In particular, cross-border commuters within the EU-15 tend to be substantially better educated than commuters from the NMS-12 to the EU-15. A larger share of them also works in market services and occupations such as legislators, professionals, and technicians. Indeed, when comparing the structure of cross-border commuters within the EU-15 to that of non commuters aside from the focus on males and younger workers, cross-border commuters within the EU-15 do not differ strongly from non-commuters. By contrast, commuters

[56] These differences also apply to a comparison with internal commuters and are consistent with some of the recent case study evidence on cross-border commuting. Relative to internal commuters, cross-border commuters are more highly qualified (36% of internal commuters but 26% of the cross-border commuters in the EU have completed a tertiary education), less strongly concentrated in service sector employment (internal commuters 70%, cross-border commuter 53%) and less often work as legislators, professionals or technicians (internal commuters 50%, cross-border commuters 42%). Similar results are reported by Buch et al (2008), who find that cross border workers in the German – Danish border regions are disproportionately drawn from among manufacturing workers and mostly stem form the age group of the over 25 year olds and Gottholmseder and Theurl (2005 and 2006), who find that cross-border commuters from Vorarlberg to Switzerland are mostly male, 25-to 35 years old, medium skilled manufacturing workers that are neither positively nor negatively selected on educational grounds.

[57] This choice is dictated by the small number of cross-border commuting flows which make a more detailed analysis unrepresentative and preclude a separate analysis of cross border commuting between candidate countries and the EU-27.

from the NMS-12 to the EU-15 are heavily focused on the secondary education and construction groups.

Table 8.1 Commuting flows in the EU-27 by demographic and job characteristics and receiving region and place-to-place criteria (in per cent of total flows, 2006)

	Recieving Region			Place to Place Flows		
	EU 15	EU 12	Other	From EU 15 to EU 15	From EU 12 to EU 15	Other
			in %			
Female	29.7	24.2	26.7	32.2	31.7	28.6
Male	70.3	75.8	73.3	67.8	68.3	71.4
Aged 15 to 19	1.7	-	-	-	-	-
Aged 20 to 29	29.3	37.6	20.0	20.8	42.3	24.1
Aged 30 to 39	26.0	25.1	29.0	31.5	27.1	27.9
Aged 40 to 49	26.8	21.8	27.4	28.4	19.6	27.3
Aged 50 to 59	14.4	12.5	18.3	15.6	8.1	16.6
Aged 60 or more	1.7	-	-	2.4	0.8	2.6
Not Available	2.3	-	3.2	-	-	-
Primary	71.7	85.2	65.7	62.5	87.0	69.6
Secondary	25.6	12.9	31.0	30.9	11.9	27.9
Tertiary	7.2	-	-	8.8	-	7.7
Legislators senior officials and managers	11.6	7.2	17.9	17.1	-	13.7
Professionals	12.2	12.5	17.7	15.2	6.2	16.7
Technicians and associate professionals	7.2	2.2	7.7	10.0	-	5.9
Clerks	12.5	4.8	11.2	9.8	18.0	8.5
Service workers and shop and market sale	1.7	-	-	-	5.7	-
Skilled agricultural and fishery workers	22.5	35.6	22.5	15.8	28.8	23.4
Craft and related trades workers	12.7	21.8	10.2	15.8	9.6	12.9
Plant and machine operators and assemble	11.6	11.2	-	5.4	23.6	8.5
Elementary occupations	-	-	-	-	-	-
Armed forces						
No answer	4.4	-	2.4	-	11.4	2.4
Construction	16.2	32.6	14.6	9.3	28.1	17.7
Manufacturing	23.0	42.9	25.1	30.0	14.3	31.2
Market Services	38.8	18.2	35.0	38.1	28.7	30.2
Non-Market Services	17.0	-	21.0	19.9	17.3	17.5

Notes: - = no data reported on account of the low number of observations

Source: EUROSTAT-LFS, own calculations

8.3 Migration and commuting intentions in EU-border regions: A case study of the Vienna-Bratislava region

Commuting and migration from the NMS-10 still underlies restrictions due to the transitional arrangements for the free movement of workers. We thus augment the evidence based on data from the LFS by additional information on the willingness to

migrate and commute, drawn from two waves[58] of a large scale survey on cross-border labour mobility intentions conducted in one of the European border regions in which particularly high cross-border commuting flows can be expected (the so-called CENTROPE region, which is the Austrian, Czech, Hungarian and Slovak border region located around the twin capital cities of Vienna and Bratislava).[59]

In this survey respondents were asked "Would it be conceivable for you to work abroad?". Furthermore, they were asked whether they would prefer (1) "daily commuting", (2) "weekly commuting", (3) "monthly commuting" or (4) "living and working abroad". In subsequent questions, respondents were also asked which country they would prefer to work in and if they had already taken concrete steps towards working abroad.

Table 8.2 Migration, commuter and mobility potentials in selected CENTROPE-regions

	Total NMS-regions		Czech Republic		Slovakia		Hungary	
	2004-2005	2006-2007	2004-2005	2006-2007	2004-2005	2006-2007	2004-2005	2006-2007
	As a percentage of responds							
Migration potential								
General	12.4	10.9	10.7	9.9	20.0	12.0	7.5	12.0
Expected	4.9	3.8	3.6	3.3	9.4	5.5	2.8	2.7
Real	1.4	1.3	1.5	1.0	1.9	2.1	0.8	1.3
Commuting potential								
General	9.9	5.6	5.1	3.8	17.4	2.7	12.0	13.3
Expected	3.0	1.4	1.1	1.2	6.0	0.7	3.9	2.7
Real	0.7	0.8	0.3	0.7	1.7	0.3	0.6	1.4
Mobility potential								
General	22.3	16.6	15.9	13.8	37.4	14.7	19.5	25.3
Expected	8.0	5.2	4.7	4.5	15.4	6.2	6.8	5.4
Real	2.1	2.1	1.8	1.7	3.6	2.4	1.3	2.6
	Absolute							
No. of observations	5,991	5,641	2,996	2,901	1,550	1,484	1,445	1,256

Source: LAMO household surveys 2004-2005 and 2006-2007, WIFO-calcuations

[58] This data were collected within the scope of the Austrian "Labour Market Monitoring" (LAMO) project (see Hudler-Seitzberger and Bittner, 2005). They were collected in two waves (November 2004 to February 2005, November 2006 to February 2007) by face-to-face interviews in the Hungarian, Slovak, and Czech regions of "CENTROPE" and (only in the first wave) in the Austrian provinces of Vienna Burgenland and Lower Austria. In both waves, 15,791 individuals were interviewed, 11,693 of them living in the "CENTROPE" regions of the new member states. The sampling plan was based on random quota sampling of the working-age population of age 15 and older.

[59] This region – on account of its vicinity to the border, high regional disparities and high urbanisation – may be considered a primary example of a border region that could be strongly affected by cross border labour mobility after the end of transitional periods.

Based on these questions and following the literature on questionaire-based mobility surveys, various concepts of migration and commuting potentials were defined and progressively narrowed. First, the "general" migration potential includes individuals, who do not currently work abroad, but would consider doing so if there were no transitional periods, and would also move their residence, returning at most once a month. Second, the "expected" migration potential consists of those in the general migration potential who have either already collected information about their respective target country, have taken training courses, learned the language, applied for a residence or work permit or for a job or who have a confirmed job offer or a place to live. Third, the "real" migration potential comprises those in the expected potential who have already applied for a residence or work permit or a job or even have a confirmed job offer or a place to live abroad. In addition, "general", expected, and real commuting potentials were defined in an analogous way, but only for persons who intend to commute (either daily or weekly) from their current residence to their workplace abroad. Finally, mobility potentials – which include both migration and commuting potentials – were defined.

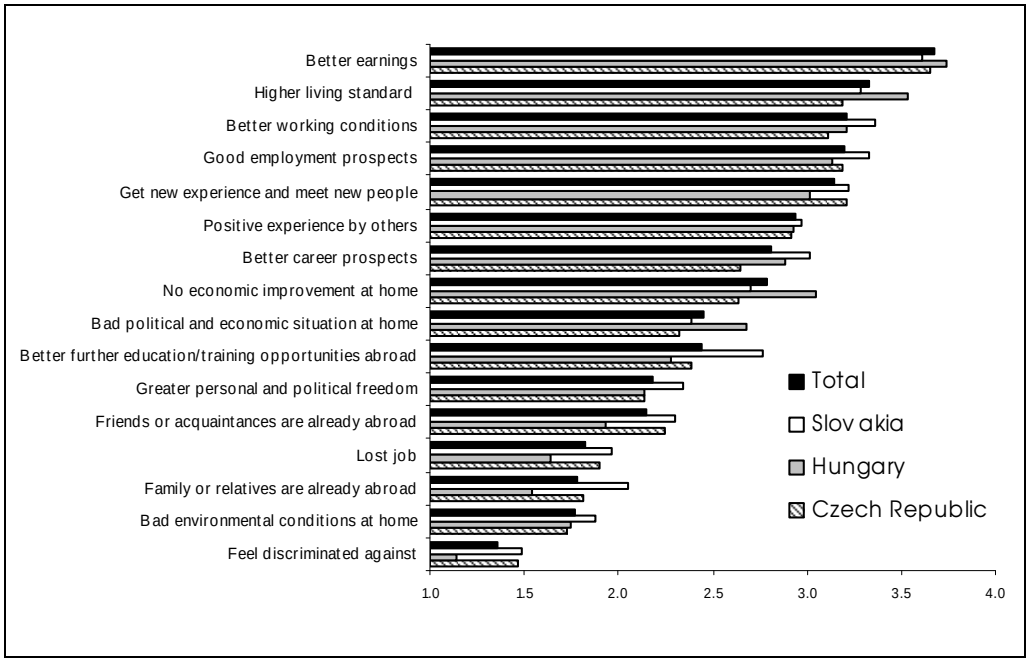
According to these definitions the general migration potential comprised around 10.9 per cent of the population in the NMS-regions of CENTROPE aged 15 or older in 2006-2007, while 5.6 per cent generally considered commuting across the border. The expected and real potentials are substantially lower: The expected migration potential amounted to 3.8 per cent, the real potential only to 1.3 per cent. The expected commuting potential represents 1.4 per cent of the population, the real commuting potential only 0.8 per cent (see Table 8.2).

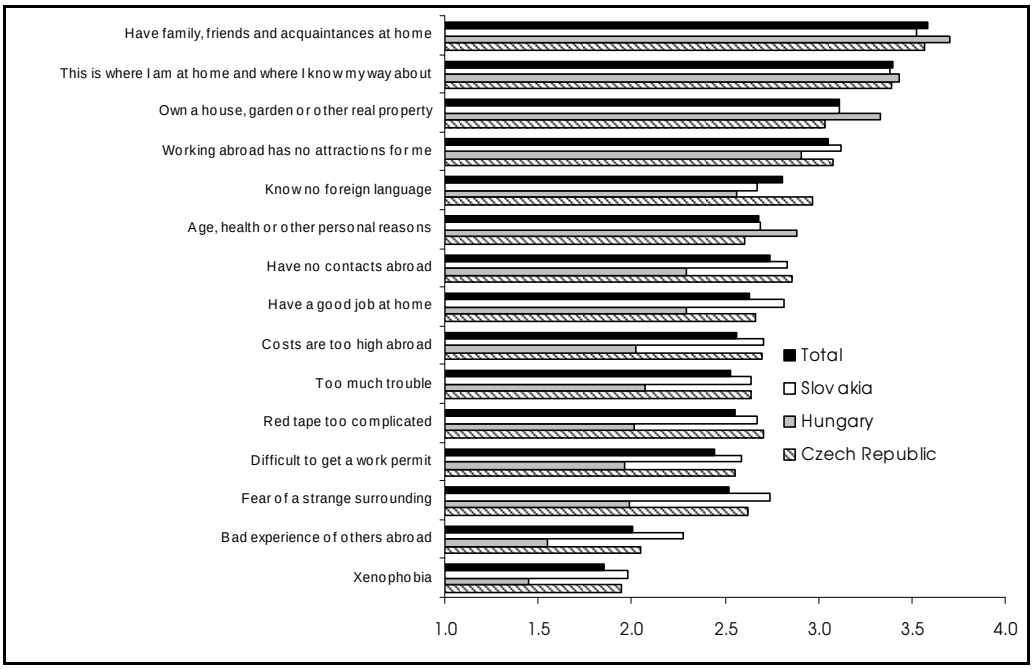
Furthermore, there was a significant decrease in the general and expected mobility potential between 2004-2005 and 2006-2007. This is mainly attributable to a more than 4 percentage point decline in the general commuting potential. The general migration potential also decreased, but only by 1.5 percentage points. The expected migration and commuting potentials were also significantly lower in 2006-2007 than they were in 2004-2005. The minor changes in the real migration and commuting potentials are, however, statistically insignificant.

Looking at the motives for cross-border migration or commuting (Figure 8.3), we find that those willing to migrate or commute in the CENTROPE regions of the new EU member states constitute a group that is strongly drawn by the better economic conditions in the recipient country while the political and economic situation back home appears to exert less of an impact on the decision to become mobile: Economic pull factors, such as better earnings, a higher standard of living or better working conditions abroad rank highest in both waves. Good employment prospects in the recipient region were also among the top five reasons stated. In addition, many interviewees also seek new experiences abroad. The relative and absolute importance of this factor even increases over time: In 2006-2007 it was among the five top-ranking motives. Traditional push factors, such as job loss, discrimination, or education/training, rank at the lower end and a deteriorating environmental situation or weak political and economic conditions in the home country are of average importance only.

