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The Economic Impacts of a Migration Quota - A Borderline Case

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Abstract

The process of regional integration comprises several stages. In the first phases product markets are integrated via the creation of a free trade area, a common market and then later a customs union. But besides the integration of product markets the boarder opening also applies to production factors; i.e. labor and capital may move freely within the common market. Particularly the aspect of free labor movement very often represents a somewhat problematic topic. This is also the case in the course of the EU Eastern enlargement where the countries representing the most prominent immigration regions e.g. Germany make use of a 7 year phasing-in period in the form of an immigration quota. With this special regulation the countries aim to protect their national labor markets from increased immigration flows and the feared competition of domestic employees with a comparatively cheaper foreign labor force. Thus, in some parts of the EU the integration of labor markets lags behind the liberalization of trade in goods. Against this background the purpose of this study is to assess the economic impacts of such a delayed boarder opening for migrant workers coming from the newly acceded Eastern European countries. Therefore, an EU Enlargement scenario which totally denies an integration of the labor markets is compared to other enlargement scenarios considering expansions of Germany's immigration quota. Thereby it is assumed that the EU-15 not only relaxes immigration restrictions versus the accessing CEECs but also grants

further labor market access to other countries such as e.g., Turkey. The starting point of the simulations is an extended version of the GTAP model, which comprises a migration mechanism. This version enables the analysis of endogenously generated interregional migration flows and the consideration of remittances (https://www.gtap.agecon.purdue.edu/resources/download/2191.pdf). For the actual experiments this version has been further up-graded with the implementation of a migration quota. The modeling of the this migration quota follows the complementarity approach of Pearson & Bach (1996) used for the representation of tariff rate quotas e.g., in the EU's sugar regime. The results show that an expanded migration quota leads to increased migration flows into Germany and the rest of the EU-15 particularly from non-EU regions while immigration pressure from the new EU members is in some cases not even strong enough to make full use of the quota expansion. The increased level of border opening results into higher production output and stronger demand for labor in Germany particularly in labor-intensive sectors partly depending on foreign labor. Besides other effects on wages and remittances Germany's export performance is weakened while domestic sales increase.

Keywords: CGE, Migration, Migration Restriction, EU Enlargement

1   Introduction

1.1   Problem statement

The process of regional integration comprises several stages. In the first phases product markets are integrated via the creation of a free trade area, a common market and then later a customs union. But besides the integration of product markets the boarder opening also applies to production factors; i.e. labor and capital may move freely within the common market. Particularly the aspect of free labor movement very often represents a somewhat problematic topic. This is also the case in the course of the EU Eastern enlargement where the countries representing the most prominent immigration regions e.g. Germany make use of a 7 year phasing-in period in the form of an immigration quota. With this special regulation the

countries aim to protect their national labor markets from increased immigration flows and the feared competition of domestic employees with a comparatively cheaper foreign labor force. Thus, in some parts of the EU the integration of labor markets lags behind the liberalization of trade in goods. Against this background the purpose of this study is to assess the economic impacts of such a delayed boarder opening for migrant workers coming from the newly acceded Eastern European countries. Therefore, an EU Enlargement scenario which totally denies an integration of the labor markets is compared to other enlargement scenarios considering expansions of Germany's immigration quota. The starting point of the simulations is an extended version of the GTAP model, which comprises a migration mechanism. This version enables the analysis of endogenously generated interregional migration flows and the consideration of remittances (https://www.gtap.agecon.purdue.edu/resources/download/2191.pdf). For the actual experiments this version has been further up-graded with the implementation of a migration quota. The modeling of this migration quota follows the complementarity approach of Pearson & Bach (1996) used for the representation of tariff rate quotas e.g., for the EU's sugar regime. The results show that an expanded migration quota leads to increased migration flows into Germany and the rest of the EU-15 particularly from non-EU regions while immigration pressure from the new EU members is in some cases not even strong enough to make full use of the quota expansion. The increased level of border opening results into higher production output and stronger demand for labor in Germany particularly in labor-intensive sectors partly depending on foreign labor. Besides other effects on wages and remittances Germany's export performance is weakened while domestic sales increase.

1.2   Structure of the Paper

The subsequent chapter handles the methodological part providing a brief introduction to GTAP and a detailed explanation of the methodological extension of the model. In the third chapter the model design including data, aggregation strategy and shocks used for the enlargement experiment is explained. After the interpretation of the corresponding simulation

results the paper ends with some concluding remarks and qualifications.

2 Theoretical Framework

With people migrating being an issue scientists are engaged in since a long time this topic already has also been considered in CGE modeling. In order to take into account the development of labor flows and their economic impacts in economic analysis there exist some migration approaches in CGE models. Among others there are FRANCOIS and NELSON (1997) analyzing north-south migration in the context of a Mexico-US free trade area or BANSE (1998) who implemented rural-urban migration in a study assessing the impacts on employment in the course of an EU enlargement scenario. A documentation of literature concerning migration and CGE analysis is provided in KURZWEIL & BROCKMEIER (2003). The second and the third part of this chapter introduce the methodological instrument and its novel extended version used for an analysis of an EU enlargement scenario under the particular consideration of migration flows.

2.1 Standard GTAP model

GTAP is a comparative-static multi-regional CGE model. It provides an elaborate representation of the economy including the linkages between farming, agribusiness, industrial, and service sectors of the economy. The use of the non-homothetic constant difference of elasticity (CDE) functional form to handle private household preferences, the explicit treatment of international trade and transport margins, and a global banking sector which links global savings and consumption is innovative in GTAP. Trade is represented by bilateral trade matrices based on the Armington (ARMINGTON, 1969) assumption. Further features of the standard model are perfect competition in all markets as well as a profit and utility maximizing behavior of producers and consumers. Usually policy interventions are represented by price wedges. They lead to different prices according to different market stages. Price differentiation adjusts via introduction or change of taxes and subsidies respectively. Quantitative restrictions or quantitatively induced price adjustments do not exist

in the standard version. The framework of the standard GTAP model is well documented in the GTAP book (HERTEL, 1997) and available on the internet (http://www.gtap.agecon.purdue.edu/).

2.2   Extension of GTAP

The standard version of the GTAP model allows for the bilateral exchange of industrial and agricultural products as well as for trade in services. Thus, these components are not only demanded by domestic firms, private households and the government but also by foreign firms, private households and governments. However, in contrast to that the remaining input factors - capital, natural resources, land and also labor – are assumed to be regionally fixed. However, when it comes to the analysis of regional integration processes this means that a border opening for production factors, e.g. labor, cannot be considered simultaneously together with a trade liberalization. Thus, interdependencies between both aspects and resulting economic impacts cannot be observed.

