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

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Country Study: Germany

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Abstract

In this report we analyse the impact of migration from the new member states to Germany and the possible implications of a free movement of workers. We moreover assess the economic conditions for absorbing additional labour supply. The German economy experienced an economic downturn in the business cycle in the beginning of this decade which was accompanied by increasing unemployment. As a consequence of the economic conditions and the transitional restrictions for the free movement of workers, immigration from the new member states has been very modest in Germany. Migrants from the NMS are better educated than other foreigner groups, but the average education is slightly below that of the native population. However, the unemployment rates of the migrants from the NMS in Germany are relatively high.

The economic conditions in Germany have substantially improved in 2006 and 2007. The unemployment rate has declined from its post-war peak of 10.6 per cent in 2005 to 7.3 per cent in 2008[1]. In 2009, the economic outlook is gloomy; obstacles for the economy remain due to the ongoing financial market crises, cautious consumers, and an economic downturn by Germany's main trading partners.

However, the empirical literature finds that the effects of immigration on wage and employment are small in Germany. A 1.0 per cent increase of the labour force through immigration reduces wages by 0.1 per cent and increases the unemployment rate by 0.1 percentage points according to most studies. This finding is confirmed by a CGE simulation we present in this report. Thus, it is unlikely that immigration from the new member states will affect labour markets in Germany to a large extent. Nevertheless, the high unemployment rate among the immigrant population from the NMS is reason for concern labour market policies have to address, irrespective of the time when the free movement of workers is introduced in Germany.

The views and opinions expressed in this publication are those of the authors and do not necessarily represent those of the European Commission.

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[1] Source: Labour Force Survey adjusted series.

Contents

1 Introduction

Germany has been the main destination for migrants from the new member states (NMS) in the EU-15 before the EU's Eastern enlargement. This position has changed in the course of the enlargement process: In 2000, 58 per cent of the immigrants from NMS-8[2] and 46 per cent of the immigrants from Bulgaria and Romania in the EU-15 resided in Germany. By the end of 2007, this share has dropped to 30 per cent in case of the NMS-8 and to 10 per cent in case of the NMS-2.[3] The net inflow of migrants from both the NMS-8 and the NMS-2 has been moderate since 2004. The diversion of migration flows from the new member states away from Germany towards other destinations such as the UK and Ireland in case of the NMS-8 or Italy and Spain in case of the NMS-2 can be traced back to several factors such as high unemployment and slow economic growth in Germany at the beginning of this decade. The main factor, however, is the selective application of the transitional arrangements for the free movement of workers. While other destinations such as Ireland and the UK have opened their labour markets, Germany largely maintained the restrictions on labour mobility for the new member states which had already been in place before enlargement.

The objective of this country study is to analyse the impact of migration from the new member states on the German economy and on the German labour market. Given the large size of the German economy and its geographical proximity to the new member states, Germany is still one of the most affected receiving countries in the EU, although its immigration share has substantially declined during the last years. The German case is also highly relevant from a policy perspective, since the decision on the prolongation for the third phase of the transitional arrangements on the free movement of workers for the NMS-8 is due in 2009 and for the second phase in case of Bulgaria and Romania by the end of 2008. Therefore, we also discuss the implications of a removal of the remaining immigration barriers under the current conditions in the German labour market in this report.

We start with an analysis of the macroeconomic situation in Germany since the beginning of this decade. The slow-down of economic growth and high unemployment has been the main background for the suspension of the free movement of workers from the new member states in Germany. However, the situation in the labour market has considerably improved during the last two years, such that the situation on the German labour market, even if we consider the financial and economic crisis, will not be worse than the EU-15 average in 2009 (Section 2). Section 3 briefly presents the institutional conditions for labour mobility from the new member states in Germany, the key trends in migration from the new member states and the candidate countries, the human capital

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[2] The abbreviation "NMS-8" summarises the eight new member states which joined the EU at the 1st of May, 2004: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, and Slovenia.

[3] The NMS-2 comprises Bulgaria and Romania, who joined the EU at the 1st of January, 2007.

characteristics of the immigrant workforce, and the participation of immigrants from the NMS in the German labour market. Section 4 reviews the literature on the impact of migration from the new member states on wages, employment, and economic growth in Germany, and in Section 5 we present our simulation results which are based on an applied equilibrium model. Finally, Section 6 draws conclusions for the free movement of workers.

2 The German Economy and the German labour market, 2000-2008

2.1 The development of the economy and labour markets before EU enlargement

The year 2000 marks a turning point in the macroeconomic development in Germany. The German economy entered a period of stagnation and recession after the year 2000 which lasted for 5 years. Investment in capital declined sharply from +9.9 per cent in 2000 to -7.6 in 2002 and was still reduced by 2.3 per cent in 2003. Together with shrinking private consumption (+2 per cent in 2000 to -1 per cent in 2002) and declining growth rates of international trade, which suffered from a downturn of the world economy at that time, this resulted in a recession of the German economy: The real GDP shrank in the first quarter of 2002, and the second, third, and fourth quarter of 2003. As a consequence, the real GDP declined by -0.2 in 2003. Nevertheless, in the last quarter of 2003 exports began to rise, caused by an upswing in the world business cycle.

The labour market lagged the macroeconomic downturn after 2000. In 2000 and 2001 unemployment was still reduced by 211,000 persons in 2000 and 37,000 persons in 2001. Consequently, employment expanded by 675,000 in 2000 and by 175,000 persons in 2001. In 2002 unemployment started to increase by 209,000 persons and increased by another 316,000 persons in 2003. At the same time, employment shrank by 241,000 persons (2002) and 421,000 persons (2003). These figures tend to under-state the actual increase in unemployment, since a revision of the labour market statistics reduced unemployment by approximately 150,000 persons and active labour market policies by another 81,000 persons statistically.

Altogether, employment declined in Germany by about 660,000 persons in the two years before the EU admitted the eight new member states from Central and Eastern Europe in May 2004.

2.2 The development of the economy since EU enlargement

The period from 2004 to 2007 can be divided in two sub periods of two years each. The first sub period is characterised by slow economic growth (1.1 per cent in 2004 and 0.8 per cent in 2005). Growth in West Germany was hereby more stable than growth in East Germany. The West German economy achieved a real GDP growth of 1.3 per cent in 2004

and 0.9 per cent in 2005, while the GDP growth in East Germany declined from 1 per cent in 2004 to 0.2 per cent in 2005.

After 2005, the German economy experienced a robust upswing of the business cycle, particularly in West Germany. The real GDP increased there by 3 per cent in 2006 and by 2.5 per cent in 2007, while the growth rate in East Germany stands at 2.2 per cent in both 2006 and 2007.

The upswing is based on two pillars. First, rising investments is the prime pillar which is so far not affected by the financial market crises in the world economy. The second pillar of the upswing is rising exports due to the growing competitiveness of the German economy. Even the appreciation of the Euro against the Dollar had no large impact on exports and reduced the dynamic growth of exports only moderately. The weak part of the current upswing is still consumer spending, which did not increase during the last three years as is usually expected at this stage of the business cycle. Since fears of an economic downturn evolve in 2008, consumer spending seems to remain at a low level.

The weakness of consumer spending corresponds with the rising international competitiveness of the German economy. In the last decade, moderate wage negotiations accelerated the competitiveness of the German export industries but weakened consumption.

Beside a reduction in unit labour costs, external factors fostered the export boom of the German economy. The investment demand of foreign countries expanded the demand for German goods. Moreover, the German economy also benefited from higher oil price by rising exports to OPEC countries. Finally, it is worth noting that the real estate market in Germany is not much affected by the crisis of real estate markets in the US and other countries, since the German economy did not experience a bubble in this market. Costly estate price adjustments are therefore unlikely to happen in Germany. Nevertheless, German banks are heavily engaged in US financial markets. This led to a near bankruptcy of the IKB bank as well as the "Landesbank" of Saxony and may harm other banks, too.

2.3 Labour market developments since enlargement

The labour market in the years 2004 to 2007 followed the trend of the business cycle. In 2004, the unemployment rate amounted to 10.1 per cent and achieved it post-war peak of 11.1 per cent in 2005. Following the labour market and social security reform in Germany which was implemented by the first of January, 2005, Germany experienced a substantial decline in unemployment. The unemployment rate was reduced to 7.8 per cent (7.4 per cent ILO concept) by May 2008, its lowest value since 1993. This large reduction of the unemployment rate is unusual for the German business cycle and outpaced previous upswings (IAB, 2008).