When considering those unwilling to move the motivational situation is different. In both surveys (see Figure 8.3), key motives for non-mobility are personal factors and non-monetary costs, such as the fear of losing family and personal networks, the feeling of affinity to one's home country and knowledge of relevant local factors. This highlights the importance of location-specific insider advantages as an explanatory factor for non-mobility, as well as the relevance of uncertainty as a major barrier to mobility. Among the monetary factors identified were real estate assets (ownership of a house, home or garden, etc.) or the lack of investments in human capital, like foreign language skills. Less importance is accorded to institutional barriers, such as the difficulty of getting a work permit.

Figure 8.3 Motives for moving abroad and staying (2006-2007 wave)



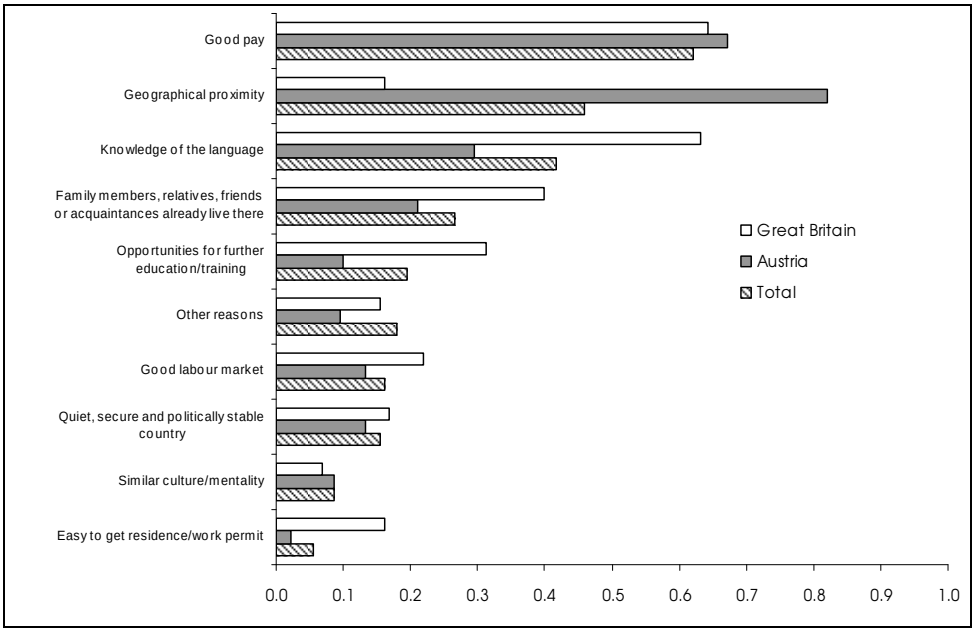


motives for non-mobility

Source: LAMO Survey 2007.

Furthermore, our data suggests that the plans for the choice of country of migration have changed substantially in the last years. While earlier studies concluded that about two thirds of the NMS migration potential plans to migrate to Germany and Austria; the proportion of those willing to migrate to Germany and Austria is about 40 per cent (first wave: 40.7 per cent; second wave: 39.5 per cent) according to our data. On the other hand, the share of potential migrants preferring the UK is substantially higher (by about a quarter) than in earlier surveys (first wave: 20.9 per cent; second wave: 24.3 per cent). The motives for the choice of target countries suggest that this is driven primarily by network migration motives and changing language skills of the NMS populations. A comparison of motives for choosing the United Kingdom and Austria (see Figure 8.4) shows that those who prefer Austria do so mainly because of its geographical proximity (which is more important for commuters) and its high wage level. All other motives, such as language skills, resident family members, relatives or friends, education or training opportunities as well as the relative easiness of obtaining a residence or work permit seem to speak for the UK.

Figure 8.4 Motives for country preference by recipient country: Austria, UK and all destinations



Source: LAMO Survey 2007.

8.4 Conclusions

This chapter has analysed the regional impact and distribution of migration and cross-border commuting in the EU-27 using European Labour Force data. Furthermore, a case study of migration and commuting intentions in one of the border regions, which can be deemed to be most affected from these flows (the border region of the NMS to Austria), was presented. With respect to the regional structure of migration in the EU we find the largest local clusters of migrants in the EU-15 in urban centres and at the Mediterranean coast of France and Spain and a markedly different settlement structure of migrants relative to natives: 23.9 per cent of all migrants would have to change their region of residence in order to achieve a uniform distribution of migrants across EU-15 countries. Migrants from the NMS-8 show a lower degree of concentration than those from Bulgaria and Romania or the candidate countries, while they are more regionally concentrated than migrants from other countries. The biggest local clusters of NMS migrants can be observed in the London areas and Vienna. Furthermore, the target regions of more recent NMS-8 migrants are considerably different from those of earlier cohorts. This is, however, primarily due to changes in institutional regimes since accession, which also affects the regional patterns of migration.

By contrast, cross-border commuting in the EU-27 is limited to border regions and has a relatively low magnitude when considering the overall European labour market. It accounts for only 0.5 per cent of total employment in the EU and is of relevance in a small number of border regions which are mostly characterised by strong linguistic, historic or institutional ties. Here, usually slightly more than 1 per cent of the employed commute across borders and in individual cases cross-border commuting may surpass

the 5 per cent mark. For most other border regions out-commuting is below 0.5 per cent of the employed. Cross-border commuters are also not better qualified than non-commuters and are drawn more than proportionately from manufacturing workers, males and the age group of the 20 to 29 year olds. These characteristics apply even more strongly to cross-border commuters from the NMS-10 than to commuters from the EU-15. While these results are largely consistent with the findings of earlier case studies in the literature, they also suggest that cross border commuters – in contrast to migrants – are not as strongly positively selected on educational criteria, but stem primarily from the intermediate qualification level.

In the case study of the CENTROPE region we find that 11 per cent of the interviewed in the border regions of the Czech Republic, Hungary, or Slovakia expressed the wish to migrate to one of the EU-15 countries in the future. 3.8 per cent of the population in the region were willing to migrate and had taken first steps to prepare for cross border migration or commuting while only 1.3 per cent of the population applied already for a work permit and or had a job offer abroad in the 2006-2007 wave. An additional 5.6 per cent of the population in the region under consideration expressed the wish to commute to the EU-15 in the future. 1.4 per cent of the population in the region were willing to commute and had taken first steps to prepare for commuting while 0.8 per cent of the population planned to commute and had applied for a work permit and or already had a job abroad (real commuting potential) in 2006-2007. Note that these figures are very much in line with our econometric estimate of the migration potential based on the economic fundamentals in the NMS and the EU-15.

Relative to the first wave of interviews in 2004-2006 this represents a decrease in the migration potential of between 1.5 percentage points (general migration potentials) and 0.1 percentage points (real migration potential). Commuting potentials declined more strongly for the general and expected commuting potentials, while the real commuting potential slightly increased.

Analysing the changes in the preferences associated with the willingness to migrate and commute, the share of those willing to migrate to Germany and Austria is about 40 per cent and thus substantially lower than in previous studies. By contrast, the share of potential migrants preferring the United Kingdom is substantially higher than in the earlier literature. Those who prefer Austria do so mainly because of its geographical proximity and its high wage level. All other motives, such as language skills, resident family members, relatives or friends, education or training opportunities as well as the relative easiness of obtaining a residence or work permit make the UK a more attractive target region.

Overall, our results thus suggest that border regions and urban agglomerations are the regions which will most likely experience the largest labour supply shock from enlargement. The first fact can be traced back inter alia to cross-border commuting, the second fact due to the locational choices of migrants. This implies that labour markets in the EU-15 and the NMS-10 are not affected in a symmetric way. The absolute size of

these asymmetries, however, is likely to be rather modest even in the regions most strongly affected.

Rough calculations suggest that the labour market impact is moderate even in the most affected regions: If we consider the estimates of the migration potential at the national level as outlined in Chapter 4 of this report, the estimates of the commuting potential (from this chapter) and the regional breakdown of the migrants and commuters from the NMS, our findings from Chapter 5 suggest that the labour market effects are pretty small, even in the most affected regions. As an example, in the city of Vienna, which receives together with the Greater London area the highest share of migrants and commuters from the NMS, the unemployment rate will increase by less than 0.1 percentage points and wages decrease by 0.05 per cent in the period 2007-11 if free movement is introduced. These effects are well below the size of any business cycle effects.

Given the small magnitude of these effects, it is likely that other channels such as the brain drain in the sending and the brain gain in the receiving countries or remittances have more long-lasting effects from a regional perspective. In this respect the findings from this chapter in conjunction with other results of this study suggest the following:

- First, the impact of a brain gain in in receiving and brain drain in sending countries may differ across regions. In particular the finding that cross-border commuters both from the new member states as well as within the EU-15 are not positively self-selected on average, implies that any effects of a brain drain for the sending regions (and brain gain for receiving regions) are most likely to be associated with migratory rather than with commuting moves. For receiving regions this in turn suggests a potential positive long-run impact of a brain gain primarily in urban regions, although this is not yet visible due to the 'brain waste'.[60] In contrast, border regions where commuting dominates the labour supply shock from the NMS the effects of a brain gain (for the receiving region) and brain gain (for the sending region) are likely to be smaller. However, in some sending countries the brain drain is of greater relevance for rural regions and/or medium sized towns than in border regions or in large urban centres (see e.g. the country study for Poland).

- Second, the experiences from other migration episodes as well as the recent migration developments in Austria demonstrate that the extent of cross-border commuting and its subsequent effects varies considerably across regions (see e.g. the country study on Austria). Inter alia, the extent of cross-border commuting depends heavily on population density in the sending region, on distance and income differentials between the sending and receiving regions and on the institutional arrangements. Even in the EU-15, only in few border regions integrated labour markets which are characterised by significant cross-border commuting have

[60] This is also pointed out by a study on the impact of recent migration on the London economy by the London School of Economics (LSE, 2007), migration from abroad has played a key role in the long term development of the city.

emerged. In these cases, strong linguistic, historical or institutional ties have enhanced cross-border labour mobility.

- Third, remittances of cross border migrants and commuters may have disproportionally large effects on local economies (see e.g. the Polish country study). This holds particular for local economies with income levels below the national average and for border regions due to their higher share of commuters. In the latter case the impact on regional development is however modest since remittances are primarily used for consumption there rather than for investments in human capital or entrepreneurial activities.

9 Conclusions

The main finding of this study is that the labour mobility triggered by the EU's Eastern enlargement has generated substantial income gains in the enlarged EU. Our estimates suggest that the additional migration from the NMS-8 caused by the EU enlargement during the 2004-2007 period increases the GDP of the enlarged EU by 0.2 per cent or by 24 billion Euros in the long-run. The migration from Bulgaria and Romania into the EU-15 has an impact on the GDP in the enlarged EU of a similar size. This cannot, however attributed to the EU's Eastern enlargement, since the overwhelming share of this migration took place before the NMS-2 joined the EU in 2007. According to our estimates, about 50 per cent of the migration potential from the NMS is realised at present. If this holds true, then the overall GDP gains from migration from the NMS into the EU-15 can increase by a factor of two until 2020.

The economic benefits from migration are however not equally distributed between sending and receiving countries and across groups within countries. The main winners are the migrants themselves. Their monetary earnings increase by a factor of three in nominal terms and by a factor of two if we consider purchasing power parities. The total factor income of the native population, i.e. the gross earnings of capital and labour, tends to decline in the short-run in the receiving countries, but will increase in the long-run. According to our estimates, the migration from the NMS-8 during the 2003-2007 will increase the factor income of the native population in the long-run by 0.1 per cent, which corresponds to about 11 million Euros.

In the sending countries, we observe a short-term gain, which however disappears in the long-run when the capital stock adjusts. Native workers in the receiving countries tend to lose in the short-term slightly by falling wages and increasing unemployment, while the long-term effects are by and large neutral. The converse holds for native workers in the sending countries. The wage and employment effects of migration are relatively balanced across the different groups in the labour markets. Less-skilled workers in the receiving countries are slightly more affected by competition from migrant workers from the NMS. This can be traced back to the fact that migrants from the NMS nowithstanding a relatively high educational attainment are employed well below their skill levels. However, we find the main losers from migration from the NMS not among the native workforce. The foreign workforce already living in the EU-15 loses substantially from falling wages and increasing unemployment, while the native workforce tends to benefit.

These simulation results are based on several models which we have employed in this study. These models consider wage rigidities and unemployment, as well as the adjustment of economies to labour supply shocks via investment in physical capital or via trade and structural change. We observe that our findings are rather robust with respect to the different types of models, different estimates of the relevant parameters and elasticities. Moreover, several studies in the empirical literature find effects of a similar magnitude.

Another important finding of our study is that migration from the new member states involves neither a brain drain in the sending countries nor a brain gain in the receiving countries. Although migrants from the NMS are favourably self-selected on observable skills with respect to the population of the sending countries, the skill composition differs only moderately from that of natives there. Moreover, the school enrolment rates have substantially increased in the NMS since the beginning of the 1990s, such that it is rather unlikely that skill shortages emerge in the sending countries. Indeed, we find no evidence for severe skill shortages in the sending countries.