In order to mimic migration the standard GTAP structure was modified in a way so that the extended model allows for bilateral movement of labor. Unlike to the standard GTAP model the factor labor is now able to cross borders and take part in the production process of foreign firms in different regions similar to production commodities. This migration mechanism generates a country's labor in- and outflow endogenously driven by the different regions' labor demand and supply, and the interregional wage differentials. Accordingly with the interregional differences in labor demand and wage level representing the driving forces of migration this way of modeling follows the classical migration theory inspired by Adam Smith and the approach of Harris & Todaro (1970).

For the implementation of this new feature the 'nested' production structure of the standard GTAP framework was expanded by an additional 'nest' (Figure 2.1). This component is responsible for the split-up of a country's total labor force into foreign workers on the one hand and domestic workers on the other hand. Thus, in contrast to the standard model firms now choose from a pool of workers composed of both nationals and foreigners.

Figure 2.1 represents the basic mechanism regulating the distribution of workers across countries. At the bottom of the circle a country's total labor force (total LF in r) gets divided into workers who decide to stay in their home country (LF in r) and get employed in the their home country's economy and workers who decide to emigrate.

Figure 2.1: Extended GTAP Production Structure
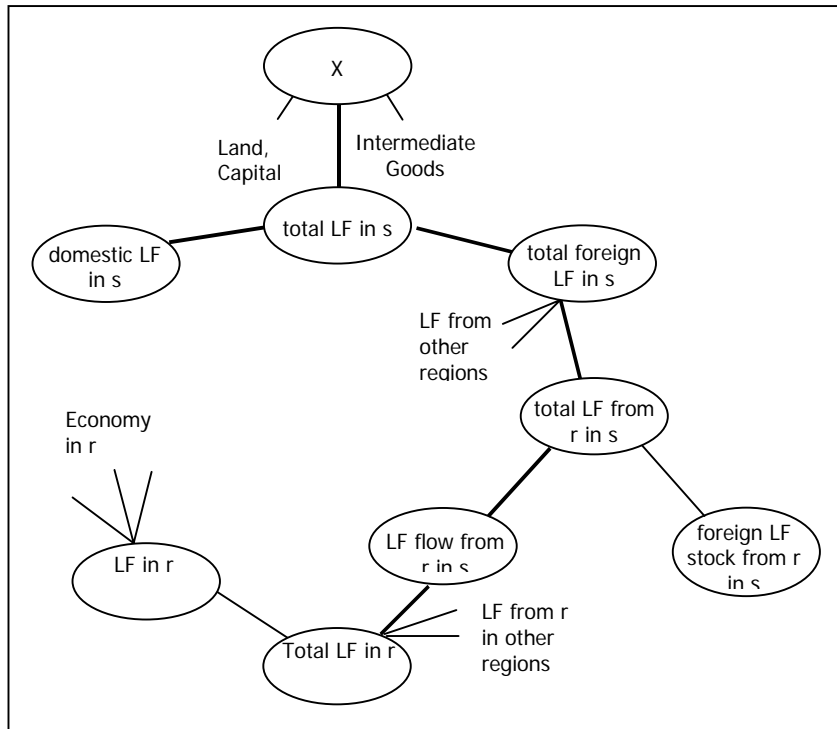
At that point the workers' decision making is regulated via a CES (Constant Elasticity of Substitution) function. In accordance with the Harris-Todaro theory the driving force of migration flows is the development of the different regions' wages. Thus, the corresponding parameters reflect the intensity of the workers' reactions to the developments of the wage level across regions. Furthermore the CES function ensures a distinction between the different nationalities of migrant workers and the resultant different preferences regarding the choice of a host country. The reason for such preferences can be found in social factors like geographical and cultural nearness, tradition etc. This theory is supplemented by another assumption implying a certain influence of the development of unemployment in different regions. It is assumed that migrants compare the unemployment situation in their home and potential host country. Accordingly if the development in the workers' home country is more

favorable than in the destination location the incentive to emigrate declines and vice versa. With unemployment reflecting a disequilibrium situation a CGE model is not capable of representing unemployment in its standard set-up. Thus, the implementation of unemployment is conducted via an application of Okun's law, which states that there exists an inverse relationship between the development of a country's GDP and the country's unemployment rate. This consideration of unemployment can only be regarded as an approximation since other related aspects, such as unemployment benefits, a social security system etc. are not taken into account. With this theoretical background the migrants who decided to move from r to s (LF from r in s) form together with the community of workers from r already living in s (foreign LF stock from r in s) the total pool of workers coming from r "available" in s (total LF from r in s) while the remaining migrants scatter across the other destinations (LF from r in other regions). Of course there are not only the workers from r who have chosen s as their working destination. Thus, in s summing-up all the immigrants stemming from countries all over the world a pool of foreign labor emerges (total foreign LF in s).

Together with the domestic workers who decided to stay in s (domestic LF in s) this represents the total labor force available to producers in s (total LF in s). The remaining production decisions taken are conducted in the "old fashioned" CGE/GTAP manner. Together with land and capital labor flows into the production process and builds the value-added nest. The last step to the final product (here: x) is the combination of value-added and other intermediate commodities.

Besides this main mechanism further extensions of the model framework comprise the incorporation of remittances. Based on the figures obtained from the IMF shares concerning the migrants' part of income that is sent back to their home country or spent in the host country, respectively, are calculated. This enables the consideration of the interregional redistribution of remittances. Thus, outgoing money is subtracted from the regional and private household income while incoming money is added on top of the corresponding

income.

As already described in the previously cross-border movements of workers and natural persons are always complicated by various obstacles such as bureaucratic procedures, border controls, visa etc. In the light of the EU Eastern enlargement these obstacles are to be abolished between the EU-15 and the new Member States. Thus, in order to represent an instrument regulating labor migration flows an immigration quota is implemented. This modeling exercise follows the so-called complementarity approach of Elbehriz & Pearson (2005)[1]. In their work this approach is used to consider the tariff-rate quota (TRQ) system, which emerged from the Uruguay Round Agreement on Agriculture as a new policy mechanism. In its initial form the TRQ represents a trade policy instrument, which combines elements of tariffs and quotas. The TRQ regulates that imports up to some fixed quantity are subject to a low tariff (in-quota tariff), while imports above this certain quantity are charged a very high tariff (out-of quota tariff). Thus, under the TRQ regime three different situations may arise. First, if the actual import quantity is lower than the quota than the (lower) in-quota tariff is effective so that the TRQ just "behaves" like a tariff. Secondly, in the case where the actually imported quantity is equal to the quota the quota becomes effective. In this "at quota situation" the domestic price exceeds the world market price augmented by the in-quota tariff, while the out-of quota tariff is that high, so that no imports occur above the quota. Thus, the tariff is prohibitive. And finally, if imports exceed the quota limit the (higher) out-of quota tariff comes into play. In the last two cases a positive quota rent arises, which accrues either to importers or exporters. Depending on the mechanism, by which the TRQ is administered the quota rent can also be shared between importers and exporters.