The present increase in employment particularly reduces long-term unemployment in Germany: It was reduced by 17.3 per cent in 2007, which is stronger than the decline in unemployment in general (-15.3 per cent). The employment growth in West Germany

was with 1.6 per cent 0.1 per cent slower than in the Eastern part. Nevertheless, the gap between the unemployment rates of 6.8 per cent in West Germany and 13.9 per cent in Eastern Germany remains at 7.1 percentage points still very high. This is particularly relevant for migration from the NMS, since the overwhelming share of the NMS migrants resides in West Germany.

The present upswing in the German labour market also changes the structure of employment. In past business cycles, the German economy lost in particular jobs subject to social security contributions during downturns, while it created more jobs in segments of the labour market not subject to social security contributions during upswings. In 2006 and 2007, this turned upside down. The growth of jobs which are subject to social insurance contributions is now stronger than the growth of employment in general. This development reduces pressures on the social security system.

The present upswing of the German economy is accompanied by a shrinking population and declining immigration. The population in Germany declined between 2004 and 2005 slightly from 83,534 million to 82,262 million, while the labour force increased from 38,749 million to 39,659 million. At the same time, net immigration declined in Germany to about 70,000 persons p.a., which falls short from its long-term average of some 200,000 person p.a.

2.4 Outlook

The real growth of GDP in 2008 was slower than in 2007; the growth rate declined to 1.3 per cent. The economic situation is exceptionally uncertain. The downswing of the world economy and the global financial market crises has terminated the economic upswing in Germany already in the last quarter of 2008. Additionally, the German government bailed out at least three banks, the IKB, the Hypo Real Estate and several state owned banks (Bayerische Landesbank) and set up a rescue plan for the bank branch. The second biggest private bank in Germany, Commerzbank and several banks from car companies (VW-Bank, Mercedes-Benz Bank) applied for this plan. The financial market turmoil is likely to affect the real economy via the channel of investment. Additionally, the economic downturn in other European countries like the UK, Spain, Ireland, and outer European countries like the US harms Germany's exports. That's why business confidence (as measured by the IFO-Index) dropped to a five year low and the industrial production contracted sharply in 2008. Against this background, the German government plans to stimulate economic activity by an increase in government spending and a temporary tax deduction for investments.

Economic forecasts are extremely uncertain. The recent economic outlook of most research institutes predict a GDP decline of 2.0 per cent (RWI-Essen), 2.2 per cent (IFO) and 2.7 per cent (IfW) under the condition that the rescue plan helps to avoid a big bank failure. Furthermore, lower inflation is expected to slightly increase households spending while exports decline sharply and investment is strongly reduced. All research institutes

expect the recession to last at least until 2010 (IFO, IfW), which leads to strong labour market effects.

According to the economic forecast of the IFO Institute, the economic downturn is transferred to the labour markets already in 2009. After good labour market figures in 2008, where the employment increased above 40.3 million persons and unemployment is at a 7.8 per cent low, a contracting economy in 2009 will increase unemployment according to an IFO forecast by at least 200.000 persons. This increase already reflects a reduction in potential employment by 130,000, which is damping the rise in unemployment. Due to this comparable slow increase, the IFO-Institute expects the German unemployment rate at 8.0 per cent in 2009, which is below both the Eurozone and the EU-27 estimates. However, the economic and labour market conditions in 2009 depend heavily on the reaction of exports on the economic and financial crises.

Altogether, the unemployment rate in Germany has fallen substantially during the last three years. In 2009, it will fluctuate around the average unemployment rate in the Eurozone and the EU-15. Moreover, it is worthwhile noting that the German economy is characterised by large regional imbalances in unemployment rates, particularly between West and East Germany. Since the overwhelming share of the migrants from the NMS moves to West Germany, and particularly to the prosperous regions in the South of West Germany, the unemployment rate in the affected parts of Germany is well below the national average.

3 Institutional framework and labour migration from the new member states

3.1 The institutional and legal background

Germany decided to utilise the transitional arrangements for the free movement of workers when the NMS-8 joined the EU at May 1, 2004. The same rules as for workers from the NMS-8 apply for workers from Bulgaria and Romania after their accession to the Community at January 1, 2007. The entry for workers from the NMS is regulated by the "Act on the Access to Labour Markets in the Context of the EU Enlargement" [4] from April 28, 2004. This law suspends the free movement of workers. The access to the German labour market for workers from the new member states is largely regulated by bilateral agreements, which have been concluded already before enlargement. These agreements open up the access to certain branches of the German economy and certain activities there. The employment of workers from the NMS requires a temporary or permanent work permit. Short-term temporary work permits are inter alia granted to seasonal workers, to contract workers, to so-called 'new guestworkers' in certain sectors, and to some workers and commuters in border regions ("Grenzarbeitnehmer"). Quantitatively

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[4] „Gesetz über den Arbeitsmarktzugang im Rahmen der EU-Erweiterung", Bundesgesetzgesetzblatt I 2004, 28th of April, 2004 (now § 284 Sozialgesetzbuch III (SGB III)).

important among these categories are only the permits for seasonal workers, and, to a lesser extent, permits for contract workers.

For longer term and permanent work permits beyond these categories similar rules as for other nationals from third countries apply, although a preferential treatment is granted to workers from the new member states compared to non-EU nationals. The German immigration act[5] distinguishes less-qualified, qualified and highly qualified workers. Less-qualified workers can receive residency permits only for humanitarian, political or family reasons. For qualified workers, a temporary work and residency permit is only granted if the position cannot be filled with German or other EU citizens. In contrast, highly qualified workers can receive a permanent work and residency permit upon arrival. The German immigration act defines scientists with a specific expertise and other senior academic staff as highly qualified persons. Individuals in leading positions in the business sector can receive a permanent residency permit as well if their income is twice as high as the social security ceiling for the health insurance, which corresponds to an annual income of about 85,000 Euros in 2007. Note that workers from the NMS receive a preferential treatment vis-à-vis non-EU citizens particularly in the category of qualified workers. Moreover, citizens from the new member states who have worked legally for more than 12 month in Germany qualify for a permanent work and residency permit.[6]

Germany also applies transitional arrangements for the free trade of services. Based on the accession treaties, the posting of workers is restricted in the construction sector, the cleaning sector, and similar branches. The entire list comprises about 330 activities for which restrictions can be imposed.

To sum up, Germany maintained the restrictions for the labour market access for citizens from the new member states which have been in place already before enlargement. It grants, however, about 300,000 permits p.a. for seasonal workers mainly in agriculture both before and after enlargement, and between 20,000 and 40,000 permits p.a. for contract workers with a declining tendency. Similar to third-country nationals, workers from the NMS can also apply for other work permits if they fulfil the criteria of the German immigration law. Moreover, family reunification is an important channel of entry since the size of the immigrant community from the new member states is relatively large.

The EU enlargement changed – beyond the preferential treatment of nationals from the NMS vis-à-vis third country nationals – mainly the legal opportunities for self-establishment, which are not subject to transitional arrangements. Individuals from the NMS can thus work as self-employed and establish businesses without any legal restrictions in Germany. The regulation of businesses in the crafts sector has been furthermore relaxed

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[5] The German Immigration Act (Gesetz zur Steuerung und Begrenzung der Zuwanderung und zur Regelung des Aufenthalts und der Integration von Unionsbürgern und Ausländern (Zuwanderungsgesetz)) was reformed by July 30, 2004, and became effective by January 1, 2005.

[6] For details see § 284, SGB III.

by January 2004, which facilitates the establishment of small businesses for foreigners. This creates opportunities to circumvent the restrictions on the free movement of workers. The available evidence suggests that these opportunities have been used: Although the number of self-employed persons from the NMS is not recorded, it is possible to draw conclusions from the registration of businesses at the German Chambers of Handicrafts. Since May 1st, 2004, approximately 14,000 citizens from the NMS-8 have registered a business with the Chambers of Handicrafts. This corresponds to a share in all registered businesses of 1.6 per cent, compared to a share of NMS-8 nationals in the German population of 0.6 per cent (Untiedt et al., 2007, p. 87).