The educational attainment of the migrant workforce from the NMS resembles by and large that of the native workforce in the EU-15. Factor endowments have thus not changed much there. However, our examination of the occupational structure of migrants from the NMS in the EU-15 indicates that migrants from the NMS are employed well below their skill levels. We find evidence in the UK that the returns to education for migrants from the NMS are extremely low. Moreover, so far there are no signs that the returns to education increase with the length of stay in the destination country. Thus, migrants from the NMS do not transfer their human capital to the labour markets in the EU-15. However, this does not necessarily imply that the human capital acquired in the NMS is wasted. Migrants from the NMS may acquire additional human capital in the receiving countries such as language skills. This may create additional returns to human capital later either in the home countries or in the receiving countries.

The labour market performance of migrants from the NMS differs largely by destination and sending countries. In the main destination countries of recent migration from the NMS-8, Ireland and the UK, the unemployment rates of migrants are below those of natives and the employment participation rates are higher. In contrast, in many continental European countries we find higher unemployment risks of the migrant population compared to natives. In some countries such as Germany even the participation in employment is lower than that of natives.

These characteristics suggest that the welfare state in the main destinations of migrants from the NMS-8, the UK and Ireland, are likely to benefit from migration. However, even if unemployment risks of the migrant population are higher than those of natives, the welfare states of the receiving countries can benefit from immigration. This depends largely on the pension system. Our analysis of the impact of migration on the fiscal balance of the welfare state suggests that migrants benefit less than proportionally from contributory benefits (e.g. pensions, unemployment benefits) and more than proportionally from non-contributory benefits. Our data base does not allow disentangling NMS-migrants from other EU-15 migrants. However, our findings are particularly supported by countries where citizens from the NMS have large shares in the migrant population from the EU-27. Thus, depending on system of the welfare state and the integration of migrants from the NMS into the labour market, the welfare states of the receiving countries can benefit from immigration from the NMS. In contrast, the welfare state in the sending countries can be negatively affected by emigration.

National averages can hide large differences at the regional level. Migrants from the NMS are slightly more concentrated in the EU-15 than other migrant communities. They cluster in particular in the Greater London area and in the Vienna area. Although Eastern enlargement is characterised by large income differences at the borders of the EU-15 to the NMS, we do not observe a large impact of cross-border commuting in most border areas. The Vienna region forms the main exception in this respect. The relatively low level of cross-border commuting and the rather low shares of migrants from the NMS in many border regions can be traced back inter alia to a low population density in most border regions of the sending countries, unfavourable labour market conditions in some border regions of the receiving countries (e.g. the Eastern German border regions), and possibly the maintained immigration restrictions in Austria and Germany. We find that even in the most affected immigration regions such as the Vienna region and the Greater London region the impact on wages and unemployment is moderate if we transfer the elasticities from our macroeconomic simulation models to the regional level. Thus, although migrants from the NMS cluster in few regions in the EU-15, the impact at the regional level is most probably moderate.

An outlook on the future developments is difficult under the present conditions. A projection of future migration flows and stocks is difficult even in a stable economic environment. We find that many migration forecasts which have been carried out before EU enlargement have predicted a migration potential which is by and large consistent with the figures which we find for migration from the NMS-8 into the EU-15. However, these forecasts cannot be falsified since the current institutional conditions deviate from the counterfactual assumption that all EU countries will open their labour markets at the same time which is employed explicitly or implicitly by all studies. Note that it is methodologically not possible to address a diversion of migration flows triggered by a selective application of transitional arrangements, since historical evidence does not exist. However, the diversion might be also caused by other factors such as the favourable labour market conditions in the main destinations, flexible labour market institutions, or language, culture and climate.

In this study, we have forecasted the migration potential from the NMS-8 and the NMS-2 into the EU-15 under different institutional conditions. We focussed on the EU-15, since this enables us to circumvent the problem that migration flows into one destination are affected by institutional conditions and other factors in alternative destinations. We find that the stock of foreign residents from the NMS-8 will increase from 1.9 million in 2007 to 3.8 million in 2020 under the present institutional conditions, and to 4.4 million under free movement. Similarly, the stock of foreign residents from Bulgaria and Romania will increase from 1.9 million in 2007 to 3.9 million in 2020 under the present conditions, and to slightly more than 4.0 million under free movement. Overall, these forecasts expect that we have already achieved about 50 per cent of the long-run migration potential from the NMS. The forecasting intervals are rather large. The overall magnitude can be about one-third higher or lower in the 95-per cent confidence interval. Needless to say that these projections rely on a number of strong assumptions and should be interpreted therefore only as a hint to the actual orders of magnitude.

The financial and economic crisis makes an outlook even more difficult. The economic forecasts for the EU-15 and NMS have been steadily revised downwards during the last two month before this study was finalised. According to recent forecasts, the GDP in the enlarged EU will decline by more than 1 per cent in 2009. The EU-15 is more than proportionally affected, while the economic growth in the NMS will decline substantially. Moreover, the decline in economic activity will be more pronounced in the main destinations for migrants from the NMS, i.e. in Ireland, the UK and Spain. Since the overall level of migration depends heavily on employment opportunities in the destination countries, we expect both a decline in migration from the NMS into the EU-15 and a higher rate of return migration. We expect therefore that net migration flows will be well below our long-term projections during the recession.

In this sense, migration acts as a buffer for the native population in the main destination countries, while the native population in the sending countries might be negatively affected during the economic downturn if return migration accelerates. Nevertheless, we expect that labour mobility will contribute to reduce the shock at the level of the enlarged EU, since migration decisions are driven by differences in employment opportunities in different locations.

Our estimates do not suggest that labour mobility can contribute to a severe imbalance in the labour market. Both the unemployment and wage effects are small. Moreover, historical experience suggests that the level of migration depends on employment opportunities and contracts in the course of an economic downturn. We therefore do not expect that the opening of the labour markets in those countries which still maintain immigration restrictions will affect native welfare and labour markets severely. In the medium and long-term, our simulations suggest in contrast that the native population in the receiving countries is likely to benefit.

Part B

Country Case Studies: Summary Report

1 Introduction to the summary of the country case studies

In the context of the present study, we analysed the situation in selected receiving and sending countries in greater detail. In contrast to the first part of this report, which provides a general analysis of the key trends in labour mobility in the enlarged EU and its economic and social implications, the country case studies which are summarised here focus on specific developments nine receiving and six sending countries. Receiving countries include: The United Kingdom and Ireland as the main recipients of NMS-8 migrants with liberal legislation; Italy and Spain that have become important destinations after the last enlargement in 2007; France as a traditional European immigration country; Sweden that has granted free mobility of persons immediately upon EU enlargement in 2004 together with full and immediate (in contrast to Ireland and UK) access to social welfare structures; Denmark that has introduced only minor regulations; and Germany and Austria, the two countries that have chosen to maintain a very restrictive regime regarding labour mobility from the NMS up to now. On the part of the NMS, studies were prepared for Poland and Latvia, the two NMS-8 countries with a large outflow of migrants; Romania and Bulgaria, the two countries joining the Union in 2007 with a large outflow of migrants as well; Hungary as a sending and receiving country among the NMS-8; and finally Croatia as a candidate country with a long tradition of migration.

The individual case studies serve to provide concrete examples of both types of countries. Country studies discuss relevant data sources available to assess the most recent trends in migration and their labour market effects as well as their limitations, and they examine the institutional setting for migration. Depending on the data availability, quantitative descriptions of the labour mobility patterns before and after accession are given. In addition, the case studies address existing empirical country specific findings on intra EU-migration and its effects on the national economy and labour market in particular.

Based on the findings of the country reports, we briefly summarise the institutional setting for NMS migration and discuss the general economic development and the labour market evolution in both the sending and receiving countries before and after enlargement. We shall concentrate on the features of migration focussing on employment patterns, the skill structure, regional concentration of migrants, as well as gender and age aspects. Finally, we examine the impact of migration both on the sending and receiving countries' economies and labour markets.

2 The institutional setting

As outlined in Part A of this report, for both waves of EU enlargement in 2004 and 2007, the accession treaties granted the incumbent EU members an opportunity to temporarily restrict inward work migration from the NMS[61] according to the '2+3+2' formula. This meant that incumbent members could initially enforce national or bilaterally agreed measures in order to regulate labour market access on the part of the new EU citizens for a period of two years, whereupon the restrictions had to be reviewed once again. The restrictions may be maintained for a further three years. Prolongation thereafter for a final period of two years is only possible in instances of serious disruption to the respective labour market or a threat thereof. The Community rules governing the free movement of workers will ultimately have to be applied in 2011 (for the NMS-8) and 2014 (for Bulgaria and Romania) at the latest. In the meantime, Austria and Germany still uphold their restrictions on migration from the NMS-8, while Belgium operates a work permit system (with simplifications for certain occupations) and Denmark no longer requires a work permit for employment covered by collective agreements. The other EU-15 countries grant free labour market entry to NMS-8 citizens, as do the NMS-8 countries. For Bulgarians and Romanians, free labour market entry is granted by Cyprus, the Czech Republic, the Baltic States, Finland, Poland, Slovakia, Slovenia and Sweden, since 1 January 2009 also by Greece, Hungary, Portugal and Spain. Denmark applies the same minimum requirements that it sets for the NMS-8. Ireland, the Netherlands, and the United Kingdom have work permit systems, while Belgium, France, Italy, and Luxembourg operate similar systems with industry-specific simplifications. Germany applies its work permit scheme but exempts certain engineers from a labour market test. In Austria and Malta, the work permit systems remain in force unmodified (for further details, see Part A).

[61] Cyprus and Malta are exempt from these regulations.

3 General economic and labour market trends

3.1 Economy and labour markets before enlargement

In most receiving countries, the period between 2000 and 2003 was characterised by low GDP growth, the exception being Ireland (with an average annual growth of 5.7 per cent) but also Spain and the UK (Table 3.1). France and Sweden performed above the EU-15 average of 1.4 per cent, too, but the annual growth rates were still moderate. In the remaining countries, annual GDP growth fell below the 1 per cent mark; Germany, the worst performer, went through a period of stagnation and recession.

Over that period, employment grew by only 0.9 per cent per annum in the EU-15. Germany and Denmark reported negative employment growth, while employment was almost stagnant in Austria (Table 3.2). Only Ireland and Spain experienced noticeable employment growth. Despite favourable results both in terms of GDP and employment growth, unemployment averaged 11 per cent in Spain between 2000 and 2003, close to 9 per cent in France and Italy, and over 8 per cent in Germany. The lowest unemployment rate within this country group was reported for Austria at 3.9% on average, followed by Ireland and Denmark (Table 3.3).

Sending countries, by contrast, showed a pronounced upswing in the 2000-2003 period, with the annual GDP growth ranging 2.2 per cent in Poland and 7.7 per cent in Latvia. The comparatively modest growth performance in Poland was caused by its current account crisis in the aftermath of the Russian crisis coupled with restrictive monetary policies. Though experiencing already high GDP growth, the period before the 2004 accession wave was characterised by stagnant or even declining employment (Poland, Croatia) in the sending countries, with the only exception of Latvia. Unemployment, though on the decline, was in the double digits and affected Poland and Bulgaria the most, with figures reaching almost 19 per cent and 17 per cent, respectively. Only Hungary and Romania had lower unemployment rates than the EU-15 average.

3.2 Economy and labour markets after enlargement

The years between 2004 and 2007 witnessed an upswing in the business cycle in the EU-15 which was reflected by a one percentage point higher average GDP growth (2.4 per cent) compared with the earlier period. As far as receiving countries are concerned, the improvement was particularly strong in Denmark, Austria, Germany and Sweden, while in Ireland the high annual GDP growth remained unchanged as compared to the pre-enlargement period.[62] The upswing of the German economy, particularly in 2006 and 2007 was driven by rising investments and increasing exports due to increased competitiveness. In Austria, growth was first of all export led, while domestic demand

[62] Despite an improvement, Germany's GDP growth remained below the EU-15 average in the 2004-2007 period.

components were less important driving forces. The annual economic growth in Italy and France was below the EU-15 average, with Italy being the worst performer over the 2004 to 2007 period.

Rising GDP growth in the receiving countries has translated into employment increases in the period after 2004. Employment turned from negative to positive average growth rates in Denmark and Germany and showed significant increases in Ireland and Spain, of 4.2 per cent and 3.6 per cent on average. Employment growth in France and the UK remained unchanged at low levels compared to the beginning of the 2000s. At the same time, the average unemployment rate remained almost unchanged in the EU-15, but taking the countries individually the picture becomes mixed. Only two countries (Denmark and Italy) report lower average unemployment rates than in the 2000-2003 period, while in the UK it remained stagnant.

In terms of economic growth the period after 2004 was a clear success for almost all sending countries, including Bulgaria and Romania entering the Union only in 2007. With the exception of Hungary and Croatia, economic growth surpassed the pre-accession levels. In part, this is attributable to the distinctly better performance in the EU-15 in the period after accession (Richter, 2007). Over the period 2004-2007, GDP growth in Latvia exceeded the already high value achieved at the beginning of the 2000s and rose to 11 per cent on annual average. This extraordinarily high growth rates were mainly backed by strong private consumption (supported by steeply rising credits) and to a lesser extent by investment growth. Also in Poland, the biggest of the new member states, GDP rose steadily from 2003 onwards and grew by 5.4 per cent per annum in the period between 2004 and 2007. Private consumption and investments had contributed most to that growth. Bulgaria and Romania, too, enjoyed rapid GDP growth of around 6 per cent p.a. over that period. In Hungary, economic growth slowed down from 2005 on to only 1.3 per cent in 2007 as a consequence of an austerity package to combat the mounting fiscal and external imbalances.