Since the purpose of the immigration quota is to stop the immigration of workers at a certain point the situation described in the second case represents the most important feature for the utilization of this approach as an immigration quota. Thus, in the reference scenario it is

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[1] A. ELBEHRI & K.R. PEARSON (2005): Implementing Bilateral Tariff Rate Quotas in GTAP Using GemPack. GTAP Technical Paper No. 18.

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assumed that immigration of workers from the CEECs and the remaining regions into the EU-15 is in the state of an at-quota situation; i.e. the number of actual immigrants is equal to the number allowed by the quota. In order to avoid that labor movements into the EU-15 exceed the quota in the course of a simulation the applied out-of quota tariff is prohibitive. Thus, with this set-up of the TRQ mechanism immigration might go down but cannot increase. The quota restriction only applies to immigration flows of unskilled and skilled labor into the EU-15 since within the EU-15 free movement of workers is fully realized. In order to mimic the more flexible handling of employment contracts for seasonal workers this labor category is exempted from the immigration quota restriction.

3 Modeling EU Eastern Enlargement

With regard to the EU enlargement scenario the main purpose of this chapter is to provide an overview of the model design including an explanation of the data situation, scenario set-up, regional and sectoral aggregation.

3.1 Data

For the following simulations the GTAP data base version 5.1 with the base year 1997 was used. This version comprises 76 regions with all EU-15 member countries as well as all candidate countries being represented individually. Furthermore the database includes 57 sectors providing a very detailed picture of the agricultural sector. In the GTAP database the agricultural sector consists of 20 primary and 8 processed food sectors.

Since the GTAP database does not provide for any migration related information those data had to be collected from some other external sources. Data regarding the share of foreign workers in a country's total labor force, migration flows by home and host country and even information about the migrants' skill level were obtained from the OECD, various national statistical institutions, the IMF etc. The shares of foreign workers according to sector were – at least for some countries - very well documented by the Labor Force Surveys of the ILO, Eurostat and IBV. Data with respect to remittance flows were exclusively collected at the

IMF. The IMF's data base provides information about remittance flows by source and destination so that calculations concerning money being sent from one country to the other could be conducted quite accurately.

Nevertheless the data situation particularly with respect to the transition countries of Central and Eastern Europe imposes strong restrictions on modeling.

3.2   Aggregation

The aggregation strategy was dictated by two main requirements: On the one hand the selection of countries must allow for capturing relevant labor flows and on the other hand in order to keep calculation effort in a reasonable scope the aggregation must not exceed a certain size. Therefore all countries representing home regions of most of the immigrants coming to Germany are treated as single individual countries. Obviously Germany and Poland are among those single regions as well as several other CEECs, Turkey and the Former Sovjet Union. The remaining countries are put together as aggregated regions either in the group representing the rest of EU-15 or comprising the rest of the CEECs respectively (see Figure 3.1).

Figure 3.1: Regional and Sectoral Aggregation

Regions		Sectors	
Germany	D	Primary Plant Products	plant
Poland	PL	Processed Plant Products	plantproc
Hungary	HUN	Vegetables and Fruits	vandf
Czech Republic	CZE	Animal Products	animal
Croatia	HRV	Processed Animal Products	aniproc
Slovakia	SVK	Other Food Products	oap
Rest of Former Sovjet Union	FSU	Construction	constr
Turkey	TUR	Primary Products	prim
Rest of EU-15	EU14	Manufactures	mnfcs
Denmark, Finland, Greece, Ireland,		Services	svces
Portugal, United Kingdom, Spain,		Capital Goods	CGDS
Austria, Italy, Belgium, France,			
Sweden, Netherlands, Luxembourg			
Rest of CEECs	CAND6		
Bulgaria, Estonia, Latvia,			
Romania, Slovenia, Lithuania			
Rest of the world	ROW		
Source: own illustration			

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Concerning the sectoral aggregation the 57 industries included in the GTAP database were aggregated to 11 sectors comprising 6 agricultural sectors. Here aggregation was predominantly determined by a sector's relevance in terms of migrant workers' employment as well as with regard to a sector's labor-intensity. Since particularly Germany's vegetables and fruits and also the building sector account for major shares of (seasonal) foreign employees, both industries are represented as disaggregated sectors. In order to being able to observe differences regarding impacts on labor-intensive and less labor-intensive sectors agricultural production is split-up into primary production sectors on the one hand and processing production sectors on the other hand. With regard to calculation effort the same restriction applies like in the case of the regional aggregation. Thus, agricultural production is just represented in form of the main agricultural production categories plant and animal production (see Figure 3.1).

3.3 Experiments

With respect to the integration of product markets the experiments at hand correspond to a classical EU enlargement scenario. Various adjustments with regard to the countries' trade regime have taken place. In the first step all trade distorting instruments, like tariffs and subsidies were fully abolished between the EU-15 and the candidate countries as well as among the CEECs themselves. Furthermore the CEECs' trade policy with respect to other third countries was adjusted to an EU level. Besides the trade related policy instruments output taxes and single-farm direct payments were adopted by the CEECs. Thereby the experiments consider a 100% adjustment to the EU-15 level of direct payments in the primary plant and animal as well as well as in the vegetables and fruits sector. Experiment 1 (Exp 1) exclusively represents an EU enlargement with these product market related adjustments outlined above. Experiment 2 (Exp 2) additionally considers a border opening of the EU-15's labor markets. Thus, the respective scenario considers a 3% expansion of the EU-15's immigration quota. This partial border opening applies to the CEECs and additionally to Croatia, the Former Soviet Union (FSU) and Turkey while the immigration situation for

workers from the other regions (ROW) remains unchanged.