3.2 Key migration trends

By the end of 2007, about 554,000 nationals from the NMS-8 and 131,000 nationals from Bulgaria and Romania resided in Germany (see Table 3.1). This corresponds to 0.8 per cent of the German population or to 9.4 per cent of the foreign population in Germany. The migration stock figures in Germany before and after EU enlargement are not comparable, since the Federal Statistical Office of Germany revised the migration statistics in 2004. According to the official statistics, the number of foreign residents from the NMS-8 has increased by 120,000 persons from 2004 to 2007, and the number of foreign residents from the NMS-2 has increased slightly by 20,000 persons during the same period of time. Taking the statistical revision into account, the actual increase in the number of foreign residents may amount to about 200,000 persons instead of the 140,000 persons reported in the migration statistics. This corresponds to an annual influx of about 50,000 persons since the EU's eastern enlargement in 2004. It is about one-fourth or one-fifth of the migration potential which has been estimated by Boeri/Brücker et al. (2001) and Alvarez-Plata et al. (2003) under the counterfactual assumption that the free movement of workers is introduced in Germany immediately after EU enlargement.

Net immigration figures for NMS-10[7] nationals as reported by the Federal Statistical Office of Germany are at about 40,000 to 65,000 persons p.a. (see Table 3.2), slightly higher as the increase in the stock of foreign residents during the period 2003 to 2007. This can be traced back inter alia to naturalisations. The main source country for immigration from the NMS is Poland with 385,000 residents in 2007, followed by Romania with 85,000 residents and Hungary with 56,000 residents (see Table 3.1).

Germany is the main destination for migrants from the candidate and potential candidate countries in the EU-15. Turkey and the former Yugoslavia have been, together with Italy, the main source countries of guestworker recruitment in Germany during the 1960s and early 1970s. Although net immigration flows from these countries have declined since the first oil price shock in 1973, Germany remains the main target for migrants from these

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[7] The NMS-10 refer here to the twelve new member states except Cyprus and Malta, i.e. the NMS-8 and the NMS-2.

countries. In the early 1990s, particularly immigration from the successor states of the former Yugoslavia accelerated in the course of the civil wars in these countries. However, the number of foreign nationals from the six candidate and potential countries has declined in Germany from 3.1 million persons in 2000 to 2.4 million persons in 2007 (see Table 3.1), which has been caused both by an increasing number of naturalisations, particularly in the Turkish community and the repatriation of refugees from the former Yugoslavia. Note that the 2000 reform of the immigration act in Germany facilitates the naturalisation of immigrants and descendents of immigrants which have stayed for longer time-spans. This is particularly relevant for communities with a long migration tradition such as the Turkish community in Germany and the communities from the successor states of the former Yugoslavia.

To sum up, immigration from the new member states has increased only slightly in Germany after the EU enlargement in 2004 and fell short of the projections of potential migration which have been undertaken under the counterfactual assumption of applying the free movement of workers in Germany. The moderate increase can be traced back to the diversion of migration flows towards other destinations such as the UK and Ireland, which has been caused by the opening of the labour markets there, but also by the economic slowdown in Germany at the beginning of this decade.

Table 3.1 Migrant Stocks in Germany, 1995-2007

		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Czech Republic	N (in Persons)	18,327	18,771	19,583	20,782	22,038	24,400	26,700	28,400	30,186	30,301	31,983	33,316	34,266
	% of total pop.	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
Estonia	N (in Persons)	2,509	2,881	3,173	3,348	3,429	3,600	3,900	4,000	4,220	3,775	3,907	3,970	4,065
	% of total pop.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Hungary	N (in Persons)	56,748	55,706	52,029	51,905	53,152	54,437	55,978	55,953	54,714	47,808	49,472	52,347	56,165
	% of total pop.	0.07	0.07	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.07
Latvia	N (in Persons)	4,624	5,328	6,147	6,853	7,446	7,900	8,500	8,900	9,341	8,844	9,477	9,775	9,806
	% of total pop.	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Lithuania	N (in Persons)	4,800	5,868	6,631	7,240	8,042	9,400	11,200	12,600	13,985	14,713	17,357	19,030	19,833
	% of total pop.	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
Poland	N (in Persons)	276,753	283,356	283,312	283,604	291,673	301,366	310,432	317,603	326,882	292,109	326,596	361,696	384,808
	% of total pop.	0.34	0.35	0.35	0.35	0.36	0.37	0.38	0.39	0.40	0.35	0.40	0.44	0.47
Slovak Republic	N (in Persons)	6,707	7,738	9,242	9,808	12,097	14,700	17,000	18,300	19,567	20,244	21,685	23,835	24,458
	% of total pop.	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03
Slovenia	N (in Persons)	17,328	17,772	18,093	18,412	18,648	18,800	19,400	20,600	21,795	21,034	21,195	21,109	20,971
	% of total pop.	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03
NMS-8	**N (in Persons)**	**387,796**	**397,420**	**398,210**	**401,952**	**416,525**	**434,603**	**453,110**	**466,356**	**480,690**	**438,828**	**481,672**	**525,078**	**554,372**
	% of total pop.	**0.47**	**0.49**	**0.49**	**0.49**	**0.51**	**0.53**	**0.55**	**0.57**	**0.58**	**0.53**	**0.58**	**0.64**	**0.67**
Bulgaria	N (in Persons)	38,847	36,046	34,463	31,564	32,290	34,359	38,143	42,419	44,300	39,167	39,153	39,053	46,818
	% of total pop.	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.06
Romania	N (in Persons)	109,256	100,696	95,190	89,801	87,504	90,094	88,102	88,679	89,104	73,365	73,043	73,353	84,584
	% of total pop.	0.13	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.09	0.09	0.09	0.10
NMS-2	**N (in Persons)**	**148,103**	**136,742**	**129,653**	**121,365**	**119,794**	**124,453**	**126,245**	**131,098**	**133,404**	**112,532**	**112,196**	**112,406**	**131,402**
	% of total pop.	**0.18**	**0.17**	**0.16**	**0.15**	**0.15**	**0.15**	**0.15**	**0.16**	**0.16**	**0.14**	**0.14**	**0.14**	**0.16**
Albania	N (in Persons)	10,528	10,476	11,343	11,619	12,107	11,787	11,702	11,630	11,513	10,449	10,362	10,126	10,009
	% of total pop.	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Bosnia	N (in Persons)	316,024	340,526	281,380	190,119	167,690	156,300	159,000	163,800	167,081	155,973	156,872	157,094	158,158
	% of total pop.	0.39	0.42	0.34	0.23	0.20	0.19	0.19	0.20	0.20	0.19	0.19	0.19	0.19
Croatia	N (in Persons)	185,122	201,923	206,554	208,909	213,954	216,800	223,800	231,000	236,570	229,172	228,926	227,510	225,309
	% of total pop.	0.23	0.25	0.25	0.25	0.26	0.26	0.27	0.28	0.29	0.28	0.28	0.28	0.27
Mazedonia	N (in Persons)	33,984	38,774	42,550	46,167	49,420	51,800	56,000	58,300	61,019	61,105	62,093	62,295	62,474
	% of total pop.	0.04	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08
Serbia	N (in Persons)	797,754	754,311	721,029	719,474	737,204	662,500	627,500	591,500	568,240	125,765	297,004	282,067	236,451
	% of total pop.	0.98	0.92	0.88	0.88	0.90	0.81	0.76	0.72	0.69	0.15	0.36	0.34	0.29
Turkey	N (in Persons)	2,014,311	2,049,060	2,107,426	2,110,223	2,053,564	1,998,534	1,947,938	1,912,169	1,877,661	1,764,318	1,764,041	1,738,831	1,713,551
	% of total pop.	2.47	2.50	2.57	2.57	2.50	2.43	2.37	2.32	2.28	2.14	2.14	2.11	2.08
Cand-6	**N (in Persons)**	**3,357,723**	**3,395,070**	**3,370,282**	**3,286,511**	**3,233,939**	**3,097,721**	**3,025,940**	**2,968,399**	**2,922,084**	**2,346,782**	**2,519,298**	**2,477,923**	**2,405,952**
	% of total pop.	**4.11**	**4.14**	**4.11**	**4.01**	**3.94**	**3.77**	**3.67**	**3.60**	**3.54**	**2.84**	**3.05**	**3.01**	**2.92**
EU-14	**N (in Persons)**	**1,811,748**	**1,839,851**	**1,850,032**	**1,854,321**	**1,858,672**	**1,872,655**	**1,870,022**	**1,862,066**	**1,849,986**	**1,659,564**	**1,653,928**	**1,896,341**	**1,643,340**
	% of total pop.	**2.22**	**2.25**	**2.26**	**2.26**	**2.26**	**2.28**	**2.27**	**2.26**	**2.24**	**2.01**	**2.01**	**2.30**	**1.99**
Foreigners total	**N (in Persons)**	**7,342,779**	**7,491,650**	**7,419,001**	**7,308,477**	**7,336,111**	**7,267,568**	**7,318,263**	**7,347,951**	**7,341,820**	**7,287,980**	**7,289,149**	**7,286,325**	**7,284,500**
	% of total pop.	**8.99**	**9.15**	**9.04**	**8.91**	**8.94**	**8.84**	**8.89**	**8.91**	**8.90**	**8.83**	**8.84**	**8.85**	**8.84**

Source: National Statistics.