Table 3.1 GDP growth in selected EU countries

Receiving countries

	2000	2001	2002	2003	00-03 avg.	2004	2005	2006	2007	04-07 avg.
Denmark	3.5	0.7	0.5	0.4	0.5	2.3	2.5	3.9	1.8	2.7
Germany	3.2	1.2	0.0	-0.2	0.3	1.1	0.8	2.9	2.5	2.1
Ireland	9.4	6.1	6.6	4.5	5.7	4.4	6.0	5.7	5.3	5.7
Spain	5.0	3.6	2.7	3.1	3.1	3.3	3.6	3.9	3.8	3.8
France	3.9	1.9	1.0	1.1	1.3	2.5	1.9	2.2	2.2	2.1
Italy	3.7	1.8	0.5	0.0	0.8	1.5	0.6	1.8	1.5	1.3
Austria	3.7	0.5	1.6	0.8	1.0	2.5	2.9	3.4	3.1	3.1
Sweden	4.4	1.1	2.4	1.9	1.8	4.1	3.3	4.1	2.7	3.4
United Kingdom	3.8	2.4	2.1	2.8	2.4	3.3	1.8	2.9	3.1	2.6
EU-15	3.9	1.9	1.1	1.2	1.4	2.3	1.8	2.9	2.7	2.5

Sending countries

	2000	2001	2002	2003	00-03 avg.	2004	2005	2006	2007	04-07 avg.
Bulgaria	5.4	4.1	4.5	5.0	4.5	6.6	6.2	6.3	6.2	6.2
Latvia	6.9	8.0	6.5	7.2	7.2	8.7	10.6	12.2	10.3	11.0
Hungary	5.2	4.1	4.4	4.2	4.2	4.8	4.1	3.9	1.3	3.1
Poland	4.3	1.2	1.4	3.9	2.2	5.3	3.6	6.2	6.5	5.4
Romania	2.1	5.7	5.1	5.2	5.3	8.5	4.2	7.9	6.0	6.0
Croatia	2.9	4.4	5.6	5.3	5.1	4.3	4.3	4.8	5.6	4.9

Source: Eurostat

Table 3.2 Employment growth

Receiving countries	2000	2001	2002	2003	00-03 avg.	2004	2005	2006	2007	04-07 avg.
Denmark	0.5	0.9	0.0	-1.1	-0.1	-0.6	0.9	1.6	1.8	1.4
Germany	1.9	0.4	-0.6	-0.9	-0.4	0.4	-0.1	0.6	1.7	0.7
Ireland	4.6	3.0	1.8	2.0	2.3	3.1	4.7	4.3	3.6	4.2
Spain	5.1	3.2	2.4	3.1	2.9	3.5	4.1	3.7	3.1	3.6
France	2.7	1.8	0.6	0.1	0.8	0.1	0.4	0.8	1.2	0.8
Italy	1.9	2.0	1.7	1.5	1.7	0.4	0.6	2.0	1.1	1.2
Austria	1.0	0.6	-0.1	0.0	0.2	0.2	0.8	1.2	2.2	1.4
Sweden	2.5	2.1	0.0	-0.6	0.5	-0.7	0.3	1.7	2.3	1.4
United Kingdom	1.4	1.0	0.6	1.0	0.9	1.0	1.3	0.7	0.7	0.9
EU-15	2.2	1.4	0.7	0.5	0.9	0.7	0.9	1.5	1.6	1.3

Sending countries	2000	2001	2002	2003	00-03 avg.	2004	2005	2006	2007	04-07 avg.
Bulgaria	4.9	-0.8	0.2	3.0	0.8	2.6	2.7	3.3	2.8	2.9
Latvia	-2.9	2.2	2.3	1.0	1.8	1.1	1.5	4.8	3.5	3.3
Hungary	1.3	0.3	0.0	1.3	0.5	-0.7	0.0	0.7	-0.1	0.2
Poland	-1.6	-2.2	-3.0	-1.2	-2.1	1.3	2.3	3.3	4.4	3.3
Romania	.	.	.	0.0	.	-1.7	-1.5	2.8	1.2	0.8
Croatia	4.0	-5.4	4.2	0.6	-0.3	1.7	0.8	0.8	.	.

Source: Eurostat

Contrary to the beginning of the 2000s, when GDP growth was generated mainly by productivity growth which did not lead to additional job creation, employment growth in the sending countries became more robust in the second period. After 2004, in all countries except Hungary, the average annual employment growth surpassed the rates reported in the pre-accession years and was particularly strong in Latvia and Poland (3.3 per cent each).

The drop in unemployment is largely attributable to strong economic growth and rising employment coupled with increased migration of labour in all countries except in Hungary after 2004. In 2007, unemployment rates varied between 6 per cent in Latvia and 9.6 in Croatia. In three out of the six countries under consideration - Bulgaria, Latvia and Romania - unemployment in 2007 was even below the EU-15 average of 7 per cent. The decline was particularly pronounced in Poland, where the unemployment rate was reduced by almost 10 percentage points between 2004 and 2007.

Despite these successes, activity and employment rates remained low, particularly in Poland, Hungary and Croatia. Reasons underlying this situation go back to the 1990s,

when a large number of workers took advantage of early retirement schemes in order to avoid unemployment, while another explanation is to be found in the low female activity and employment rates. In Latvia, by contrast, activity and employment rates have already surpassed the EU-15 levels.

Table 3.3 Unemployment rates

Receiving countries	**2000**	**2001**	**2002**	**2003**	**00-03 avg.**	**2004**	**2005**	**2006**	**2007**	**04-07 avg.**
Denmark	4.3	4.5	4.6	5.4	4.7	5.5	4.8	3.9	3.8	4.5
Germany	7.5	7.6	8.4	9.3	8.2	9.8	10.7	9.8	8.4	9.7
Ireland	4.3	4.0	4.5	4.7	4.4	4.5	4.4	4.5	4.7	4.5
Spain	11.1	10.3	11.1	11.1	10.9	10.6	9.2	8.5	8.3	9.2
France	9.0	8.3	8.6	9.0	8.7	9.3	9.2	9.2	8.3	9.0
Italy	10.1	9.1	8.6	8.5	9.1	8.1	7.7	6.8	6.1	7.2
Austria	3.6	3.6	4.2	4.3	3.9	4.8	5.2	4.8	4.4	4.8
Sweden	5.6	4.9	4.9	5.6	5.3	6.3	7.4	7.0	6.2	6.7
United Kingdom	5.4	5.0	5.1	5.0	5.1	4.7	4.8	5.4	5.3	5.1
EU-15	7.7	7.2	7.6	7.9	7.6	8.1	8.1	7.7	7.0	7.7

Sending countries	**2000**	**2001**	**2002**	**2003**	**00-03 avg.**	**2004**	**2005**	**2006**	**2007**	**04-07 avg.**
Bulgaria	16.4	19.5	18.2	13.7	17.0	12.1	10.1	9.0	6.9	9.5
Latvia	13.7	12.9	12.2	10.5	12.3	10.4	8.9	6.8	6.0	8.0
Hungary	6.4	5.7	5.8	5.9	6.0	6.1	7.2	7.5	7.4	7.1
Poland	16.2	18.3	20.0	19.7	18.6	19.0	17.8	13.9	9.6	15.1
Romania	7.3	6.8	8.6	7.0	7.4	8.1	7.2	7.3	6.4	7.3
Croatia	.	.	14.8	14.2	.	13.7	12.7	11.2	9.6	11.8

Source: Eurostat

3.2.1 Wage developments in the sending countries

Wage differentials between the country of origin and the target country are considered as one of the motives for migration. As Table 3.4 shows, wages in the NMS are still very low in comparison to EU-15 economies (the table presents comparative Austrian wage levels), but they grew significantly along with high GDP growth over the last couple of years. This is particularly the case for Romania, Latvia, and Poland. The wage growth depicted in Table 3.4 is both due to domestic wage growth but also to ongoing (nominal and real) appreciation of the NMS currencies and hence, wages expressed in current Euro terms grew even more rapidly than in domestic currencies.

Table 3.4 Average gross monthly wages, total, in EUROs

	2000	2001	2002	2003	2004	2005	2006	2007
Hungary	337	403	504	541	578	638	648	736
Poland	472	557	544	497	501	586	636	711
Bulgaria	115	123	132	140	150	166	184	220
Romania	142	162	170	177	202	267	325	422
Latvia	267	283	297	298	314	350	430	566
Croatia	638	678	724	743	799	844	906	961
Austria	2390	2428	2483	2530	2577	2639	2708	2781

Source: wiiw Annual Database incorporating national statistics.

3.2.2 Economic and labour market outlook

In its economic outlook, the Economic Commission[63] has revised down the GDP figures for 2008 for the EU-27 to 1.4% (from 2% earlier) and in the Euro area to 1.2% (from 1.7%). This downward revision became necessary due to significant revisions in the member countries. Altogether, the situation is described as 'unusually uncertain' after the outbreak of the financial turmoil coupled with high inflation and declining business and consumer confidence. On the 3rd of November the EU-Commission published economic forecasts for the next two years where growth in the EU declines to 0.2 per cent and in the Eurozone to 0.1 per cent. However, the economic outlook has dramatically worsened in the last few months. In December, the IFO-Institute published a forecast which expects a decline in GDP by 1.1 per cent in the European Union and a decline by 1.3 per cent in the Eurozone. This strong drop in GDP would trigger an increase in the unemployment rate in the EU-27 from 6.9 per cent in 2008 to 8.1 per cent in 2009 and in the Eurozone from 7.4 per cent in 2008 to 8.7 per cent in 2009.

In the following a country by country assessment on the future development presented here is based on information obtained from the authors of the country reports for the receiving countries, the wiiw and recent macroeconomic forecasts by the EU-Commission, the IMF and research institutes in the EU member states:

As for the **UK** the outlook for 2009 is very weak. The repercussions of the credit crisis have started to be felt in the real economy, whereby the GDP is expected to decline by 1.5 per cent. Therefore, the unemployment rate is likely to increase from 5.5 per cent in 2008 to 7.2 per cent in 2009, while at the same time the inflation rate drops from 3.7 per cent to 2.1 per cent, as a result of falling input prices in particular of oil. Recently, the British Pound is under big pressure, because of the Bank of England's sharp drop in the official bank rate by 1.0 percentage points on the 4th of December.

[63] Interim forecast, September 2008

Of course, any weakening in the UK labour market and a devaluation of the British Pound will most probably have effects on in- and out-migration rates.

The **Irish** economy witnessed a sharp downturn precipitated by the world wide financial crisis and the collapse of the property market and construction sector. Recently published data shows that GDP fell in 2008 by 1.7 per cent, meaning that the Irish Economy is already in a recession, for the first time since 1983. Since the large influx of immigrants into Ireland from the mid 1990s onwards was driven by the booming labour market, the downturn in the Irish economy may see further falls in net migration in the months to come. In 2009 the economic downturn is likely to reduce the Irish GDP by an additional 1.7 per cent, which leads to a sharp rise in unemployment from 5.7 to 7.8 per cent. In Ireland the economic outlook is much worse than the outlook in the sending countries. Therefore, there should be a sharp drop in immigration rates and a sharp rise in remigration.

After a period of robust growth, the **Swedish** economy is entering recession at least in 2009. The GDP forecasts for 2009 dropped to -0.3 after a 1 per cent growth in 2008. A weaker outlook for consumption, investment and exports, as well as the negative effects of the international financial market crisis will contribute to the slowdown in the pace of economic activity and increase in unemployment from 6.1 to 6.8 per cent. However, since migration inflows to Sweden are low anyway, the downswing of the Swedish economy has no large impact on migration from the NMS.

The **Danish** economy growths by only 0.2 per cent in 2008 and is expected to shrink in 2009 by 0.3 per cent. The slowdown is due to the turmoil in international financial markets, weakening domestic and foreign demand, a cooling housing market and lower investment growth. The recession affects the labour market recently, the unemployment rate is expected to rise from 3.0 per cent in 2008 to 3.6 per cent in 2009, which is a strong increase given the initial low value of the unemployment rate, but still well below the EU-27 and Eurozone average.

Forecasts for 2009 indicate a decline in GDP in **France** by 1.0 per cent. Surveys show pessimistic expectations of managers affecting all sectors, notably the services sector and the construction industry. French household demand is weakening, too. Consumption is suffering from the rise in commodity prices and purchasing power should remain weak. As a result, the unemployment rate raises from 7.8 in 2008 to 8.8 per cent in 2009, which is above the average of the EU-27 and the Eurozone countries.

For **Germany,** most research institutes predict a decline in GDP by at least 2.0 percent in 2009. According to these forecasts, Germany would be the country most affected by the economic and financial crises both in the Eurozone and among the EU-15 countries. The forecasts are guided by a sharp drop in business and consumer confidence, which harms domestic demand. Additionally, exports are falling sharply, adding up to a heavy decline in overall demand. The labour market is heavily affected by these developments. While in 2008 unemployment was at a ten years low of 7.3 per cent, it is expected to rise to 8.5 per cent slightly below forecasts for the Eurozone average.