4   Results

In order to illuminate the economic impacts of immigration restrictions the result interpretation concentrates on a comparison between the results obtained in the experiment assuming a constant EU-15 immigration quota (Exp 1) on the one hand and the scenario allowing for an increased number of immigrants from non-EU-15 countries (Exp 2) on the other hand. Thereby impacts on migration related issues, labor market, production and trade represent the main areas of interest. The regional focus is particularly dedicated to effects in Germany and the EU14 region.

Migration

Table 4.1 pictures the change in migration flows of unskilled labor after an EU enlargement scenario excluding the integration of labor markets; i.e. there is no improved access to the EU-15's labor market for workers from the new Member States or the remaining regions. Thus, the number of employees migrating to the EU-15 may decrease but not increase compared to the reference situation. This leads to the migration pattern shown in table 4.1.

Table 4.1: Change in Migration Flows of Unskilled Labor after EU Enlargement (Exp 1) (%)

Home \ Host	D	EU14	PL	CZE	HUN	SVK	CAND6	HRV	FSU	TUR	ROW
D	0.005	-0.269	8.336	4.675	17.160	5.792	7.509	-0.012	-0.583	-0.215	-0.365
EU14	0.277	0.001	8.630	4.960	17.478	6.079	7.801	0.260	-0.313	0.056	-0.095
PL	-0.882	-0.556	-0.282	-3.651	7.841	-2.623	-1.042	-7.965	-8.491	-8.152	-8.291
CZE	0.000	0.000	3.453	-0.043	11.879	1.024	2.663	-4.519	-5.064	-4.712	-4.856
HUN	-7.665	-7.919	-7.904	-11.015	-0.402	-10.066	-8.606	-15.000	-15.485	-15.172	-15.301
SVK	0.000	0.000	2.233	-1.221	10.560	-0.168	1.453	-5.645	-6.183	-5.836	-5.978
CAND6	0.000	0.000	0.524	-2.872	8.712	-1.836	-0.243	-7.221	-7.751	-7.410	-7.549
HRV	0.000	0.000	8.471	4.806	17.307	5.924	7.644	0.113	-0.458	-0.090	-0.241
FSU	0.000	0.000	8.959	5.278	17.835	6.401	8.128	0.564	-0.010	0.360	0.208
TUR	0.000	0.000	8.563	4.895	17.406	6.014	7.735	0.198	-0.374	-0.005	-0.156
ROW	0.000	0.000	8.733	5.059	17.589	6.180	7.903	0.354	-0.219	0.151	0.000

Source: own calculation

The only changes in labor immigration from the new Member States to the EU-15 can be observed in the case of Poland and Hungary. Here immigration flows decrease significantly resulting from the wage developments concerning the two CEECs. This is particularly obvious regarding wage development in Hungary. With the wage level in Hungary increasing significantly stronger than the wage level for Hungarian workers employed in Germany or the EU14, less Hungarian workers decide to emigrate. Also with respect to the demand side the conditions do not favor the immigration of Hungarian workers into the EU-15. Since the price for Hungarian labor ranges above the composite wage for foreign workers available in the EU-15 Hungarian workers are less competitive compared to migrant workers from other destinations; i.e. they substitute the now more expensive Hungarian labor. The situation is similar in the case of Polish immigration into Germany and the EU14 region albeit to a lesser extent. The wage developments on demand and supply side experience the same pattern showing a strong wage increase in Poland. At the same time the expected wage level for Polish workers getting employed in Germany or the EU14 also rises whereas these increases are weaker than the wage increase in Poland; i.e. at home. In addition to that the development of unemployment in the three countries rather favors staying in Poland since unemployment decreases stronger in Poland than in Germany and the EU14. Thus, the wage developments

together with the changes concerning the employment situation weaken the supply of Polish migrants in the whole EU-15. Looking at the demand side shows that Polish workers become comparatively more expensive than other migrant employees so that in addition to the supply the demand declines too. Since labor movement within the EU-15 is not regulated by an immigration quota migration from the EU14 to Germany increases slightly while movements from Germany to the EU14 decrease. The wage fluctuations driving these results are not that heavy like in the case of immigration from Hungary. With the wage level in Germany increasing slightly but the expected wage for German workers moving to the EU14 region remains almost unchanged less people decide to move. In addition to this the demand for German employees also slows down because German workers become relatively more expensive since the wage level for German migrant workers decreases less than the wage level for other foreign workers. The situation concerning EU14 citizens migrating to Germany is exactly reversed. While the composite EU14 wage level declines slightly the expected wage for workers moving to Germany slightly increases. Thus, a supply pressure arises supplemented by a strengthened demand situation. This situation occurs since the price for migrant workers coming from the EU14 region increases a little less than the composite wage for foreign workers in Germany.

With regard to immigration of Germans into the EU accessing regions table 4.1 shows heavy increases of up to 17.160%. This strongest result is obtained for the inflow of German workers into Hungary. But also immigration into Poland shows a significant positive development accounting for the second highest change (8.336%). For both migration routes a strong migrant supply pressure arises resulting from a wage development favoring migration. Compared to the wage increase in Poland and Hungary the wage increase in the German labor market is quite marginal. Since this is also reflected by the change in the wage level for German workers migrating to Poland and Hungary more Germans decide to emigrate. On the demand side the situation among the two receiving countries differs. While in Hungary the wage level for German workers experiences a weaker increase than the composite wage

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across all foreign workers German workers become more competitive and thus, experience a stronger demand situation. In contrast in Poland German migrant workers are less favored because here the wage increase for German workers is – though marginally – stronger than the composite wage increase for foreign employees working in Poland. However, this "German lust for leaving" only applies to the migration route leading to the new Member Countries. Immigration into the non-EU countries – Croatia, FSU, Turkey – shows a decreasing tendency.

Poland experiences a strong immigration increase particularly from the EU-15 and also from Croatia, FSU and Turkey. Labor inflows from the other new Member States also increase except for inflows from Hungary, which show a decreasing tendency. In contrast to that the situation concerning labor movements out off Poland represents quite the opposite. Accordingly migration from Poland to all other regions declines while the flow of Polish workers into Hungary increases. The immigration pattern looks different with respect to the various receiving countries. The inflow of Polish workers into non-EU regions decreases particularly strongly while the movements into the other new Member States decreases only quite modest. Also all the other remaining migration routes show a quite lively development. As already previously explained there are not only the newly incoming migrants employed in the host country's economy but also the already existing stock of foreign workers who immigrated in the past. Thus, Table 4.2 depicts the change in the number of workers from the different home countries working in a certain host country; i.e. change in migrant stock plus newly incoming labor flow. Besides providing information about a country's total migrant population these numbers shed light on the former developments of immigration. When the change in the labor flow strongly influences the change concerning the total number of immigrants from a specific home country in a certain host country, then the share of the flow is relatively high in this total number so that it can be concluded that the migrant stock is quite small. Thus, there was no significant migration taking place in the past. For example in the case of Poland the inflow of Germans, Croatians and workers from the FSU increases

approximately at the same pace.