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Table 3.2   Net immigration of foreign nationals by country of origin to Germany, 1995-2006

		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Czech Republic	N (in Persons)	1,133	675	-366	966	2,258	2,594	2,663	1,348	357	812	2,460	1,616
Estonia	N (in Persons)	635	517	274	233	184	326	324	315	306	53	244	131
Hungary	N (in Persons)	-9	-358	-3,874	1,138	2,421	1,817	2,433	889	-520	1,114	3,071	4,016
Latvia	N (in Persons)	872	1,079	825	973	766	584	923	732	453	694	1,051	564
Lithuania	N (in Persons)	1,035	974	643	585	838	1,407	1,609	1,600	1,238	2,486	3,070	2,085
Poland	N (in Persons)	16,544	5,744	1,043	5,433	13,638	13,703	15,049	13,811	15,372	29,737	50,681	48,341
Slovak Republic	N (in Persons)	578	318	789	575	2,288	2,134	1,615	1,729	1,144	1,515	2,736	2,067
Slovenia	N (in Persons)	18	-296	-454	-163	-11	-26	199	-87	-234	-16	-119	-122
NMS-8	**N (in Persons)**	**20,806**	**8,653**	**-1,120**	**9,740**	**22,382**	**22,539**	**24,815**	**20,337**	**18,116**	**36,395**	**63,194**	**58,698**
Bulgaria	N (in Persons)	-2,309	-664	54	412	2,653	3,669	5,353	4,478	3,257	1,476	147	553
Romania	N (in Persons)	-345	449	689	3,461	4,185	7,427	1,770	6,372	4,547	3,856	3,234	3,080
NMS-2	**N (in Persons)**	**-2,654**	**-215**	**743**	**3,873**	**6,838**	**11,096**	**7,123**	**10,850**	**7,804**	**5,332**	**3,381**	**3,633**
Albania	N (in Persons)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bosnia	N (in Persons)	39,447	-16,110	-77,042	-89,069	-23,013	-6,929	2,332	1,362	521	-12	139	419
Croatia	N (in Persons)	-7,127	-4,977	-8,942	-9,708	-1,144	1,082	-112	-725	-304	-1,784	-1,755	-1,558
Mazedonia	N (in Persons)	-1,532	-952	46	483	1,011	797	2,760	595	981	460	547	569
Serbia	N (in Persons)	13,752	8,597	-13,252	14,796	39,689	-56,254	-7,640	-10,802	-6,516	-5,311	-1,669	-251
Turkey	N (in Persons)	30,371	29,690	10,003	2,816	6,153	10,084	18,703	21,754	14,197	5,752	2,949	-189
Cand-6	**N (in Persons)**	**74,911**	**16,248**	**-89,187**	**-80,682**	**22,696**	**-51,220**	**16,043**	**12,184**	**8,879**	**-895**	**211**	**-1,010**
EU-14	**N (in Persons)**	**37,659**	**18,588**	**-7,937**	**-8,802**	**-961**	**7,426**	**3,193**	**-10,295**	**-10,365**	**-28,251**	**-5,739**	**-757**
Foreigners total	**N (in Persons)**	**227,246**	**148,890**	**-21,768**	**-33,455**	**118,235**	**86,455**	**188,272**	**152,769**	**102,696**	**55,180**	**95,717**	**74,693**

Source: National Statistics.

Table 3.3   Immigration of foreign nationals by country of origin, 1995-2006

		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Czech Republic	N (in Persons)	10,205	9,041	7,815	7,896	9,551	11,341	11,298	10,351	8,556	8,972	8,609	7,844
Estonia	N (in Persons)	1,570	1,366	1,184	1,035	839	935	914	886	843	777	697	577
Hungary	N (in Persons)	18,757	16,636	11,231	13,328	14,913	16,049	17,421	16,531	14,256	17,364	18,546	18,634
Latvia	N (in Persons)	2,120	2,308	2,275	2,343	2,119	1,960	2,145	2,058	1,868	2,315	2,419	2,023
Lithuania	N (in Persons)	3,009	2,947	2,466	2,181	2,306	3,054	3,508	3,830	3,193	4,736	5,309	4,806
Poland	N (in Persons)	87,238	77,405	71,214	66,106	72,210	74,144	79,650	81,466	88,020	124,610	146,943	151,743
Slovak Republic	N (in Persons)	7,719	6,485	6,907	6,472	9,015	10,755	11,424	11,454	10,566	11,582	11,714	11,292
Slovenia	N (in Persons)	2,502	2,151	1,822	1,995	1,903	1,862	2,605	2,286	1,992	2,321	1,442	1,086
NMS-8	**N (in Persons)**	**133,120**	**118,339**	**104,914**	**101,356**	**112,856**	**120,100**	**128,965**	**128,862**	**129,294**	**172,677**	**195,679**	**198,005**
Bulgaria	N (in Persons)	8,028	6,287	6,334	5,211	8,041	10,308	13,295	13,040	13,204	11,426	8,868	7,526
Romania	N (in Persons)	24,814	17,069	14,247	17,032	18,803	24,191	20,328	23,803	23,456	23,231	22,873	23,353
NMS-2	**N (in Persons)**	**32,842**	**23,356**	**20,581**	**22,243**	**26,844**	**34,499**	**33,623**	**36,843**	**36,660**	**34,657**	**31,741**	**30,879**
Albania	N (in Persons)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bosnia	N (in Persons)	55,173	11,127	6,901	8,397	10,333	10,396	12,817	10,470	8,311	8,003	7,004	6,579
Croatia	N (in Persons)	14,921	12,290	10,006	9,824	12,293	14,069	13,861	12,738	11,230	10,118	8,956	8,310
Mazedonia	N (in Persons)	4,000	2,835	3,060	3,051	3,503	3,411	5,421	3,913	3,620	3,227	2,578	2,463
Serbia	N (in Persons)	54,116	42,900	31,227	59,853	88,166	33,015	28,349	25,501	21,442	20,366	16,706	11,256
Turkey	N (in Persons)	73,592	73,224	55,981	47,958	47,097	49,114	54,587	57,187	48,207	40,680	34,749	29,589
Cand-6	**N (in Persons)**	**201,802**	**142,376**	**107,175**	**129,083**	**161,392**	**110,005**	**115,035**	**109,809**	**92,810**	**82,394**	**69,993**	**58,197**
EU-14	**N (in Persons)**	**177,240**	**172,483**	**151,667**	**137,275**	**137,284**	**132,719**	**125,319**	**113,464**	**101,921**	**95,902**	**92,345**	**93,539**
Foreigners total	**N (in Persons)**	**788,337**	**707,954**	**615,298**	**605,500**	**673,873**	**649,249**	**685,259**	**658,341**	**601,759**	**602,080**	**579,301**	**558,467**

Source: National Statistics.