In **Austria**, a turning point in labour market developments is expected due to a fall in GDP by 0.3 per cent in 2009. Employment growth will weaken noticeably and will not suffice to reduce unemployment. Unemployment is estimated to increase from 3.5 per cent in 2008 to 4.2 per cent in 2009. However, the unemployment rate remains well below the EU-27 average of 8.1 per cent in 2009 and the Eurozone average of 8.7 per cent.

Outlook on sending countries

Growth in the NMS seemed to be largely decoupled from negative global impacts in September, but now the global recession is felt at least in the Baltic States and Hungary. Most other NMS countries experience a sharp drop in their GDP growth rates. The semi-sovereign monetary policies pursued in the major NMS bear many risks. Especially in Hungary the depreciation of the currency heavily increased the foreign debt burden of the economy, leaving nearly no room for a fiscal stimulus in this recession.

In **Bulgaria**, the sound GDP growth is likely to weaken. While domestic demand remains stable, export are under pressure. Obstacles remain for fixed investment, since the massive FDI inflows may weaken in the crisis.

In **Hungary**, economic growth was lower than in other NMS countries due to its fiscal consolidation. Economic growth picks up modestly (to 1.5 per cent) in 2008, but the economic outlook is unfavourable. In 2009 the GDP is expected to decline by 1.0 per cent, since exports which were the main engine of growth in the past two years will be hampered by the unfavourable international environment. By 2010 the shock of stabilisation will likely be over.

In **Poland**, the growth slowdown is due to less vigorous growth in investments. Foreign trade has been performing better than expected, but is going to decline during the financial and economic crises. From 2008 to 2009 the growth rate falls from 5.4 per cent to 2.0 per cent.

The **Romanian** economy continues to be somewhat overheated in 2008. Increasing interest rates proved unable to cool matters down. Wage surges, remittances and credit booms are fuelling aggregate demand and increasing inflation (7.9 per cent). In 2009 the inflation is expected to go down to 4.0 per cent while the GDP will only increase at 3.0 per cent.

Latvia, hit by a slump in the real estate market, faces not only a fall of investments but also a dramatic deterioration of household consumption in 2008. The burden of an overvalued currency furthermore puts pressure on exports and industrial production. Latvia will experience a decline in GDP in 2008 by 1.0 per cent and in 2009 a further decline of 3.0 per cent is expected.

The new member states as a whole experienced a strong growth in 2008 at 4.6 per cent, which is sharply reduced to 1.5 per cent in 2009 according to the forecasts. However, the

GDP in the Eurozone is declining by 1.3 per cent and the GDP in the EU-27 is declining by 1.1 per cent. Therefore, at the moment the economic outlook for the new member states is slightly better than that of the old ones. Since migration is heavily affected by the labour market conditions in the destination countries, inflows may decline and return migration may be enforced during the financial and economic crisis.

4 Migration patterns

4.1 Migration trends

4.1.1 Receiving countries

Emigration flows after EU accession were directed mainly to the UK and Ireland, two of the countries that agreed to permit free access to their labour market for nationals from the new member countries. On the other hand, inflows of migrant workers to Sweden - which also allowed free access to its labour market for NMS nationals - and Denmark (applying gentle transition rules) remained modest. Germany and Austria, imposing transitional rules, have experienced only a small influx of NMS migrants.

Though it is difficult to precisely estimate the net inflow of NMS-8 migrants into the UK, available data sources show that up to one million persons from these countries entered the UK over the 2004-2007 period, whereas close to 600,000 are currently residing there. Polish nationals account for slightly over 70 per cent of the migrant stock, followed by nationals from Lithuania (9 per cent) and Slovakia (7 per cent). Most recent data for 2008 suggest that the arrival rate of new migrants is slowing, which is also reflected by the falling number of applications according to the Working Registration Scheme (WRS).

For Ireland, information on net migration flows from the NMS is limited. Detailed data available only from 2004 onwards shows a rapid rise of inflows between 2004 and 2006, but a significant decline in new arrivals in 2007 and even more so in 2008. Census figures for 2006 indicate that about 120,000 NMS-10 citizens were living in Ireland, with approximately three quarters accounting for Polish or Lithuanian nationals. Data from the quarterly national household survey indicate that around 200,000 NMS citizens were living in Ireland at the end of 2007.

In both Denmark and Sweden, the stock of NMS nationals almost doubled after 2004, but the share in the total population remained low. In Denmark, inflows were particularly high in 2006 and 2007, which was partly due to a simplification of the NMS nationals' hiring procedure in May 2006 (Ivlevs, 2008a). Poland (accounting for more than half of total NMS inflows to Sweden), the Baltic States, and Hungary were the major sending countries after 2004, but there was also a sharp rise in inflows from Bulgaria and Romania following their EU accession in 2007. Possible explanations for the comparatively low inflow of NMS migrants into Sweden are the relatively low rates of job growth and vacancies on the Swedish labour market, the diversion of migration flows to the UK and Ireland due to the easier access to the labour market in those countries and 'not least that English is the language of those countries' (Wadensjö, 2007).

By contrast, inflows of NMS migrants into Germany and Austria remained modest. Restrictions to labour market access, together with a slowdown of the economy in the early years of enlargement, particularly in Germany, resulted in a diversion of migration flows to other destinations such as the UK and Ireland. By the end of 2007, about

554,000 nationals from the NMS-8 and 131,000 from the NMS-2 were residing in Germany, which corresponds to 0.8 per cent of the German population or 9.4 per cent of the foreign population in Germany. Due to revisions of the migration statistics, migration stock figures before and after enlargement are not comparable. Altogether, about 200,000 NMS migrant workers arrived in Germany over 2003-2007. Poland is the main NMS source country, followed by Romania and Hungary. Germany has traditionally been the main target country for migrants from Turkey and the successor states of the former Yugoslavia (dating back to the guestworker recruitment in the 1960s but also to the inflow of citizens of the former Yugoslavia due to the armed conflict in the early 1990s). However, the number of nationals from both the candidate and potential candidate countries had diminished from 3.1 million to 2.4 million between 2000 and 2007. There are at least two reasons explaining these developments: First, the return of refugees to the successor states of the former Yugoslavia and second, an increasing number of naturalisations particularly from the Turkish community (enabled by the Immigration Act introduced in 2000).

In Austria, immigration flows in 2004-2006 were resulting primarily from an increasing inflow of migrant workers from the EU-15, Germany in particular. Migration from the NMS rose only modestly, amounting to 15,500 persons. Despite some anecdotal evidence of circumvention of the existing restrictions towards immigration (registration of enterprises particularly in construction services), actual flows of labour migration from the NMS to Austria were substantially lower than was expected prior to enlargement in case of liberalisation (Huber and Novotny, 2008).

France has been a traditional destination for migrants from Africa (46 per cent of the total in 2005) and Asia (14 per cent), while NMS immigration is negligible, accounting for only 3 per cent of the total immigration flow. Interestingly, the inflow of NMS migrants rose up until 2003, but fell thereafter. Romania became the major sending country in 2005, while in 1994 Polish citizens represented the bulk of NMS nationals in France. This may change in the future, since from July 2008 on, the access of NMS-8 nationals to the French labour market has been fully liberalised. Restrictions for NMS-2 citizens will remain in force probably until 2014. Information on NMS migrant stocks confirms the dominating role of Polish and Romanian nationals, accounting for 77 per cent of total NMS migrants.

Immigration of NMS nationals to Spain has been characterised by two large regularisation waves in 2005 and 2007. Following the latter, immigrants from Bulgaria and Romania became the largest foreign migrant group, exceeding the number of immigrants from Latin America for the first time. Romanian nationals represent the largest community from Europe (39 per cent of NMS migrants), with their number increasing to over 600,000 in 2007.[64] Other relevant groups are those from Bulgaria (7.6 per cent of NMS migrants), while the share of Polish migrants is relatively small (4.3 per cent). Ukraine

[64] Between 2004 and 2007, the number of total immigrants increased by 690,000 (of which 520,000 were Romanian nationals).

comes next, while immigrants from the former Yugoslavia form only a very small community. An interesting feature of the immigration structure in Spain is the rising inflow of EU-15 nationals, in particular from the UK, Italy, Portugal, and Germany over the past five years. Only some of them come for work (in the tourism industry), while the majority arrives for residence purposes (Makovec, 2008b).

In the 1990s, Albanian nationals and citizens from the former Yugoslavia were the major immigrants from Europe in Italy. The number of former Yugoslav nationals reached a peak in 1994, while the inflows from Albania culminated in 1997. Immigration from Romania started to rise from 1997 onwards. Increases were particularly strong against the background of large scale regularisations. Together with the Albanian community, Romanian nationals (342,000) represented the largest migrant group from Europe in Italy in 2007, while the presence of other NMS migrants remained limited before and after enlargement (Makovec, 2008a). Instead, Ukraine became another important source country of Italian immigrants (ranking third among European migrants) as well as migrants from Moldova.

4.1.2 Sending countries

Polish estimates on the outflow of workers 'render a true post accession exodus': Polish citizens staying abroad for longer than 2 months increased from approximately one million in 2004 to 2.3 million in 2007 (Fihel et al., 2008). Over that period, the UK, Ireland, and Sweden became the three most important destination countries, while Germany and Italy attracting most Polish migrants before enlargement lost importance. However, if adding seasonal workers to the total migrant flows, Germany would remain the major target for Polish migrants. Migration from Poland to the UK, accounting for about half a million people, is considered as one of the most rapid and intense flows in contemporary Europe (Fihel et al., 2008).

In Latvia, political, social and economic changes in the early 1990s had a strong impact on the size and direction of the mobility. Under Soviet times an immigrant republic, Latvia turned to an emigrant country thereafter (Fihel and Krisanje, 2008). The strongest wave of migration was in 1992, when more than 50,000 people mostly of Russian origin left the country. After EU accession (up to 2006), most of the 40,000 Latvians emigrating to the EU-15 went to the UK and Ireland. These two countries were already important destinations prior to enlargement, but primarily for illegal work. Having accelerated rapidly during the first year after enlargement, outflow to the UK has been slowing from the third quarter of 2005.

Romanian migration data is limited to information on migrants who terminate their residence status in Romania. Information available for 1990-2007 reports a substantial rise in outflow migration (100,000) in 1990 and a smaller peak in 1995 followed by a decline up to 2002 and a slight increase thereafter. Migration patterns by destination countries show an ethnically driven outflow to Germany and Hungary in the first half of the 1990s, while Canada and the US gained importance thereafter. Since 2000, Italy

became one of the most important host countries of Romanian migrants, accounting for more than 20% of the migration outflows between 2002 and 2007 (Iara, 2008); Germany came next, providing for almost the same share in migration outflows. However, a clearer picture of the actual extent of Romanian migration, temporary in particular, can be gained from statistics of the major receiving countries (Italy, Spain in particular) since the mid-2000s (see above).

Data on Hungarians emigrants are only available from mirror statistics of the receiving countries. Hence, from a comparative perspective, the propensity of Hungarians to migrate is fairly limited: Only 1 per cent of Hungary's total working age population has been registered in other EU countries (Richter, 2008). Even in countries that opened their labour markets to NMS-8 nationals after 2004, the presence of Hungarian nationals is low.

4.2 Labour market outcomes

4.2.1 Diverging employment and unemployment rates

Research on the labour market performance of migrant workers comes up with mixed results. In the UK and Ireland, immigrants exhibit higher employment and activity rates than nationals and other migrant groups, suggesting that the bulk of NMS-8 migrants came primarily for reasons of work. In Italy, foreign males display by far higher employment and activity rates than nationals, particularly in the young and the old age groups, reflecting most probably the substitution of Italian nationals by foreigners in low skilled jobs and blue collar occupations (Makovec, 2008a). Similar results can be observed for Spain, where migrant workers (including all immigrants) have much higher and growing employment rates than nationals. The difference is even higher for non-EU citizens. A breakdown by NMS-2 and NMS-8 migrants shows that employment rates of the former exceed that of the latter quite considerably. However, the risk of unemployment for migrants is almost the same as that of natives in the UK (Upward, 2008) and greater for foreign nationals in both Ireland and Spain (particularly for females). In Ireland, first time job seekers are considered the main reason for the relatively high unemployment rate of NMS migrants.

By contrast, both in Sweden and Denmark, migrant workers from NMS perform less successfully than nationals, showing lower employment and higher unemployment rates. In Denmark, however, the incidence of unemployment depends on the source country, with unemployment rates particularly high for those migrants from non-Western countries. Unemployment rates for Polish and Romanian nationals, though much higher than those of the Danish nationals, have been on a steady decline since 2004.

Though possessing a similar skill structure as German nationals, NMS migrants perform only slightly better than other migrant groups on the German labour market. Both the shares of inactive and unemployed individuals are much higher than those of German nationals. Unemployment has substantially increased in 2000-2006, indicating that NMS

nationals have been over proportionally affected by the economic slowdown at the beginning of the 2000s (Baas and Brücker, 2008). Studies found that the difference between the unemployment risk of NMS migrants and German nationals is particularly high for better qualified individuals, indicating that the human capital required in the NMS cannot be easily transferred to the German labour market (Untiedt et al., 2007). In addition, NMS migrants are overrepresented in sectors such as agriculture, hotels and restaurants, and other low-paid services sector activities, where the unemployment risk is high (Untiedt et al., 2007).