Table 4.2: Change in Number of Unskiled Foreign Workers after EU Enlargement by Home and Host Region (Exp 1) (%)

Home \ Host	D	EU14	PL	CZE	HUN	SVK	CAND6	HRV	FSU	TUR	ROW
D	0.000	-0.027	0.822	0.464	6.738	2.302	0.000	-0.005	-0.233	-0.021	-0.037
EU14	0.028	0.000	0.851	0.492	6.861	2.415	0.770	0.104	-0.125	0.006	-0.009
PL	-0.088	-0.056	0.000	-0.367	0.774	-1.052	-0.417	-3.217	-3.431	-3.293	-3.349
CZE	0.000	0.000	1.376	0.000	4.690	0.409	1.062	-1.817	-2.038	-1.895	-1.954
HUN	-0.777	-0.803	-3.192	-4.465	0.000	-4.076	-3.478	-6.112	-6.314	-6.184	-6.237
SVK	0.000	0.000	0.891	-0.122	1.038	0.000	0.580	-2.273	-2.492	-2.351	-2.408
CAND6	0.000	0.000	0.210	-0.289	0.859	-0.736	-0.097	-2.914	-3.129	-2.990	-3.047
HRV	0.000	0.000	3.357	0.000	6.795	2.354	3.031	0.000	-0.183	-0.036	-0.096
FSU	0.000	0.000	3.548	0.523	1.733	2.542	0.802	0.225	-0.004	0.144	0.021
TUR	0.000	0.000	3.393	0.000	6.833	2.390	0.763	0.079	-0.037	0.000	-0.016
ROW	0.000	0.000	0.861	0.502	1.709	0.612	0.780	0.036	-0.022	0.015	0.000

Source: own calculation

But looking at Table 4.2 shows that the total number of workers from these different destinations rises unequally. Thus, in this case the stock of German workers is bigger than the stock of Croatian workers since a similarly strong increase in immigration shows rather marginal impact on the total number of Germans while the total number of Croatian employees experiences a significant increase.

In sum the changes in migration pattern cause an increase in Poland's and Germany's unskilled migrant labor force of 0.850% and 0.006% respectively, while the EU14 experiences a decline of –0.003%. Similar to the situation explained above these numbers reflect the relevance and the magnitude of the different sending countries in a host country's total foreign labor population. In the case of Germany it becomes obvious that the number of Hungarian migrants is rather marginal compared to the workers coming from the EU14 region. Despite the definitely strong decline of workers from Hungary and an only small increase of workers from the EU14 the number of total migrant unskilled employees increases. A similar situation can be observed in the case of immigration into the EU14 and Poland with the comparatively weaker decrease of immigration from Germany dominating the overall result.

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With the relaxation of the EU-15's immigration quota workers from the new Member States, Croatia, FSU and Turkey gain better access to the EU-15's labor market and thus, the corresponding migration pattern changes. Table 4.3 shows the resulting immigration flows into the EU-15 region.

Table 4.3: Change in Migration Flows of Unskilled Labor after EU Enlargement and Expansion of the EU-15's Immigration Quota (Exp 2) (%)

Home \ Host	D	EU14	PL	CZE	HUN	SVK	CAND6	HRV	FSU	TUR	ROW
D	0.087	-0.189	8.432	4.768	17.267	5.878	7.602	0.090	-0.502	-0.133	-0.285
EU14	0.289	0.012	8.651	4.980	17.503	6.091	7.819	0.291	-0.301	0.069	-0.084
PL	-0.890	-0.567	-0.284	-3.653	7.841	-2.633	-1.047	-7.956	-8.500	-8.160	-8.300
CZE	3.000	2.627	3.452	-0.043	11.881	1.015	2.660	-4.507	-5.071	-4.719	-4.865
HUN	-7.673	-7.928	-7.906	-11.017	-0.402	-10.075	-8.611	-14.991	-15.493	-15.180	-15.309
SVK	2.078	1.795	2.262	-1.194	10.593	-0.147	1.479	-5.606	-6.164	-5.816	-5.960
CAND6	0.763	0.485	0.510	-2.886	8.699	-1.858	-0.260	-7.223	-7.772	-7.429	-7.571
HRV	3.000	3.000	8.470	4.805	17.307	5.914	7.639	0.124	-0.468	-0.098	-0.251
FSU	3.000	3.000	8.969	5.287	17.847	6.402	8.134	0.585	-0.010	0.361	0.208
TUR	3.000	3.000	8.572	4.903	17.417	6.014	7.740	0.218	-0.374	-0.004	-0.157
ROW	0.000	0.000	8.742	5.068	17.602	6.180	7.909	0.376	-0.218	0.153	0.000

Source: own calculation

As a consequence of the partial border opening the labor inflow from the CEECs into Germany and the EU14 region rises. Thus, immigration from the Czech Republic, Slovakia and the CAND6 region increases. The migrant flow from the Czech Republic experiences the strongest upward trend showing an increase of exactly 3%. With respect to the quota regulation this means that this represents the strongest increase possible under these conditions since the quota expansion amounts to 3%. Thus, regarding the labor flow from the Czech Republic again an at-quota stage is reached and the quota is binding. Furthermore the quota expansion leads to an increased immigration of unskilled workers coming from Slovakia and the CAND6 region into the EU-15. Thereby immigration from the CAND6 region shows the weakest performance with labor movements increasing less than 1%. In these cases the capacity of the quota expansion is not fully used. Thus, an in-quota situation with a non-binding quota stage arises. This also applies to the immigration of workers showing a negative development, like immigration from Poland and Hungary. Regarding

migration movements from potential candidate countries and other non-EU countries – Croatia, FSU and Turkey – the EU-15's border opening leads to the strongest immigration increase possible; i.e. the quota expansion is "fully used" so that again an at-quota stages arises. What concerns migration flows, which are not subject to the quota regulation the corresponding policy shock does not lead to any major changes compared to Exp 1; i.e. the changes that can be observed are very marginal and are located in the third decimal place. Of course the change in immigration into the EU-15 also shows its impacts on the total number of foreign workers employed in Germany and the EU14 region. As Table 4.4 indicates the changes are slightly stronger in Germany than in the EU14. Particularly the number of Czech employees working in Germany increases significantly while the inflow from the remaining CEECs is rather modest or even declines like in the case of Hungarian immigrants.