Table 3.4   Emigration of foreign nationals by country of destination, 1995-2006

		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Czech Republic	N (in Persons)	9,072	8,366	8,181	6,930	7,293	8,747	8,635	9,003	8,199	8,160	6,149	6,228
Estonia	N (in Persons)	935	849	910	802	655	609	590	571	537	724	453	446
Hungary	N (in Persons)	18,766	16,994	15,105	12,190	12,492	14,232	14,988	15,642	14,776	16,250	15,475	14,618
Latvia	N (in Persons)	1,248	1,229	1,450	1,370	1,353	1,376	1,222	1,326	1,415	1,621	1,368	1,459
Lithuania	N (in Persons)	1,974	1,973	1,823	1,596	1,468	1,647	1,899	2,230	1,955	2,250	2,239	2,721
Poland	N (in Persons)	70,694	71,661	70,171	60,673	58,572	60,441	64,601	67,655	72,648	94,873	96,262	103,402
Slovak Republic	N (in Persons)	7,141	6,167	6,118	5,897	6,727	8,621	9,809	9,725	9,422	10,067	8,978	9,225
Slovenia	N (in Persons)	2,484	2,447	2,276	2,158	1,914	1,888	2,406	2,373	2,226	2,337	1,561	1,208
NMS-8	**N (in Persons)**	**112,314**	**109,686**	**106,034**	**91,616**	**90,474**	**97,561**	**104,150**	**108,525**	**111,178**	**136,282**	**132,485**	**139,307**
Bulgaria	N (in Persons)	10,337	6,951	6,280	4,799	5,388	6,639	7,942	8,562	9,947	9,950	8,721	6,973
Romania	N (in Persons)	25,159	16,620	13,558	13,571	14,618	16,764	18,558	17,431	18,909	19,375	19,639	20,273
NMS-2	**N (in Persons)**	**35,496**	**23,571**	**19,838**	**18,370**	**20,006**	**23,403**	**26,500**	**25,993**	**28,856**	**29,325**	**28,360**	**27,246**
Albania	N (in Persons)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bosnia	N (in Persons)	15,726	27,237	83,943	97,466	33,346	17,325	10,485	9,108	7,790	8,015	6,865	6,160
Croatia	N (in Persons)	22,048	17,267	18,948	19,532	13,437	12,987	13,973	13,463	11,534	11,902	10,711	9,868
Mazedonia	N (in Persons)	5,532	3,787	3,014	2,568	2,492	2,614	2,661	3,318	2,639	2,767	2,031	1,894
Serbia	N (in Persons)	40,364	34,303	44,479	45,057	48,477	89,269	35,989	36,303	27,958	25,677	18,375	11,507
Turkey	N (in Persons)	43,221	43,534	45,978	45,142	40,944	39,030	35,884	35,433	34,010	34,928	31,800	29,778
Cand-6	**N (in Persons)**	**126,891**	**126,128**	**196,362**	**209,765**	**138,696**	**161,225**	**98,992**	**97,625**	**83,931**	**83,289**	**69,782**	**59,207**
EU-14	**N (in Persons)**	**139,581**	**153,895**	**159,604**	**146,077**	**138,245**	**125,293**	**122,126**	**123,759**	**112,286**	**124,153**	**98,084**	**94,296**
Foreigners total	**N (in Persons)**	**561,091**	**559,064**	**637,066**	**638,955**	**555,638**	**562,794**	**496,987**	**505,572**	**499,063**	**546,900**	**483,584**	**483,774**

Source: National Statistics.

3.3 The human capital characteristics of migrants

Labour Force Survey data suggests that the education level of migrants from the new member states is only slightly below that of natives in Germany (see Box 1 for a description of the data sources). The share of less skilled individuals in the working age population from the NMS-8 is at 20 per cent and that of the workforce from the NMS-2 is at 18 per cent somewhat higher than that of the native working age population (14 per cent) in 2006 (see Table 3.5). At the upper end of the skill spectrum, the shares of high skilled workers are at 27 per cent in case of the NMS-8 and 23 per cent of the NMS-2 similar to those of the native workforce (26 per cent). Particularly well educated is the foreign workforce from the Czech Republic, Hungary, Latvia, and Poland. A comparison of the 2000 and 2006 data suggests that the share of less-skilled workers in the working age population has slightly increased over time, although the difference is within the range of measurement error in the LFS data.

Box 1 Limitations of the Labour Force Survey data

The analysis in this and the following section is based on data derived from the European Labour Force Survey (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.

We refer in our analysis to the working age cohorts (15 to 64 years) and the second quarter results of the LFS in 2000 and 2006. Ireland is not included due to missing data. Immigrants are identified by the concept of citizenship. In the context of our analysis, certain limitations of the LFS data have to be considered: First, immigrants may generally be under-represented in the LFS as the survey is usually carried out in the national language of the respective country. Second, seasonal workers may be underrepresented due to their short duration of stay. Third, as it takes a long time span until new migration waves (households) rotate in the sample, migrants in the current year LFS are possibly under-represented. Fourth, since the immigrant communities from many countries are small, response rates are low and may be not representative. In particular the last aspect may bias our analysis. Thus, all findings have to be interpreted with care.

Although the average education level of immigrants from the NMS is slightly below that of natives, it is well above those of other foreigner groups in Germany. The share of less skilled workers in the working age population of the candidate countries amounts to 52 per cent and that of highly skilled workers only to 6 per cent. Among the migrant population from the other EU-15 countries in Germany, which comprises largely migrant communities from the Southern EU member states which have been established during

the guest worker recruitment episode in Germany, the share of less skilled individuals amounts to 36 per cent and the share of highly skilled individuals to 21 per cent.

Table 3.5   Education level of immigrants and natives in Germany, 2000 and 2006

	2000			2006		
	Low	Medium	High	Low	Medium	High
	in per cent of each nationality group					
Czech Republic	n.a.	n.a.	n.a.	11.75	34.61	53.64
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary	4.29	69.87	24.90	6.35	63.06	30.59
Latvia	n.a.	n.a.	n.a.	27.13	45.39	27.48
Lithuania	n.a.	n.a.	n.a.	42.98	41.19	15.83
Poland	12.34	58.79	24.00	22.51	50.77	26.73
Slovak Republic	n.a.	n.a.	n.a.	4.53	77.27	18.20
Slovenia	n.a.	n.a.	n.a.	22.49	67.94	9.57
NMS-8	**10.89**	**60.79**	**24.16**	**19.80**	**53.29**	**26.91**
Bulgaria	n.a.	n.a.	n.a.	8.48	65.79	25.73
Romania	14.65	55.73	22.11	23.41	55.52	21.07
NMS-2	**14.65**	**55.73**	**22.11**	**17.76**	**59.41**	**22.83**
Bosnia	38.63	43.15	8.24	48.50	41.51	9.43
Croatia	39.59	46.36	6.68	29.54	58.64	11.81
Turkey	58.79	30.42	3.52	58.42	37.55	4.03
Cand-3	**53.68**	**34.30**	**4.48**	**51.97**	**41.84**	**6.13**
EU-14	**38.66**	**37.38**	**16.24**	**35.68**	**42.96**	**21.36**
Natives	**14.05**	**56.29**	**25.34**	**13.52**	**60.48**	**25.99**
Total	**15.97**	**55.00**	**24.49**	**15.50**	**59.13**	**25.36**

Note: Numbers refer to second quarter.

Source: European Labour Force Survey 2008, special provision, own calculations.

Not surprisingly, migrants from the new member states in Germany are younger than natives. The share of the 15 to 29 age cohorts in the working age population from the NMS-8 and the NMS-2 is at 29 per cent substantially higher than among the native workforce (20 per cent), while that of the 50 to 64 age group is at 12 per cent (NMS-2) and 15 per cent (NMS-8) well below that of natives (25 per cent). However, they are only slightly younger than the immigrant communities from the candidate countries. Comparing the 2006 with the 2000 age structure suggests that the age of the migrant workforce from the new member states has only slightly increased.

Another interesting feature is the high share of females in the labour force from the new member states. In 2006, about 64 per cent of the immigrant labour force from the NMS-2 and 55 per cent of the labour force from the NMS-8 are females, compared to 37 per cent in the immigrant labour force from the candidate countries and 38 per cent in that of the

EU-14 countries. In the German labour force, the share of females amounts to 46 per cent in 2006.

Altogether, we observe that the immigrant workforce from the new member states is more female, better educated, and slightly younger than that of other foreigner groups. Compared to the native workforce, the average education levels is slightly lower. Particularly the share of less-skilled workers is higher than in the native workforce.