In Austria, one of the most noticeable features of unemployment since the beginning of the new millennium has been a substantial increase in the unemployment of foreign nationals and consequently an increase in the native-foreign unemployment rate differential (Huber and Novotny, 2008). This was in part due to the fact that foreign workers tend to work in sectors which are more strongly affected by the business cycle. Groups of foreigners particularly affected were the traditional 'gastarbeiter' from Turkey and the former Yugoslavia, while the unemployment rates of Germans, Hungarians and to a lesser extent of Czechs and Slovaks were lower or almost equal to those of natives. Migrant groups from Turkey and the former Yugoslavia have in part very low qualification levels. According to recent research (Belot and Hatton, 2008 and Biffl, 2006), Austria is the country with the lowest share of highly educated migrants among the OECD countries.

4.2.2 Three sectors are dominating

As illustrated in Table 4.1, NMS migrant workers are strongly represented in agriculture, construction, hotels and restaurants as well as in low skilled manufacturing sectors.[65] As for Ireland, they are reportedly also slightly more likely than Irish workers to work shifts, evenings and weekends (Barrett and Bergin, 2007). In Denmark after enlargement, employment growth was particularly strong in construction and business services (e.g. accounting, book-keeping, legal activities, advertising etc. but also including building-cleaning activities), while employment in agriculture - playing a more important role before enlargement – remained almost unchanged. A breakdown by nationality shows that migrant workers from Poland and Estonia are more engaged than others in construction and those from Latvia and Lithuania in agriculture.

In the UK, NMS nationals are overrepresented in manufacturing, agriculture, and hotels and restaurants as compared to UK-born.

[65] We assume that information on sectors provided by the country case studies is based on the NACE classification.

Table 4.1 Main sectors of NMS migrants' employment

	Agriculture	Con-struction	Manu-facturing	Hotels and restaurants	Business services	Health care	Personal care	Other services
Austria	x	x	X	x			x	
Denmark	x	x			x			
France								
Germany	x			x				x
Italy			X	x				
Ireland		x	X	x				
Spain	x	x		x			x	
Sweden		x				x		
United Kingdom	x		X	x				

Note: Information on Austria includes all foreigners.

Source: Country case studies.

As for Sweden, a comparison of the sectoral employment composition between Swedish-born and NMS born migrants for 2005 shows that NMS born (particularly from Poland and the Baltic States) are overrepresented in the health care sector which is consistent with the main features of migrants before enlargement (female, higher education) and the high demand for labour in this sector. In addition, the Polish and Lithuanian born were more likely to be employed in construction than other NMS migrants. Compared to Swedish-born, NMS migrants were underrepresented in the construction sector. However, this pattern may have changed over recent years considering the high job openings rate in the construction sector.

Immigrant workers in Italy are mainly employed in low technology sectors and personal and domestic services.

4.3 Skill structure

Changes in the sending countries' migration structure have led to a noticeable improvement in the qualification structure of migrants (Huber and Novotny, 2008). Hence, the skill level of NMS migrants in most host countries is higher than that of other migrant workers and/or the respective nationals. However, they tend to work in jobs for which they are overqualified. This is particularly the case in the UK, where NMS-8 migrants are primarily employed in low skilled occupations, working as operatives or in elementary occupations (exceeding 60 per cent compared to only 18 per cent of UK-born workers). At the same time, NMS migrants have higher education levels (two years more) than UK-born workers, suggesting 'that in some senses NMS migrants are 'underemployed' relative to their education' (Upward, 2008). Research on Ireland has found that despite NMS migrants have higher educational levels than Irish nationals, they tend to be less qualified than previous migrants, particularly Irish nationals who returned

to Ireland from the mid 1990s onwards (Wright, 2008). Information on the Swedish experience available only for 2005 indicates that the share of individuals with at least two years of higher education is higher for those born in the NMS than for Swedish born. The educational level is particularly high for migrants from the Baltic States. Information on the education of migrants arriving after enlargement is missing.

A higher qualification of immigrants from the NMS-10 and NMS-2 compared to the native population is also confirmed by results obtained for Italy, which is mainly due to the age and skill structure of those immigrants (young and better educated). Overall, the share of medium skilled, rising in the past couple of years is the highest. Conversely, the Italian population has a considerable share of older cohorts with a low educational level; moreover, the educational level in Italy has been traditionally characterised by a very low share of high skilled compared to the EU-15. By contrast, migrants from most of the successor states of the former Yugoslavia and Turkey as compared to those from the NMS display a much lower level of education in Italy.

A survey on the skill profile of immigrants in Spain reveals a high concentration of medium skilled comprising about half of the NMS-10 and NMS-2 migrant workers. Differences occur when it comes to the high and low skilled, with the share of high skilled coming from the NMS-10 are more than double (22 per cent) that from the NMS-2. Conversely, the share of low educated immigrants from the NMS-2 is by far higher than that from the NMS-10. Again females exhibit a higher educational level than males. According to Fernandez and Ortega (2006) – including all immigrants – the Spanish labour market could absorb the huge number of migrant workers at the expense of allocating them to temporary jobs for which they are overqualified. For some sectors (e.g. services and construction) where the supply was scarce, immigrants were important in satisfying the demand for workers. This has also helped to alleviate pressures on wages.

For Germany, LFS data show that the education level of NMS migrants is below that of German nationals, but well above other migrant groups. For example the share of low skilled NMS-8 and NMS-2 migrants accounts for 20 per cent and 18 per cent of the respective working age population (against 14 per cent of German nationals), while that of the traditional guest workers from Southeast Europe amounts to 52 per cent. Workers from the Czech Republic and Poland are particularly well educated. It is interesting to note that the share of low skilled migrants in the working age population has increased over time (2000-2006). A comparison with other receiving countries, the UK in particular, shows that NMS migrants in Germany have a lower educational level than in other destinations and that it has deteriorated over time. This suggests that NMS migrants to Germany are less favourably (self-) selected regarding their education levels compared to other destinations (Baas and Brücker, 2008). Results for Austria - including total foreign born - indicate a fall of low skilled foreigners in the working age population and a rise of the medium skilled in 2004-2006, with the share of high skilled individuals remaining unchanged. This is primarily due to the high share of medium skilled German migrants as well as of NMS migrants.

Findings on the improvement of the skill structure of NMS migrants after 2004 obtained from the receiving countries are clearly confirmed by information available from the *sending countries*. Detailed research for Poland found that emigrants leaving the country during the 1990s were rather low qualified and very often pushed into informal activities due to heavy restrictions on the EU-15 labour markets – a situation which was very disadvantageous for the highly-skilled (Fihel et al., 2008). In general, persons with secondary vocational and vocational degree accounted for the major group of Polish emigrants before and after accession, with their share slightly declining after 2004. The situation changed after 2004: About 20 per cent of those who have migrated after accession had a university degree compared to 14 per cent of university graduates in the overall population of Poland. This proportion is even higher when it comes to females (see the chapter on brain drain below). Most of these migrants left for the UK and Ireland, which attracted younger and better educated migrants following their decision on a free access of NMS nationals to their labour markets. Fihel et al. (2008) argue that some young migrants who have left for other countries than UK, Ireland, and Sweden prior to enlargement might have moved to these three countries after accession.

As for Latvia, the proportion of university graduates was significantly higher among migrants (31 per cent) than in the overall population (21 per cent).

Research on Romanian migrants' educational level is limited to the pre-accession period. Stock data for 2000 on the available Romanian born nationals aged 15 and more in the main destination countries (except Germany) show the following picture: Low skilled – 34 per cent, medium skilled – 40 per cent and high skilled – 25 per cent. Skill levels differ considerably across destination countries, but also between Europe and overseas, the latter hosting primarily high skilled Romanian migrants. In Europe, for example, Austria and France host populations with comparable age structures, but with different educational levels (Iara, 2008). The average educational level of Romanian nationals living in Austria is much lower than of those living in France, where students take a large share.

4.4 Regional distribution of migrants

Migrants tend to settle in specific regions of their host countries, such as the proximity to an entry point, the presence of family members or members belonging to the same community and last but not least the economic attractiveness of the place of destination in terms of employment opportunities (see Chapter 8 in Part A; OECD, 2004). Research provided by the country studies gives some insight on the concentration of immigrants at regional level in the receiving countries, but also on some of the source countries' major sending regions.

Regarding the *receiving countries*, NMS migrants in the UK are concentrated most in London according to Labour Force Survey data, which is confirmed by results from the Accession Monitoring Report showing Anglia, the Midlands, and London were the most common locations. This distribution partly reflects existing clusters of NMS migrants

before enlargement. A more detailed analysis of NMS-8 migrants based on WRS registrations indicates high concentrations in certain local authorities in London (services and hospitality industries) and Eastern England (agriculture and manufacturing industries). However, anecdotal evidence suggests that this concentration of migrants has caused problems in terms of provision of local services such as health and education (Upward, 2008).

Similar to the UK, migrant workers in Denmark are most heavily concentrated in Copenhagen (50 per cent) and Copenhagen suburban areas (8 per cent). Jutland, the main agricultural region of Denmark, accounted for 26 per cent of the total net NMS inflows in 2006 and 2007 (Ivlevs, 2008). NMS migrants in Germany are concentrated in the South of West Germany.

In Austria, the majority (about 60 per cent) of employees from the NMS worked in the Eastern provinces of Austria (Vienna, Lower Austria, Burgenland).

Some minor information on regional concentration is available for France: Stock data from the 2004 census indicate that both Polish and Romanian nationals tend to concentrate in Ile de France, while other regions preferred by Polish migrants are Nord Pas de Calais and Lorraine. This confirms the findings drawn from Labour Force Survey data presented in Chapter 8 of Part A.

Research for Spain found that immigrants are mostly concentrated in large cities (Madrid and Barcelona) and in the Eastern regions of the country. Romanian nationals are located primarily in the regions of Aragon, Asturias, Cantabria, Castilla la Mancha (making up 40 per cent of the foreign population). They represent the second largest community in Castilla-Leon and Extremadura, and the third largest in group in Catalonia. Bulgarian nationals are the most relevant foreign nationality in Castilla-Leon (Makovec, 2008b).

NMS migrants in Italy are concentrated in Northern Italy and central regions (in smaller firms), while seasonal work is more common in the South – where illegal work is also more likely (Makovec, 2008a).

Hungary, from the point of view of a receiving country, shows an uneven geographical distribution of migrants. In 2007, almost two thirds of foreign workers worked in Budapest and its agglomeration and close to 20% in the economically high developed region of Central Tansdanubia (Richter, 2008).

Push factors have played an important role for migration when looking at the *sending countries'* regional context of the outflow: E.g. both in the pre and post accession period, most of Polish migrants (70 per cent and 67 per cent resp.) accounted for persons from rural areas and small cities (below 50,000 inhabitants). In the post enlargement period, the share of migrants from large cities has slightly increased to 24 per cent from 20 per cent prior to accession. Migrants are recruited mostly from Southern and Eastern Poland, either rural and underdeveloped regions or most populated areas (Fihel et al., 2008). Economic reasons were also the main drivers of migration with regard to the sending

regions in Latvia: About one quarter comes from the Eastern part of the country (Latgale) with the highest share of unemployment, and slightly less from Riga (low wages). Other regions such as Kurzeme, Vidzeme, Pieriga and Zemgale accounted for 11-16 per cent. Migrants from the Latgale and Zemgale (agricultural) regions tend to work in the UK, while those from Vidzme are more likely to emigrate to Ireland, suggesting that distinct social networks have emerged among migrants (Fihel and Krisjane, 2008).

For Romania, research found that migration flows are very much tied by settlements and regions, i.e. migrants from one village tend to migrate to the same settlement, and the importance of destination countries varies across regions of Romania (Iara, 2008). Sandu et al. (2006) investigated that migrants from the North Western region of Moldova tend to travel primarily to Italy, those from Transsilvania to Hungary, while flows to Canada were dominated by migrants from Oltenia. Muntenians had stronger preferences for Turkey, while migrants from Bucharest tended to choose Greece as their main destination.

4.5 Other socio-economic patterns

4.5.1 Gender

The gender composition of migrants differs from country to country. As for the *receiving countries*, in both Sweden and Denmark the importance of female migrants fell significantly compared to the pre-enlargement period. This was mainly due to the strong expansion of construction activities, while sectors such as health and social care - employing primarily females - became less important. For example in Denmark, the share of females in total migration flows from Poland, the main source country of NMS migrants fell from 61 per cent in 2000-2003 to 33 per cent in 2004-2007 (Ivlevs, 2008a). Conversely, German data suggest that in 2006, close to two thirds of migrant workers from NMS-2 and 55% from NMS-8 were females compared to 38% from the candidate and potential candidate countries and 46 per cent in the German labour force. Females are also dominating in the NMS migration flows in France both in the pre- and post-accession period. This applies particularly to those arriving for study reasons, the majority of which being females, coming in the 1990s primarily from Poland and lately from Romania.

Immigration in Spain is gender-balanced, without substantial gender-specific differences across sending countries (Makovec, 2008b).

In Italy, NMS immigration is gender-driven, which is particularly striking in the case of Ukraine. But also in the case of Polish and Romanian migrants females are dominating.

Experiences from the *sending countries* show that in Poland, both before and after enlargement, male emigrants were the dominant group, with their share even rising from 57 per cent prior to accession to 65 per cent thereafter. Compared to 47 per cent of men

in the adult population of Poland, this reveals high selectivity of outward migration with regard to gender (Fihel et al., 2008).