Table 4.4: Change in Number of Unskilled Foreign Workers after EU Enlargement by Home and Host Region (Exp 2) (%)

Host / Home	D	EU14	PL	CZE	HUN	SVK	CAND6	HRV	FSU	TUR	ROW
D	0.000	-0.019	0.831	0.473	6.780	2.336	0.000	0.036	-0.201	-0.013	-0.029
EU14	0.029	0.001	0.853	0.494	6.871	2.420	0.772	0.117	-0.121	0.007	-0.008
PL	-0.089	-0.057	0.000	-0.368	0.774	-1.056	-0.419	-3.213	-3.435	-3.296	-3.353
CZE	1.196	0.262	1.376	0.000	4.691	0.406	1.061	-1.812	-2.041	-1.898	-1.957
HUN	-0.778	-0.804	-3.192	-4.466	0.000	-4.079	-3.480	-6.109	-6.318	-6.187	-6.241
SVK	0.207	0.179	0.902	-0.120	1.041	0.000	0.590	-2.257	-2.484	-2.342	-2.401
CAND6	0.076	0.048	0.204	-0.290	0.857	-0.745	-0.104	-2.914	-3.138	-2.998	-3.056
HRV	0.298	0.298	3.356	0.000	6.795	2.350	3.030	0.000	-0.187	-0.039	-0.100
FSU	1.196	0.298	3.552	0.524	1.734	2.542	0.802	0.234	-0.004	0.144	0.021
TUR	0.298	0.298	3.396	0.000	6.838	2.389	0.764	0.087	-0.037	0.000	-0.016
ROW	0.000	0.000	0.861	0.502	1.711	0.612	0.780	0.038	-0.022	0.015	0.000

Source: own calculation

In total these developments lead to an increase in foreign unskilled labor working in Germany by 0.092% while in the EU14 the migrant foreign labor force declines by 0.014%. Since there are no border controls in place concerning immigration into Poland the situation remains almost unchanged compared to Exp 1 so that the change in total foreign unskilled labor still amounts 0.85%.

Table 4.5: Change in inflowing and outflowing Remittances after EU Enlargement (%)

Remittances / Region		D	EU14	PL	CZE	HUN	SVK	CAND6	HRV	FSU	TUR	ROW
Inflowing Remittances	Exp 1	-0.199	-0.108	0.494	-0.356	-0.393	5.240	3.086	0.187	7.786	0.000	-0.205
	Exp 2	-0.194	-0.109	0.497	-0.267	-0.396	5.253	3.109	0.374	7.829	0.147	-0.207
Outflowing Remittances	Exp 1	0.203	-0.105	10.542	5.663	21.274	7.460	9.513	-0.690	-0.480	-0.031	-0.215
	Exp 2	0.293	-0.085	10.550	5.672	21.286	7.472	9.516	-0.685	-0.480	-0.031	-0.217

Source: own calculation

The implementation of the migration mechanism into the standard GTAP framework also entails the consideration of remittances. Obviously the remittance flow can be observed from two different perspectives: from the perspective of the remittance receiving and also of the remittance sending region. Therefore, Table 4.5 depicts the changes in both inflowing and outflowing remittances. The results show that the EU enlargement process leads to a decrease of inflowing remittances into the EU-15, the Czech Republic and Hungary while Poland, Slovakia and the CAND6 region experience an expansion in their remittance volume. The fact that inflowing remittances into the EU-15 region are slightly decreasing is kind of surprising since one would expect that with more people emigrating remittances would rise. In the case of inflowing remittances into Germany the reason for this development is that the majority of German emigrants work in the EU14 region. Since labor flows from Germany into the EU14 go down and wages for foreign workers employed in the EU14 region decline remittances to Germany decrease as well. The situation concerning money transfers sent back to the EU14 is similar. At the same time money transfers going out of the different host countries also change. With regard to the strong changes occurring in the CEECs the results reflect the increased immigration into these countries. Since more migrant employees working and therewith earning their salary in the CEECs the proportion of outflowing remittances also rises. This development is particularly strong in the case of Hungary and Poland.

The impacts of the expansion of the EU-15's immigration quota (Exp 2) on remittance flows become particularly apparent in the case of inflowing money into Croatia and Turkey, and correspondingly with respect to outflowing money transfers from Germany and the EU14. As a result of the partial border opening more workers from these two countries move into the

EU-15 and therewith the volume of the inflowing remittances into the labor sending countries shows an upward trend. Vice versa the EU-15 as the host region experiences an increased outflow of remittances. As Table 4.5 shows inflowing and outflowing remittance transfers with respect to the remaining regions also show some fluctuations but are not subject to any major changes.

Output

Table 4.6 depicts the changes in the different countries' production output after the EU enlargement process. Thereby the general picture indicates that the CEECs experience the strongest relative changes while the EU-15 and the other regions show much weaker effects. With regard to agricultural production Germany experiences output expansions in the primary plant products, vegetables and fruits, and also processed food products sectors. At the same time the primary and processed animal production industries slightly cut back their production. With regard to non-agricultural sectors the strongest production expansion can be observed in the primary sector. Comparing the results obtained from the different experiments shows that the partial opening of the EU-15's borders for migrant workers causes a stronger output performance in every industry. Thus, the increased immigration of foreign workers into Germany leads to stronger production expansions and a weaker production declines respectively. In the case of the service sector the migration quota expansion even turns a formerly slightly negative result into a positive output change. The development in the EU14 region is quite similar albeit the impact of the liberalized immigration regime produces weaker effects than observed in Germany. The reason for these differing situations is that Germany – together with Austria – represents the main migration destination for workers from other European countries. Thus, with foreign workers accounting for a higher share in Germany's labor force than in the EU14 region the increased immigration also shows stronger effects on the Germany economy. What concerns the remaining regions the impact of the quota expansion is rather modest. However, the service sector, which accounts for the largest

share of unskilled and skilled labor in the production process represents an exception. As Table 4.6 shows Germany and the new Member States are able to strengthen their service output after the EU-15's partial border opening for foreign workers while Croatia, FSU and Turkey experience further declines in their service sectors.