The picture is less bright if we compare the human capital characteristics of migrants from the new member states in Germany with that of other main destinations in the EU such as the UK. The average education level of NMS immigrants in Germany is below that of the NMS communities in other destinations, and it has deteriorated over time. This suggests that migrants from the new member states are less favourably (self-)selected with regard to their education levels compared to other destinations (see the analysis in Deliverable 2). This phenomenon can be explained according to the Roy-Borjas model by differences in the returns to human capital between different destinations (Borjas, 1987), but also by different immigration policies (Brücker and Ringer, 2008). According to the first line of reasoning, a higher wage inequality and the exclusion of migrants from welfare benefits in the UK may have resulted in a better skill composition of migrants there compared to Germany. According to the second line of reasoning, the regulation of immigration in Germany e.g. by seasonal work permits and family reunification may have resulted in a less favourable skill structure of the immigrant population from the NMS compared to other destinations which have opened their labour markets.

3.4 Labour market participation of migrants from the NMS and the candidate countries

The labour market performance of migrants from the NMS is only slightly better than that of the total foreign workforce in Germany. Although the skill structure of the immigrant workforce from the NMS deviates not largely from that of natives, both the inactivity and the unemployment rates in the immigrant workforce from the new member states are well above that of natives. The share of unemployed individuals in the working age population from the NMS-8[8] amounts to 12 per cent and in the working age population from the NMS-2 to 9 per cent in 2006, compared to 7 per cent in the native population. Moreover, the share of the inactive persons amounts to 29 per cent in the working age population from the NMS-8 and to 30 per cent in that of the NMS-2 in 2006, compared to 24 per cent in the native population. The latter result is particularly surprising since the workforce from the NMS-8 is younger than the native workforce. The share of unemployed individuals in the workforce from the NMS has substantially increased between 2000 and 2006, which indicates that they have been more than proportionally affected by the economic slow-down in the early 2000s.

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[8] This share of unemployed individuals in the working age population should not be confused with the unemployment rate, which is usually calculated as the share of unemployed persons in the civil labour force.

Unemployment and inactivity shares differ across individual sending countries. The unemployment shares are particularly low in the immigrant communities from Bulgaria, Slovenia, and Romania, and particularly high in case of Poles and Hungarians. Inactivity rates are well below the average in case of immigrants from Hungary, Slovenia, and Lithuania, but high in case of immigrants from Bulgaria, Slovakia, and Poland.

In case of the candidate countries, the shares of unemployed and inactive individuals in the working age population are at 13 per cent and 37 per cent, respectively, even higher than those of the working age population from the NMS. The unemployment risk is particularly high in the Turkish workforce.

While high unemployment and low activity rates can be largely explained by the human capital characteristics of the workforce from the candidate countries, the relatively poor labour market performance of the immigrant workforce from the new member states in Germany is puzzling. Unemployment and inactivity rates are well above those of their counterparts which have migrated to other EU member states, particularly to the UK (Deliverable 2). The observable differences in the human capital characteristics between the migrant population from the NMS in the UK and Germany cannot explain these differences alone. An important factor is of course the slow-down of economic growth and increasing unemployment in Germany in the early 2000s, which has affected the immigrant population from the new member states more than proportionally. Moreover, the available data suggests that the difference in the unemployment risk between individuals from the new member states and natives is particularly high for better qualified individuals, which indicates that the human capital acquired in the NMS cannot be easily transferred into the German labour market (Untiedt et al., 2007, p. 100).

Moreover, immigrants from the NMS are more than proportionally represented in sectors such as agriculture, hotels and restaurants, and other low-paid activities in the service sector where unemployment risks are particularly high (Untiedt et al., 2007, pp. 94-97). This raises the question whether the highly regulated labour market access in Germany has contributed to the unfavourable sectoral employment structure of workers from the NMS. Although seasonal work permits are granted for short-term periods only, they may have created networks and immigration opportunities which may explain the high employment shares in agriculture which we can observe in the migrant workforce from the NMS today.

**Table 3.6   Labour market participation of immigrants and natives in Germany, 2000
and 2006**

	2000			2006		
	Employed	Unemployed	Inactive	Employed	Unemployed	Inactive
	in per cent of each nationality group					
Czech Republic	n.a.	n.a.	n.a.	63.02	10.91	26.08
Estonia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Hungary	62.61	6.34	31.05	76.90	12.61	10.49
Latvia	n.a.	n.a.	n.a.	53.18	46.82	0.00
Lithuania	n.a.	n.a.	n.a.	65.25	11.59	23.16
Poland	58.05	7.60	34.35	54.14	12.50	33.36
Slovak Republic	n.a.	n.a.	n.a.	54.26	10.18	35.57
Slovenia	n.a.	n.a.	n.a.	69.12	8.69	22.19
NMS-8	**58.83**	**7.39**	**33.79**	**58.63**	**12.30**	**29.07**
Bulgaria	n.a.	n.a.	n.a.	54.96	8.46	36.58
Romania	69.76	2.70	27.53	64.99	8.96	26.04
NMS-2	**69.76**	**2.70**	**27.53**	**60.79**	**8.75**	**30.45**
Bosnia	59.04	8.17	32.78	59.15	10.83	30.02
Croatia	67.23	5.43	27.34	61.18	10.77	28.05
Turkey	47.57	10.60	41.84	45.80	14.37	39.83
Cand-3	**51.02**	**9.74**	**39.25**	**49.48**	**13.47**	**37.06**
EU-14	**68.73**	**5.43**	**25.84**	**68.75**	**7.88**	**23.38**
Natives	**66.32**	**5.39**	**28.30**	**68.92**	**7.13**	**23.95**
Total	**65.66**	**5.59**	**28.75**	**67.62**	**7.65**	**24.72**

Note: Numbers refer to second quarter.

Source: European Labour Force Survey 2008, special provision, own calculations.

4   Impact of migration on the German economy and the labour market: A review of the literature

The effects of immigration on labour markets and economic growth in Germany have been analysed in numerous studies. We can distinguish three strands in the literature: First, micro-econometric studies, which use the variance of the immigrant share at the regional or sectoral level for the identification of the wage and employment effects of migration. Second, structural models, which simulate the wage and employment effects of migration on the basis of estimated parameters of the production function and wage rigidities. Third, applied general equilibrium models and short-term macroeconomic models considering inter alia the effects of migration on structural change and the interaction between migration and international goods and capital markets. Interestingly enough, all three strands of the literature suggest that the macroeconomic effects of immigration on wages and unemployment are small or even neutral.

4.1 Microeconometric studies

The overwhelming share of the microeconomic studies uses the regional variance of the foreigner share for the identification of both the wage and employment effects of immigration. Since migrants tend to move more than proportionally into prosperous regions with high wage levels and low unemployment rates, this literature may however suffer from an endogeneity problem. An important part of the international literature therefore focuses on natural experiments, where the migration influx is determined inter alia by political rather than by economic forces to circumvent the endogeneity problem (e.g. Card, 1990; Hunt, 1992; Carrington and DeLima, 1996). Other parts of the literature use instrumental variables or difference-in-difference estimates in order to control the potential endogeneity of the locational choices of migrants (e.g. Borjas et al., 1997; Gavasto et al., 1999).

Since natural experiments do not exist at the regional level in Germany, the empirical literature relies on instrumental variable and difference-in-difference estimates. This literature uses both data from the German Socio-Economic Panel (GSOEP) and administrative data derived from the social security records such as the IAB employment sample (IABS). This literature finds only small wage effects (between 0 and -0.3 per cent at an increase of the foreigner share of 1 per cent) and tiny unemployment effects (between 0 and 0.2 percentage points at an increase of the foreigner share of 1 per cent) (DeNew and Zimmermann, 1994a; 1994b; Haisken-DeNew and Zimmermann, 1995; Mühleisen and Zimmermann, Winter-Ebmer and Zimmermann, 2000; Pischke and Velling, 1997; Winkelmann and Zimmermann, 1993). Altogether, the findings of this literature are very similar to the international literature which finds that the results for the wages cluster about -0.1 per cent (Nijkamp et al., 2005) and for the unemployment rate at +0.1 percentage points at an increase of the foreigner share of 1 per cent (Nijkamp et al., 2006).

This literature has been recently challenged by Borjas (2003), who uses the variance of the foreigner share across education and experience cells of the labour market at the national level for the identification of the wage effects. Under the assumption that the education and experience characteristics of the migrant workforce are exogenous, this allows an unbiased estimation of the labour market effects of migration. He finds in the US a relatively large elasticity of -0.3, which is however not confirmed by the findings in Ottaviano and Peri (2006). A study based on a similar design as that of Borjas (2003) by Bonin (2006) finds a smaller elasticity of -0.1 for Germany, which by and large reconciles the findings of the regional level studies.