4.5.2 Age

NMS migrants are on average very young, and more likely in working age than other migrants and nationals of the host countries. In the UK, the average age of NMS-8 migrants is 30 years, while that of UK-born 39 years. The difference is even more pronounced for the share in the working age population: 83 per cent of migrants versus 58 per cent of UK nationals belong to this group. NMS migrants in Ireland are slightly younger (median age 29 years) than the native population (median age 33 years) and similar to the UK much more likely of working age. In Denmark, 56 per cent of the NMS-10 nationals are in the 20-29 years age group and another 19 per cent account for the age group 30-39 years. Swedish data taking into account also NMS citizens arriving prior to 2004 resemble this pattern, with the age group 15-34 years accounting for about half of NMS-10 migrants. In Sweden, the age group 35-54 years is also relatively important, accounting for about 30 per cent of the migrant stock (Ivlevs, 2008b).

In Germany, NMS migrant workers are only slightly younger than immigrants from the candidate and potential countries, but significantly younger than natives. NMS-8 and NMS-2 nationals account for 29 per cent in the 15-34 age group of the working age population, whereas German nationals account for 20 per cent. By contrast, NMS migrant workers are much less represented than Germans in the 50-64 age group. Over 2000-2006, the age of migrant workers from the NMS has only slightly increased (Baas and Brücker, 2008).

The age structure of NMS immigrants in France (based on flow data) remained unchanged after enlargement. The bulk of immigrants is very young, with the 20-29 years age group accounting for about half of total NMS nationals, and the 30-39 age group for another 20%. This is very likely due to the fact that one third of NMS nationals arrives in France for study reasons and a somewhat smaller percentage for reasons of family reunification. However, results from the 2004 census available only for Polish immigrants show that Polish nationals are much more represented in older age groups than other immigrants (Duval, 2008). This can in paret be explained by the fact that Polish immigration has a long tradition, e.g. about half of Polish immigrants residing in France in 1999 arrived before 1950 (Duval, 2008).

In Spain, NMS migrants tend to exhibit a higher share of working age individuals than other migrant groups, with the difference being particularly strong in the younger age groups (20-24, 25-29, 30-34). This implies that NMS migrants arrived primarily for reasons of work (Makovec, 2008b). By contrast, immigrants from the EU-15 are frequently retired persons who do not seek an employment.

In Italy, NMS migrants are concentrated most in the 25-44 age group, reflecting employment as the main reason to stay. Immigrants from the former Yugoslavia and

Russia tend to be even younger than those from the NMS, while immigrants from Ukraine are generally older (high presence of females in the age groups 50-59 years).

Looking at the age of migrants from the *sending countries'* perspective, research found that the age structure became significantly younger since enlargement. As for Poland, the age group 20-29 became the dominant one, increasing its share in total emigrants from 45% prior to enlargement to 52% thereafter. Female migrants were on average one year younger than males. This change in the age structure went along with the rising importance of Ireland and the UK among the destination countries, attracting in particular young migrants (Fihel et al., 2008). In the Latvian case, 62% of emigrants were in the age 15-40 years, with the 20-29 age group represented most.

The portion of Romanian migrants in the age 25-30 years grew significantly from about 30 per cent in the 1990s to above 50 per cent after 2001. Iara (2008) argues that this may reflect the increasing importance of family reunification as an entry mode of immigration under the restrictive immigration regime imposed by the host countries.

4.5.3 Duration and return migration

There is only limited evidence on the duration of migration episodes and return migration available at present. Aggregate figures on the duration of stay do not exist and it is too early to analyse return migration patterns of migrants from the NMS properly at the present state. As for Sweden, it was found that the proportion of the net immigration to total immigrant flows was about 90% for migrants from Poland, Lithuania, and the NMS-2, and 10-20 percentage points lower for migrants from Estonia, Hungary, and Latvia. This suggests 'that most migrants coming from the NMS stay there' (Ivlevs, 2008b).

Return migration has become an important topic in public and scientific debates on migration, particularly with respect to Poland.[66] However, at this stage it would be extremely difficult to provide an in-depth analysis of the phenomena. The available research rather exemplifies methodological difficulties than provides reliable data (Fihel et al., 2008).

4.6 Illegal immigration

Information on illegal migration on the side of the *receiving countries* is limited. The UK study offers some estimates on the size of the total illegal migration stock, which was put at 430,000 in 2001 (Woodbridge, 2005). Around two-thirds of illegal migrants (Farrant,

[66] As a good example the recent IPPR report may serve (Pollard, Lattore, Sriskandarajah, 2008). Authors provided an estimate of around 50 per cent of Polish migrants who were supposed to already leave the UK and come back to Poland. This estimation, however, is based on comparison of the data coming from completely different sources (WRS and LFS), both imperfect in assessing the scale of mobility (although for different reasons).

Grieve and Sriskandarajah, 2006) come from Africa and Asia. Of those from Europe, the largest nationality groups originated from Turkey, Serbia, Montenegro, and Romania.

Illegal migration became a major issue of political discussion in France (Duval, 2008). In 2005, the French Ministry of Interior has estimated illegal migrants at 200,000 to 400,000 persons. Roma, coming primarily from Bulgaria and Romania constitute one of the major groups of illegal migrants and are located particularly in Ile de France. An attempt offering payments for those willing to return to their sending countries has failed. The bulk of illegal migrants is employed in construction and agriculture, with the effects on employment and wages of nationals are still unknown (Duval, 2008). A comparison of social security records and LFS data sheds some light on illegal migrant workers in Spain. According to LFS data, in 2006 2.6 million immigrant workers were employed as against 1.9 million workers compiled by the social security registers, suggesting that about 670,000 foreigners had a job in the underground economy.

Illegal foreign work in Italy seems to concentrate in the tourism sector, particularly in the Southern part of the country (Makovec, 2008a).

As for the *sending countries*, some further insight into the issue of illegal migration is provided by Romanian research. Since available migration data do not cover short term migrants and exclude seasonal migrants and students, they naturally fail to register illegal migration moves (Iara, 2008). Horvát (2007), for example, quotes an estimate of 3.4 million Romanian nationals working abroad in mid-2007, of which around 1.2 million are legally employed. Romanian nationals travelling to the Schengen territory were required an entry visa up to 2001, while afterwards Romanian authorities introduced severe exit conditions, and finally some EU member states have imposed restrictions for Romanian labour (Iara, 2008). Practice, however, prompted to circumvent these constraints. According to an IOM survey (2005) quoted in Stan (2006), only slightly more than half of the migrant workers had been legally employed abroad.

There are also indications on illegal foreign employment in Hungary. In 2005, for example, the share of foreign born labour force accounted for 1.9% of the total labour force, while this population group made up 3.3% of the total population. Richter (2008) comes to the conclusion that illegal employment is even greater than indirectly reflected by statistics, particularly if considering foreigners arriving as tourists, undertaking occasional jobs, leaving and returning again. These 'working tourists' constitute an important part of work in agriculture, construction, and in home care services.

It seems that illegal migration is of some importance in Poland, too, which can be deduced from the rising arrivals of foreigners (Fihel et al., 2008). Also in Croatia, there are informal reports about illegal foreign employment, but no statistics or estimations are available on that segment of migrant workers (Vidovic, 2008).

5 Impact of migration on the economy and labour markets

5.1 Sending countries

5.1.1 Demography – Ageing societies

Almost all sending countries are facing ageing societies and a decline of their population. In some countries this trend is further aggravated by migration patterns, with the share of young people in the total emigration flow steadily on the increase over the past couple of years. Particularly for Bulgaria and Latvia, migration has become a serious problem due to its negative impact on population growth. In Latvia, persons aged between 20 and 39 years account for 63 per cent of all migrants. The situation in Romania has changed over time. While the age group of those between 20 and 40 years provided almost 30 per cent of the permanent migrants in the 1990s, this share increased to over 50 per cent after 2001. Though Poland resembles a similar migration pattern of young persons, overall migrants still represent a relatively small fraction of the population. Thus, demographic impacts both in the short and in the long run are difficult to assess, also because of the scant information about return migration. Furthermore, regional impacts cannot be excluded.

5.1.2 Labour and skill shortages enhance the demand for foreign labour

Over the past two to three years, the debate on growing supply problems for labour in general and skilled workers in particular has gained momentum in the NMS as more and more enterprises report problems in finding personnel. Labour migration has been perceived as having contributed significantly to these developments. Almost all countries face labour shortages in the construction sector, particularly Latvia (as the Baltic states in general), but Poland as well, where nearly every second firm is unable to fill its vacancies. This is also reflected by a high vacancy rate in construction, whereas the average vacancy rate in Poland is relatively low.

A similar situation is reported for Romania and Bulgaria, where large numbers of workers have left for Western Europe attracted by higher wages. According to a recent survey conducted in Romania (Serban and Toth, 2007), companies reported difficulties in hiring personnel in the construction, textiles, and catering and hotel sectors. These findings were also confirmed by an employer survey, where Romania is the country where employers have the most difficulty in finding the right people to fill vacancies world-wide (Manpower, 2008). In all these countries, employers blame labour shortages as being the limiting factor on the expansion of production.

However, labour and skill shortages should not be attributed exclusively to international migration. Other factors contributing to difficulties for firms filling vacancies may be business cycle effects (e.g. in construction), younger people remaining in education for longer periods, insufficient regional mobility within countries or ageing population.

Moreover, this phenomenon might underpin the structural problems besetting the NMS labour markets (Iara et al, 2008).

The impact on wages is mixed, depending on the country concerned. As for Poland, wage increases remained moderate in the 2004-2006 period, but showed some upward trend in 2007, particularly in agriculture and construction. Tight labour markets are among the driving forces of wage rises in Romania. In April 2008, the average net real wage was almost 15 per cent higher than a year earlier but unequally distributed among industries. Wage hikes were meagre in the automotive industry and in metallurgy, thus export competitiveness could be maintained at least until recent strikes enforced some adjustment. The highest wage growth was in the banking sector, in construction, and in trade - sectors that are booming based on domestic consumption. In the coming years, the currency may again start to appreciate and wage growth in euro terms can continue. This can be a stimulus for seeking jobs at home and not abroad (Iara, 2008).

One of the solutions combating labour shortages in the sending countries is to recruit workers from abroad. As far as information is available, the inflow of foreign workers is very low in most countries but increasing. Results obtained from the Polish Labour Force Survey post the number of foreigners employed at 58.5 thousand in 2006, the majority coming from Ukraine and Germany. The number of annual work permits varies between 10 and 15 thousand. Regarding the skills of migrants, there is a clear division between migrants from the EU-15, especially high skilled workers, and those from the post Soviet countries like Ukraine, Belarus, and Russia with lower skill levels. In Bulgaria, foreign nationals holding a permanent residency account for around 56 thousand, and they mostly originate from less developed countries. Some of them consider Bulgaria only as a transit country (Beleva, 2008). The prospect of Romania becoming a host country of labour migration is in its initial stages. Data for 2005 indicate a negligible number of immigrants (3700), more than half of which originated from Moldova.

Hungary has remained a relatively unimportant destination country of international migration (Richter, 2008). The annual inflow ranged between 13 and 22 thousand persons in the 1996-2005 period, with the three most important sending countries being Romania, Ukraine and Serbia, each with a substantial ethnic Hungarian minority (Richter, 2008). In some years China was a source of more than 1000 migrants. It is interesting to note that in 2005 and 2006, the number of work permits issued in Hungary has stagnated, while the distribution of migrants by source countries has changed: About half originates from Romania; Slovak citizens constitute around one quarter and the share of those from Ukraine rose to 12-14 per cent (Richter, 2008). Data from the Public Employment Service (2008) suggest that the number of work permits might have further declined in 2007. Hungary has only partially opened its labour market to Romanian and Bulgarian nationals, altogether for 247 professions, which however did not change the skill structure (primarily low skilled occupations which are filled by Romanian migrants, see Hars, 2008).

Croatia, too, has attracted a rising number of foreign workers, primarily from Bosnia and Herzegovina over the past few years. These workers are engaged primarily in shipbuilding, construction and tourism.

5.1.3 Remittances

Among the source country effects of work migration, the most important are economic effects channelled via migrants' remittances (Iara, 2008). However, the size and importance of remittances differ from country to country. With the exception of Poland, remittances as a share of the GDP do not play an important role in the new EU member states that joined the Union in 2004. In the two countries joining the EU in 2007, workers' remittances were more important for Romania, amounting to about 7 per cent of the GDP in 2006, than for Bulgaria (only 2 per cent of GDP). In Croatia, workers' remittances oscillated between 2-3 per cent of the GDP since the beginning of the 2000s. In general, it turned out that there is a strong relationship between the scale of remittances and the time spent abroad. Moreover, the decision on the use of remittances differs from country to country.

Results on the usage of remittances are mixed. As for Poland, the findings of two major studies (Kaczmarczyk and Łukowski, 2004) and an ethno survey conducted in four Polish regions (Fihel et al., 2008) on the scale and usage of remittances showed that the average annual savings of post-2002 migrants amounted to around 2 900 EUR (however, with a tendency to decline), while spending abroad accounted on average for less than 10 per cent of disposable income. The analyses demonstrated a clear relationship between the scale of remittances and the time spent abroad and the destination country (relatively higher in the UK and Ireland). Remittances contributed a sizable share to the households' budgets: On average over 40 per cent of total annual net income; in the case of migrants staying in the UK or Ireland, even more than half (for further details see country report on Poland).