Table 4.6: Change in Production Output after EU Enlargement (%)

Product	Region	D	EU14	PL	CZE	HUN	SVK	CAND6	HRV	FSU	TUR	ROW
plant	Exp 1	0.193	0.200	-2.195	0.663	1.777	-2.149	-3.331	-0.052	0.662	0.070	0.014
	Exp 2	0.220	0.209	-2.194	0.663	1.775	-2.146	-3.336	-0.049	0.665	0.071	0.016
plantproc	Exp 1	0.006	-0.032	2.135	10.172	5.585	2.467	-9.341	-2.535	0.086	-0.158	-0.047
	Exp 2	0.056	-0.023	2.142	10.174	5.584	2.471	-9.344	-2.531	0.088	-0.157	-0.046
vandf	Exp 1	0.591	1.353	-14.305	-7.256	-12.753	-7.887	-8.541	0.328	0.205	0.124	0.032
	Exp 2	0.653	1.370	-14.305	-7.257	-12.752	-7.884	-8.545	0.333	0.206	0.126	0.033
animal	Exp 1	-1.519	-2.062	16.696	3.497	18.091	2.802	2.225	-0.272	-0.805	-0.105	-0.133
	Exp 2	-1.462	-2.052	16.696	3.499	18.092	2.806	2.219	-0.255	-0.804	-0.105	-0.133
aniproc	Exp 1	-1.221	-0.943	11.760	3.709	32.087	3.853	19.999	-1.198	-1.406	-0.056	-0.179
	Exp 2	-1.163	-0.933	11.763	3.710	32.092	3.857	20.002	-1.184	-1.404	-0.056	-0.178
oap	Exp 1	0.672	-0.042	-2.981	-0.444	3.601	-1.503	-3.531	0.658	0.333	1.086	0.041
	Exp 2	0.717	-0.032	-2.979	-0.444	3.603	-1.499	-3.537	0.669	0.337	1.087	0.041
constr	Exp 1	0.148	0.076	10.312	-2.654	8.894	2.068	22.096	-4.473	-0.231	-0.284	-0.187
	Exp 2	0.275	0.078	10.310	-2.655	8.896	2.070	22.076	-4.415	-0.243	-0.288	-0.194
prim	Exp 1	1.089	0.640	-10.076	-8.898	-14.918	-2.619	-16.021	11.190	0.203	-0.023	0.159
	Exp 2	1.121	0.644	-10.076	-8.900	-14.920	-2.617	-16.025	11.192	0.207	-0.023	0.161
mnfcs	Exp 1	0.017	0.077	1.043	8.286	0.562	5.030	2.254	-1.870	-0.166	-0.293	-0.012
	Exp 2	0.075	0.082	1.041	8.288	0.563	5.034	2.247	-1.858	-0.169	-0.292	-0.012
svces	Exp 1	-0.014	0.168	-2.765	-4.695	-8.874	-3.810	-1.177	-0.765	0.197	0.035	0.068
	Exp 2	0.075	0.082	1.041	8.288	0.563	5.034	2.247	-1.858	-0.169	-0.292	-0.012
CGDS	Exp 1	0.193	0.023	17.883	2.113	12.745	5.872	33.922	-7.285	-0.364	-0.368	-0.260
	Exp 2	0.343	0.023	17.879	2.111	12.748	5.875	33.895	-7.198	-0.379	-0.375	-0.269

Source: own calculation

Labor Market

Of course the changes in migration flows show impacts on the EU-15's labor market situation. As Table 4.7 shows the EU enlargement scenario causes a wage increase in Germany while the EU14 experiences a wage decline. Comparing Exp 1 and Exp 2 shows that the immigration quota expansion leads to weaker wage increases in Germany and stronger wage decreases in the EU14 respectively. This pattern applies to both domestic and migrant labor. The wage level for seasonal labor strongly declines in the whole EU-15. Since

immigration of seasonal workers into the EU-15 is not subject to the quota regulation the respective wage level is only affected marginally by the quota expansion.

Table 4.7: Change in Wages for Domestic and Migrant Workers after EU Enlargement (%)

Labor \ Region		D	EU14	D	EU14
		Domestic Labor		**Migrant Labor**	
UnSkLab	Exp 1	0.212	-0.104	0.212	-0.102
	Exp 2	0.182	-0.109	0.179	-0.110
SkLab	Exp 1	0.231	-0.104	0.223	-0.100
	Exp 2	0.188	-0.099	0.186	-0.099
Seasonal	Exp 1	-	-	-13.203	-2.423
	Exp 2	-	-	-13.188	-2.427

Source: own calculation

In line with the fluctuations of the wages for domestic and foreign labor the regions' overall composite wage level is influenced. Thereby Table 4.8 indicates that the composite wage is very strongly influenced by the domestic wage level. The reason for this "dominant" role of the domestic wage is the very high share of native employees compared to the share of foreign workers.

Table 4.8: Change in Composite Wage Level after EU Enlargement (%)

Labor \ Region		D	EU14
UnSkLab	Exp 1	0.212	-0.104
	Exp 2	0.182	-0.109
SkLab	Exp 1	0.231	-0.104
	Exp 2	0.188	-0.099
Seasonal	Exp 1	-12.924	-5.555
	Exp 2	-12.906	-5.581

Source: own calculation

Besides the wage situation the adjustments occurring in the course of the EU enlargement also show their impacts on the markets for production input factors and therewith also labor demand.

Table 4.9 pictures the case of Germany's change in demand for input factors in the different sectors. Comparing these results with the obtained changes in production output indicates a quite parallel development; i.e. in the case of production expansions factor demand increases

as well and vice versa. Thereby a strong production increase leads to a strong change in factor demand while a rather slight production change also causes an only small change in factor demand. Thus, as expected the industries experiencing a production expansion also demand more workers in order to cope with the increased order situation, while sectors suffering from an output decline demand less workers. The demand for unskilled and skilled labor thereby follows the general trend of a quite parallel development between magnitude and direction of impacts on input factor labor and the corresponding sector. However, with significant increases in all sectors seasonal labor represents an exception.