4.2 Structural models

Borjas (2003) and Ottaviano and Peri (2006) have estimated the wage effects of migration also within the framework of a structural model, which derives the labour demand from a nested production function. This production function groups the labour force by education, experience and – in case of Ottaviano and Peri (2006) – by national

origin. However, these models focus on the wage effects only and ignore the effects of migration on (un-)employment, which are particularly relevant in the European and German context. Brücker and Jahn (2008) address the labour market effects of migration in a structural framework where wages and employment are simultaneously determined. Following the wage curve literature (Blanchflower and Oswald, 1995; 1994), they assume that an equilibrium relationship exists between the wage level and the unemployment rate (See Final Report, Chapter 5). They find that a 1 per cent immigration to Germany reduces wages by about 0.1 per cent in the short-run and increases the unemployment rate by about 0.1 percentage points in the short-run, while migration is largely neutral for the labour market in the long-run when capital stocks adjust to labour supply shocks. Similar wage and employment effects have been recently estimated for Germany by D'Amuri, Ottaviano, and Peri (2008) and Felbermayr, Geis, and Kohler (2008).

Altogether, the empirical literature provides very small estimates for both the wage and employment effects of migration in Germany. An increase in the foreign share of 1 per cent – which corresponds to an increase in the population of about 800,000 persons and in the labour force of about 400,000 workers – is likely to reduce the wages by no more than 0.1 per cent and to increase the unemployment by 0.1 percentage points.

Migration affects the different groups in the labour market in different ways. We have therefore analysed (see Table 5.3 in the Final Report) how the different groups are affected in terms of their wages and unemployment risks. We find that in Germany, workers with no vocational training are more affected by declining wages (-0.05 per cent) than workers with a higher education (-0.03 per cent) in the short-term. In the long-term, we find that migration from the NMS-8 reduces wages of the worker with no vocational training by 0.05 per cent, while wages of all other workers are not affected by migration.

4.3 CGE and other macroeconomic models

Migration from the NMS affects the economy by different channels. While the models sketched above measure the direct effects of an increasing labour supply, there are a number of other links between migration, international trade, capital movements and sectoral change which affect macroeconomic aggregates such as investment, consumption etc. The long-term effects of these changes are addressed in computable general equilibrium (CGE) models.

One of the first models reflecting migration has been developed by Keuschnigg and Kohler (1999). However, since transitional and bilateral agreements were not obvious at that time, they overestimated migration and therefore their macroeconomic impact. Building on this approach, Heijdra et al. (2002) include the adjustment of capital stocks and the unemployment vacancy ratio in a search unemployment framework. They assume that migration from the NMS will expand the unskilled labour force by 6.15 per cent and the skilled labour force by 0.85 per cent. This shock leads to an increase in GDP by 1.8 per cent and a 0.4 percentage point rise in short term unskilled unemployment

and a 0.11 percentage point reduction in skilled unemployment. It is worth noting that the migration effects outpace the trade effects of enlargement in this setting.

In other types of models, Untiedt et al. (2007) and Baas et al. (2007) address the impact of EU enlargement and the free movement on the sectoral structure of the economy and consider particularly the change in the structure of employment. They find that the EU enlargement leads to a 1 per cent higher GDP, higher wages and lower unemployment. If Germany had opened its labour market, the GDP would rise by 1.44 per cent at the cost of a slightly lower rise in wages (0.25 per cent) and a slightly lower reduction of unemployment (0.25 percentage points). Interestingly, labour mobility reduces employment in the agricultural sector by 1.22 per cent. The big winners of labour redistribution and migration are the service sectors (+0.64 per cent) and the manufacturing sector (+0.8 per cent).

In contrast to this CGE literature, Barrell et al. (2007) use a traditional macro-econometric model – the National Institute Global Econometric Model (NiGEM) – for an assessment of the migration effects in the context of the EU enlargement. Beside trade and capital movements, these models reflect dynamic effects like capital stock adjustments and labour augmented technological change. They find that immigration from the NMS of the present size increases the German GDP by 0.02 per cent in 2005 and by 0.14 per cent in 2015. The impact of migration on unemployment is at 0.04 percentage points strong, given the small size of the labour inflow. In the medium term, however, the German labour market adjusts and migration even reduces unemployment in 2015 by 0.01 per cent.

5 A simulation of the macroeconomic effects of free movement

5.1 Description of the model

The model is outlined in detail in the final report. It is multi-sectoral CGE model which takes the interactions between migration, trade, and capital movements into account. The model and the simulations rely on Untied et al. (2007), who have estimated the macroeconomic effects of migration in the context of Eastern enlargement for Germany. The main difference between their study and the simulations presented here is the consideration of the adjustment of capital stocks. Capital stock adjustment is important in the context of migration since domestic investment or international capital mobility reduces the effects of an additional labour supply through migration on the labour market. As a consequence, the GDP and GDP per capita effects of migration are larger if we consider the adjustments of capital stocks, while the wage and unemployment effects are smaller.

For an assessment of the potential effects of the free movement of workers we employ three policy scenarios and a benchmark scenario:

- The first policy scenario is based on the assumption that Germany maintains the status quo in its immigration policies. Germany thus applies the same set of immigration restrictions for workers from the NMS-8 and the NMS-2 until the end of the transitional periods. This implies an increase in the foreign population from the NMS-10[9] of 38,000 persons p.a.

- The second policy scenario assumes that the free movement is introduced for the NMS-8 by 2009. Immigration flows from the NMS-8 to Germany are hard to predict, since a large part of the potential migrants have already migrated to the UK, Ireland and other destinations in the EU. We therefore assume that 100,000 persons p.a. will migrate from the NMS-8 to Germany in case of a free movement, which is substantially more than present immigration flows, but about 50 per cent of the inflows which have been predicted by Alvarez-Plata et al. (2003) in case of introducing the free movement already in 2004.[10]

- The third policy scenario assumes that the free movement is introduced for the NMS-10 by 2009. This increases the influx of foreigners from the NMS-10 from 100,000 to 110,000 persons compared to the second policy scenario.

The benchmark scenario relies on the assumption of zero migration. All scenarios are evaluated over a period of seven years. Note that the policy scenarios are based on assumptions and should not be misunderstood as forecasts.

We simulate all scenarios with and without capital stock adjustment. The scenario with adjustment of the capital stock is based on an estimate of the speed of adjustment (see Deliverable 4 for details). As capital stock adjustment is heavily driving macroeconomic results, we provide both simulations for transparency.

5.2 Results

Table 5.1 presents the results of our simulations for the status quo scenario, the free movement for the NMS-8 scenario and the free movement for the NMS-2 scenario. Under the status quo, the German labour force increases by 0.32 per cent through migration from the NMS, in the NMS-8 scenario by 0.85 per cent and in the NMS-10 scenario by 1 per cent. The additional labour force leads to an increase in GDP, rising unemployment and declining wages. The GDP effect is particular strong with 0.62 in the NMS-8 and 0.73 in the NMS-10 scenario; it is two-thirds of Germany's trade gain caused by the EU-Enlargement.

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[9] Like in Untied et.al. (2007) NMS-10 refers to the NMS-8 countries and the NMS-2 countries. Malta and Cyprus are not included in this aggregate figure.

[10] This corresponds to roughly two-thirds of the migration flows in the scenario applied by Untiedt et al. (2007).