Information obtained from a survey carried out in four structurally different regions and many categories of migrants indicates that almost half of the households used remittances for current expenses, while the share of those using remittances for investments was very low. However, investing in human capital has become a relatively new phenomenon. Respondents declared that they spend remittances either on their own education or on the education of their children.

Survey results about the use of remittances in Romania show that the propensity to remit is negatively related to education, but differs by receiving countries of Romanian labour migrants (Iara, 2008): Accordingly, the bulk of remittances from Spain and Italy (80 per cent each) is used for consumption purposes, while at least 27 per cent of remittances from Germany are channelled into investments. More than half of total remittances come from Italy and Spain, while only 4 per cent from Germany. There is a lack of actual information on the use of remittances in Bulgaria. Detailed examinations (Vladimirov et al., 2000) revealed that more than half of the return migrants had either invested into an

own business or in real estate. Concerning the role of remittances for the Bulgarian economy, Beleva (2008) concludes that the positive effects of the remittances have increased after 2000 and that 'remittances have been beneficial for emigrants' families, but have no strategic significance for the home country'.

The scale of remittances in Latvia is relatively low and, moreover, migrants' incomes are mostly spent on everyday needs, rather than on education and investment. Conversely, in Croatia, most of the remittances have rather been invested (real estate and land) than consumed.

5.1.4 Brain drain

There is a widespread agreement on the significant size of the outflow of highly skilled workers from the NMS (Balaz et al., 2004). However, in depth analyses of a possible brain drain are constrained by lack of data. From the available country studies, only the Polish report offers a detailed breakdown of migrants' skills in the pre and post enlargement period. Accordingly, the outflow of better educated nationals is higher than that of the resident population. The pre- and post-accession outflow from Poland was dominated by persons with secondary vocational and vocational degree. After 2004, however, the share of university graduates went up significantly. About 20 per cent of those who have migrated after accession had a university degree compared to 14 per cent of university graduates in the overall population of Poland (in 2004), which might indicate the existence of a brain drain. This is particularly the case for female migrants, out of whom 27 per cent were highly-skilled (Fihel et al., 2008). Research on Romania found similar results for the pre-accession period which may suggest a brain drain. Accordingly, among the migrants the share of those with tertiary education is much higher and the share of those with only primary education much lower than among the population in Romania, thus confirming the positive selection of migrant workers in terms of education levels (Iara, 2008).

However, this cannot be fully attributed to a brain drain because of the age structure of the migrants (mostly young people) and the fact of increasing average education in the younger generations. Thus, it is too early to assess at this stage whether these developments really indicate a brain drain, or whether the effects of an outflow of skilled workers will be compensated by higher investments in human capital und return migration. Furthermore, no information is available so far regarding the skill structure and skill acquisition of return migrants.

Research on Bulgaria found both positive and negative impacts of Bulgarian skilled migration (Beleva, 2008). Integration of Bulgarian scientists into the world scientific community, the possible return of at least a part of skilled emigrants and the increasing share of students studying abroad are considered positive. On the negative side, it was found that the migration of highly skilled had affected particularly those professional areas where education is the most expensive (e.g. medicine, biology, IT technologies). Furthermore, massive migration of skilled personnel had detrimental effects on (R&D)

institutions, esp. in the initial stage of transition. This has led to a decline in the total number of scientific staff and changes in its composition (Beleva, 2008).

Hungary does not provide any statistical data for brain drain. Anecdotal evidence points at relevant emigration of Hungarian physicians to the EU-15 which reflects the very low salaries of this professional group in Hungary. Labour shortage reported in the press in professions requiring specific skills coupled with insufficiencies and rigidities of vocational training in Hungary predict an increasing inflow of migrants possessing these skills.

Croatia is reportedly a country with a high emigration rate among the highly educated. However, the actual magnitude is unknown because 'the brain drain issue has been neglected for years and is still insufficiently investigated' (Adamovic and Meznaric, 2006). During the 1990s, figures on a dramatic brain drain were in circulation, based on political motives rather than on well documented figures.[67]

5.2 Impacts on receiving countries[68]

Empirical research on the labour market and macroeconomic effects of immigration has been less extensive in Europe than in the US. Even less extensive is empirical evidence on the specific effects of post-enlargement Eastern European immigration, given the recent incidence of such migration and the time lags in the production of data and research. In line with the fact that the bulk of NMS-8 work migration was directed to the UK and Ireland, most recent research has studied the effects in these countries and in Germany. Below, we present a summary picture of the country findings on the effects of labour migration from the new EU members on labour markets, macroeconomic aggregates, public revenues, and public services in the receiving countries, and on the immigrants themselves.

5.2.1 Labour market and macroeconomic effects

The consensus emerging from both pre- and post-2004 empirical research on the labour market effects of immigration in Europe is that such effects are small to negligible. Macroeconomic effects are held to be positive but comparatively small, if per capita adjustments are made.

For the UK, it is found for the pre-2004 period that immigration mainly has small negative effects on the earnings of incumbent immigrant workers, and on wages at the low end of the wage distribution (Manacorda et al., 2006; Dustmann et al., 2008).

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[67] According to some ‚political estimates' about 140 thousand highly skilled had left the country in the past decade. Adamovic and Meznaric (2006) argue that this would mean that in the last ten years Croatia lost almost the whole contingent of graduated students. A former Minister of Science and Technology stated in 2003 that 4738 highly educated citizens emigrated during 1991-2001 and added that the actual size has reached 10 thousand (Bozic, 2007).

[68] Chapter 5.2 was kindly prepared by Anna Iara (wiiw).

Research on Austria in that period has reached similar conclusions (Huber, 2008). Conversely, for Ireland, a simulation of pre-enlargement migration impacts suggests wage compression at the high end of the skill distribution, which results from the large share of the high skilled among the migrants in that period (Barrett et al., 2006). Research on Italy claims that natives and immigrants are complements rather than substitutes so that immigration does not have adverse effects on natives' wages (Gavosto et al., 1999; Vellosio and Venturini, 2006). From the pre-enlargement studies on Germany, the stylised fact emerges that immigration had small adverse labour market effects, with elasticities of wages and unemployment with respect to the share of immigrants around -0.1 and 0.1 respectively (Brücker et al., 2008).

The post-enlargement evidence is inconclusive on the labour market effects of immigration from the new EU members. Research on the UK has failed to detect an impact of Eastern EU immigration on the wages of natives. Instead, survey findings suggest that such immigration has helped alleviate labour and skills shortages, and that employers prefer these recent immigrants because of their comparatively high productivity (Upward, 2008). For Ireland, there is indicative evidence that wages have grown less in sectors with large immigrant inflows (OECD, 2008): The difference to the earlier findings for Ireland mentioned above may result from the different occupational distribution of the present migrants. The simulation exercise for Germany carried out within the present project corroborates the stylised facts mentioned above.

Looking at the macroeconomic effects of Eastern EU immigration in the receiving countries, for the UK it is held that recent immigration had a positive impact on GDP, amounting to about 1 per cent, of which one fifth can be attributed NMS migration (Riley and Weale, 2006). This does not necessarily translate into increased GDP per capita for natives. Irish studies have found higher total GDP effects with both pre- and post-enlargement data, but in the latter case, an immigration related rise of per capita GDP of a mere 0.7 per cent is found (Barrett et al., 2006; Barrell et al., 2007). Positive macroeconomic effects – the moderation of inflation and the alleviation of labour shortages – have been attributed to NMS immigration to the Nordic EU countries (Dolvik and Eldring, 2008).

By and large, the findings in the literature support our simulation results presented in Chapter 5 of Part A of this study.

5.2.2 Effects on public revenues and spending

The fiscal impacts of Eastern European immigration have not yet been thoroughly evaluated so far. For the UK, it is argued that most NMS migrants make a positive fiscal contribution because of their specific demographic and labour market characteristics. Indeed, NMS migrants to the UK show high rates of employment, so that only very low numbers have received benefits. As concerns education services, the UK has experienced a recent increase in pupils whose first language is not English, as well as higher rates of churning among pupils, which compose additional costs on the education system. The

geographical distribution of these phenomena suggests however that they are not solely driven by NMS immigration. Looking at health services, the NMS are likely to under-use these because of their low age. NMS nationals may have put some strain on public services however in the case of high concentration of non-registered migrant inflows, because local public services receive funding from the central government based on population estimates (Upward, 2008).

For Ireland, it is similarly claimed that the NMS immigrants make a net contribution to public budgets because of their low age, good health and high employment rates (Wright, 2008). Figures for Sweden – which allowed immediate access of NMS immigrants to welfare benefits – also show that only very few citizens of the NMS applied for social assistance, showing that fears of welfare tourism were lacking any grounds (Wadensjö, 2007; Dolvik and Eldring, 2008).

5.2.3 Effects on immigrants

Post-2004 research has evaluated the earnings of the recent NMS migrants in the UK and Ireland. As described above, only a minority of the new EU migrants in these countries possessed low education, while many of them have assumed menial jobs.

For Ireland it has been found that, controlling for education and experience, NMS migrants had an earnings disadvantage of up to 45 per cent compared to natives, which implies evidence of lower returns to human capital, especially for those with higher education levels (Barrett and McCarthy, 2007). Also, it has been documented that the occupational attainment of the NMS immigrants has been poorer than that of natives, and no signs of a closing of the gap have emerged so far. The earnings and occupational disadvantage has been found to be higher for NMS migrants than for other immigrants (Barrett et al., 2006; Barrett and Duffy, 2008). For Polish migrants to the UK, sizeable disadvantages in terms of returns to education have been documented as well (Drinkwater et al., 2006). In the framework of the present project, Upward (2008) presented new regression findings on the returns to education of NMS-8 migrants in the UK. He confirms their large disadvantage in the returns to education against both natives and earlier immigrants, and shows that this disadvantage mainly arises because of the occupational structure assumed by these migrant workers. Again, it is too early to study the over time dynamics of occupation-skill matching.

6 Conclusions

The post-accession period was characterized by an upswing in the business cycle in the EU-15, accompanied by substantial employment growth, particularly in Ireland and Spain. This period was also a clear success in terms of GDP growth for most sending countries, and employment growth became more robust than in the pre-accession period, whereas unemployment fell significantly. This drop was largely attributable to the strong GDP growth and, to a lesser extent, to labour migration (e.g. in Latvia, Poland and, probably so, in Romania).

Economic and labour market prospects for the years to come are uncertain. It is likely that the main destinations such as the UK and Ireland will face a severe recession in 2009, while the situation in other important countries such as Germany is very uncertain. In some important sending countries, such as Poland and Romania, it is likely that they are less severely affected by the global down-turn since they are less integrated into the financial markets and depend less on foreign trade.

Emigration flows after the 2004 EU enlargement round were mainly directed to the UK and Ireland, two of the countries that agreed to permit free access to their labour markets for NMS nationals, while Italy and Spain became important destination countries following regularization programmes and the EU accession of Bulgaria and Romania in 2007. By contrast, there was only a modest inflow of NMS migrants to Germany and Austria, as a result of the transitional arrangements imposed in these countries after 2004.

Research on the labour market performance of migrant workers has produced mixed results: In the UK, in Ireland, and in Spain, NMS migrant workers exhibit higher employment and activity rates than other migrant groups and nationals, while the incidence of unemployment is either the same or, in most cases, higher. In Germany and Austria, NMS migrants perform only slightly better than other migrant groups; unemployment of NMS nationals has even steadily increased in Germany over the past few years.

NMS migration is female-driven in Italy, Germany, and France whereas a strong decline of female migrants is observed in Sweden and Denmark due to rising employment of migrants in the construction sector. By contrast, Poland (as the major sending country) reports a strong increase of male emigrants, accounting for nearly two thirds of the total outflow.

NMS migrants are young and well educated, particularly in the UK and Ireland. In most host countries the skill level of NMS migrants is higher than that of other migrants and/or the respective nationals. However, they tend to work in jobs for which they are overqualified. Econometric research for the UK found a considerable gap in the returns to education for the migrants. Part of this gap is found to be related to the occupational choice of the migrants.

NMS migrants are strongly represented in agriculture, construction, hotels and restaurants, and in low-skill manufacturing sectors. In Poland (and probably so in Romania) there is a growing share of outward migrants with university degrees (higher than that of the resident population), particularly females, suggesting a certain brain drain.

Migrants from the NMS tend to settle primarily in urban areas (UK, Denmark, Spain), and to a lesser extent also in agricultural regions. From the sending countries' perspective, migrants are mostly recruited from rural and underdeveloped regions (e.g. in Poland, Latvia).

Information on illegal immigration is scant, but it is an important political issue in France and Spain. As for the sending countries, illegal emigration from Romania is probably very high.

In some sending countries (Bulgaria, Latvia), the ongoing decline in population is further aggravated by migration patterns, with the share of young people in total migration flows steadily on the increase. Skill shortages are another problem faced by sending countries, but should not be attributed exclusively to international migration. Other factors contributing to difficulties for firms filling vacancies may be business cycle effects, younger people remaining longer in education, or insufficient regional mobility within countries. Some countries (Poland, Hungary, Romania, and Croatia) have started recruiting workers from abroad, but still in small numbers. Remittances have been significant in a number of source countries and have been mainly used for consumption, rather than investment purposes.

The consensus emerging from both pre- and post-2004 empirical research on the labour market effects of immigration in Europe is that such effects are small to negligible. Macroeconomic effects are held to be positive but comparatively small if per capita adjustments are made.

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