Table 5.1   The impact of free movement on key macroeconomic variables of the German economy

	Base Year	Capital adjustment			No capital adjustment		
		Status Quo	NMS-8	NMS-10	Status Quo	NMS-8	NMS-10
		percentage change					
GDP	2211200	0.23	0.62	0.73	0.17	0.44	0.52
GDP per capita	26790.51	-0.21	-0.37	-0.28	-0.28	-0.55	-0.57
Private Consumption	1239350	0.17	0.45	0.53	0.05	0.12	0.14
Investment	377050	0.18	0.48	0.57	0.07	0.18	0.22
Government Consumption	453240	0.19	0.5	0.59	0.09	0.23	0.27
Taxes	231490	0.22	0.57	0.68	0.13	0.35	0.41
Exports Intra EU	514790	0.36	0.96	1.13	0.39	1.05	1.24
Exports Extra EU	311461	0.35	0.93	1.1	0.37	1	1.17
Imports Intra EU	-405720	0.2	0.53	0.62	0.1	0.27	0.32
Imports Extra EU	-278971	0.21	0.55	0.65	0.12	0.31	0.37
Wages	29.45	-0.05	-0.13	-0.15	-0.09	-0.23	-0.27
Capital	841910	0.14	0.38	0.44	0	0	0
Labour Force	42551	0.32	0.85	1	0.32	0.85	1
		changes in percentage points					
Unemployment Rate	9.21	0.04	0.12	0.14	0.08	0.21	0.25

Notes: 'NMS-8' and 'NMS-10' refer to migration scenarios with free labour mobility for NMS-8 only or NMS-10 countries.

Source: Own estimates.

The unemployment and wage effects are based on our estimations of the German wage curve in Deliverable 4. We therefore observe an increase in unemployment by 0.12 percentage points in the NMS-8 and 0.14 percentage points in the NMS-10 scenario. The effect of the free movement is captured by the difference between the status quo and the NMS-8 and the NMS-10 scenario: Opening the German labour market for the NMS-8 in 2009 increases unemployment by a mere 0.08 percentage points and reduces wages by 0.08 per cent according to our scenario after 7 years of free movement. This would increase to 0.1 per cent if Germany opens the labour market for the NMS-10.

Furthermore, opening labour markets leads to enhanced exports and imports, whereby exports rise sharper than imports. This leads to an increasing trade surplus for Germany. Interestingly enough, the trade surplus is even higher without capital adjustment. This result is caused by a reduction of capital outflow through a capital stock adjustment. Consequently, investment is higher in the capital stock adjustment scenarios as is GDP and consumption in general.

The standard assumption that migrants do not bring capital reduces the capital endowment per worker in the short-run. As a consequence, the GDP per capita is slightly declining. Note that the per capita GDP level is not a welfare measure – earnings of the native population can increase at the same time.

In Table 5.2 we provide the sectoral impact of migration. In all three scenarios, production in manufacturing gains most from labour mobility (0.8 in the NMS-8 and 0.9 in the NMS-10 scenario), while production in non-tradable services gains below average (0.5 in the NMS-8 and 0.6 in the NMS-10 scenario). This corresponds to the rapid rise of exports (0.9 per cent) and a lower growth of imports (0.5 per cent).

The scenarios without capital stock adjustment yield higher wage and employment effects, while the effects on GDP are smaller. These results are similar to those obtained by Untiedt et al. (2007) and Baas et al. (2007).

However, the models differ slightly in their assumptions. In this model we assumed sectoral mobility of labour and an adjustment of the capital stock, while in Untied et al. (2007) sectoral mobility is only assumed in the free movement scenario and the capital stock is fixed.

Thus, in Untiedt et al. (2007) there is a strong negative impact of migration on agricultural production. This assumption reflects bilateral agreements between Germany and the NMS-countries, which restrict labour market participation of migrants to specific sectors. These restrictions are removed with the application of the community rules on the free movement of workers. Therefore, migrants move from the agricultural sector to other sectors of the economy according their occupation and education. This leads to efficiency gains for the whole economy but harms the previously favoured sectors.

In our model, domestic and foreign investment is one of the main channels how economies adjust to an increasing labour supply. Note that we have not assumed a complete adjustment of capital stocks. Instead we estimated the actual adjustment processes. We therefore prefer the scenario which considers capital stock adjustment here.

Table 5.2   The Sectoral Impact of Free Movement in Germany

	Base Year	Capital adjustment			No capital adjustment		
		Status	NMS-8	NMS-10	Status	NMS-8	NMS-10
Agriculture, hunting and forestry	47730.00	0.20	0.50	0.60	0.10	0.30	0.30
Fishing	420.00	0.10	0.40	0.40	0.00	0.00	0.00
Mining and quarrying	12590.00	0.20	0.60	0.70	0.20	0.50	0.50
Manufacturing	1357440.00	0.30	0.80	0.90	0.30	0.70	0.90
Electricity, gas and water supply	91220.00	0.20	0.50	0.60	0.10	0.30	0.30
Construction	189440.00	0.20	0.50	0.60	0.10	0.20	0.20
Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	343810.00	0.20	0.60	0.80	0.20	0.50	0.60
Hotels and restaurants	62070.00	0.20	0.50	0.60	0.10	0.20	0.20
Transport, storage and communication	261690.00	0.20	0.50	0.60	0.10	0.30	0.30
Financial intermediation	221390.00	0.20	0.50	0.60	0.10	0.20	0.20
Real estate, renting and business activities	676450.00	0.20	0.50	0.60	0.10	0.20	0.20
Public administration and defense; compulsory social security	175940.00	0.20	0.50	0.60	0.10	0.20	0.30
Education	114210.00	0.20	0.50	0.60	0.10	0.20	0.30
Health and social work	204850.00	0.20	0.50	0.60	0.10	0.20	0.20
Other community, social and personal service activities	153330.00	0.20	0.50	0.60	0.10	0.20	0.20
Activities of household	6620.00	0.20	0.50	0.60	0.10	0.30	0.30
Total	3919200.00	0.20	0.60	0.70	0.20	0.40	0.50

Source: Own estimates.

6 Conclusions

Germany has experienced a substantial immigration from the new member states during the 1990s, but only a negligible influx since the EU's Eastern enlargement. This can be traced back to the slow-down of economic growth and increasing unemployment in the beginning of this decade, but also on the application of transitional arrangements for the free movement of workers and the subsequent diversion process. Average education levels of migrants from the NMS are slightly below those of natives in Germany. However, other important destinations for migration from the NMS receive a younger and better educated workforce from there.

The German economy has recovered from the economic slow-down since 2005. The unemployment rate has declined from 10.6 per cent in 2005 to 7.3 per cent in 2008 (7.3 per cent ILO concept). The German economy still grew in 2008, although the growth rate of the GDP has started to decline vis-à-vis the previous years. For the year 2009, all economic forecasts expect that the GDP will shrink substantially in the course of the financial crisis and the global recession. However, the actual downturn of the economy is difficult to assess since all macroeconomic forecasts are extremely uncertain under the current conditions. Against this background, all research institutes in Germany (DIW, IfW, HWWI, IFO and the German government) expect the financial market crisis to spill-over to the real economy and predict a severe recession with a sharp increase in unemployment. Most research institutes expect that the unemployment rate will increase to 8.1 per cent (ILO concept) or more. However, the sharp rise in unemployment in Germany is not exceptional in Europe. It will fluctuate about the average of the EU-15 countries. Altogether, the German economy is seriously affected by the financial crisis and its subsequent downturn in the business cycle, but imbalances in the German labour market are not more severe than in the other member states of the EU.

Numerous studies have analysed the labour market effects of immigration in Germany. The findings of these studies cluster about an elasticity of wages with respect to the foreigner share of -0.1, i.e. that wages tend to decline by 0.1 per cent if the foreigner share increases by 1 per cent. Moreover, the unemployment rate is expected to increase by 0.1 percentage points if the foreigner share increases by 1 per cent. These small figures are confirmed by the simulation of the EU enlargement effects here: If we assume that the introduction of the free movement increases the labour force from the NMS-10 by 110,000 person p.a., then we achieve an immigration of about 1 per cent of the German labour force within 7 years. Over this period of time, wages would decline again by about 0.1 per cent and the unemployment rate by 0.1 percentage points, i.e. by an amount which is close to measurement error.

Altogether, the conditions of the German economy and the German labour market are not different to the situation in most other EU-15 countries and the potential effects of migration on wages and unemployment are small. Migration will moreover adjust to the economic conditions in the receiving countries as the experience from previous business cycles has demonstrated. It is therefore unlikely that an opening of the labour market will aggravate imbalances in the German labour market substantially. It is, however,

worthwhile noting that the unemployment risks of migrants from the NMS are high in Germany, in particular in comparison to other destination countries. It is therefore necessary to improve the integration of immigrants into the labour market. The free movement of workers might help in this context, since it may improve the unfavourable sectoral structure of employment of migrants from the NMS and increase incentives for return migration for those who are affected by unemployment risks.

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