Table 4.9: Change in Germany's Production Input Demand after EU Enlargement (%)

Input	Sector	plant	plant proc	vandf	animal	aniproc	oap	constr	prim	mnfcs	svces	CGDS
Land	Exp 1	0.248	0.354	0.600	-1.140	-0.230	0.669	0.445	1.049	0.373	0.380	0.427
	Exp 2	0.233	0.351	0.636	-1.108	-0.232	0.691	0.454	1.063	0.348	0.376	0.470
UnSkLab	Exp 1	0.197	0.026	0.589	-1.609	-1.203	0.674	0.162	1.213	0.029	0.012	0.208
	Exp 2	0.238	0.141	0.660	-1.540	-1.089	0.728	0.333	1.278	0.107	0.149	0.399
SkLab	Exp 1	0.192	0.005	0.584	-1.613	-1.223	0.669	0.136	1.206	0.006	-0.013	0.190
	Exp 2	0.237	0.133	0.659	-1.542	-1.096	0.727	0.324	1.275	0.098	0.140	0.393
Capital	Exp 1	0.126	-0.005	0.582	-1.493	-1.233	0.667	0.123	1.202	-0.006	-0.026	0.180
	Exp 2	0.130	0.001	0.629	-1.458	-1.227	0.697	0.158	1.226	-0.051	-0.024	0.274
NatRes	Exp 1	-0.002	-0.003	-0.001	-0.010	-0.004	0.000	-0.003	0.000	-0.003	-0.003	-0.003
	Exp 2	-0.002	-0.003	0.000	-0.009	-0.004	0.000	-0.003	0.000	-0.003	-0.003	-0.003
Seasonal	Exp 1	3.718	17.073	4.124	1.849	15.636	4.212	21.936	7.201	19.403	21.461	15.325
	Exp 2	3.748	17.141	4.185	1.907	15.702	4.255	22.058	7.246	19.419	21.541	15.487

Source: own calculation

These results have to be interpreted considering the share of seasonal workers in the sectors' total value-added. Thereby it has to be kept in mind that the only sectors employing seasonal labor are the primary plant production sector ('plant'), the vegetables and fruits sector ('vandf') and the construction industry ('constr'). With respect to all the remaining sectors seasonal labor takes a minimal share so that even a very strong demand increase reflects a negligible absolute effect. Thus, in order to avoid a wrong impression the respective results are printed in light. The disproportionately high increase in the demand for seasonal labor in the three named industries is caused by a more favorable wage development for this labor category compared to unskilled and skilled labor. As Table 4.9 indicates the relaxation of the EU-15's immigration quota causes a stronger demand for all labor categories. Thereby the relative effect on the labor types subject to the quota regulation - unskilled and skilled labor – is stronger than the impact on seasonal labor demand. Even though seasonal labor is not

directly affected by the shock to the immigration quota this labor type also faces a slightly stronger demand because of the general production expansion.

With regard to the other production input factors the differences between Exp 1 and Exp 2 are smaller than in the case of labor. The demand situation shows some fluctuations but these are rather modest. However, in some cases the demand for land, capital or natural resources follows the trend of labor by experiencing a stronger demand while sometimes the development is the opposite showing a weaker demand for these input factors. This pattern is determined by the degree of substitutability between the different production factors. Thus, depending on the sector the increased labor demand situation might fuel the demand for non-labor input factors or weaken the demand for these production factors since they are substituted by labor.

Trade

With the implementation of a customs union between the EU-15 and the 10 CEECs trade barriers particularly regarding agricultural products came down and external border protection of the new members was adjusted to the EU-15 level. Thus, agricultural trade between the two blocs experienced heavy changes.

Table 4.10: Change in German Exports to Different Destinations after EU Enlargement (%)

Product	Destination	EU14	PL	CZE	HUN	SVK	CAND6	HRV	FSU	TUR	ROW
plant	Exp 1	-0.937	48.469	-7.925	63.898	-21.942	32.395	6.262	-0.232	-0.703	-1.228
	Exp 2	-0.993	48.396	-7.968	63.804	-21.988	32.306	6.246	-0.300	-0.773	-1.300
plantproc	Exp 1	-1.934	101.755	28.347	94.520	22.473	42.427	-0.859	-2.665	-0.220	-0.952
	Exp 2	-1.986	101.676	28.301	94.434	22.422	42.340	-0.891	-2.722	-0.285	-1.023
vandf	Exp 1	-0.592	125.450	36.786	178.805	47.399	15.603	2.695	0.000	-0.708	-1.033
	Exp 2	-0.608	125.427	36.769	178.775	47.372	15.573	2.735	-0.022	-0.733	-1.063
animal	Exp 1	-19.421	65.986	224.835	147.555	289.334	135.102	13.690	-7.803	-1.058	-0.102
	Exp 2	-19.451	65.945	224.756	147.471	289.229	134.982	13.710	-7.849	-1.110	-0.168
aniproc	Exp 1	-6.010	257.379	33.843	117.628	36.535	147.946	-1.452	-6.428	-1.074	-1.218
	Exp 2	-6.047	257.279	33.807	117.567	36.499	147.831	-1.454	-6.474	-1.128	-1.276
oap	Exp 1	-0.332	150.643	89.989	191.777	108.068	141.777	8.200	5.391	-0.365	-0.473
	Exp 2	-0.371	150.570	89.930	191.693	107.994	141.649	8.228	5.347	-0.420	-0.533
constr	Exp 1	-0.311	8.237	6.913	35.788	15.858	34.521	-5.579	-0.860	-0.412	-0.717
	Exp 2	-0.320	8.235	6.911	35.794	15.857	34.491	-5.520	-0.877	-0.425	-0.735
prim	Exp 1	-1.252	896.089	47.098	348.344	159.860	325.847	3.238	-1.322	-2.218	-2.089
	Exp 2	-1.396	894.938	46.909	347.737	159.503	325.208	3.125	-1.471	-2.366	-2.245
mnfcs	Exp 1	-1.299	30.074	20.879	23.113	10.427	37.778	-2.429	-1.483	-0.676	-1.311
	Exp 2	-1.283	30.096	20.902	23.133	10.454	37.791	-2.380	-1.476	-0.667	-1.309
svces	Exp 1	-0.485	12.926	13.079	15.328	17.518	12.451	-2.439	-1.078	-0.628	-0.905
	Exp 2	-0.532	12.874	13.029	15.281	17.472	12.387	-2.472	-1.136	-0.683	-0.965

Source: own calculation

With regard to Germany's export performance the general picture presented in Table 4.10 shows a tremendous export increase from Germany to the new EU Member States, in particular in the field of primary and processed animal products as well as other food products. German exports of plant products also experience a significant expansion whereas exports of primary plant products in some cases show a negative trade development. Nevertheless, while Germany gains ground on the markets of the CEECs, it loses some of its intra-EU15 market share. Comparing the results obtained from Exp 1 and Exp 2 shows that Germany's export performance is slightly weakened with regard to almost every product and export destination. Only exports of manufactures and exports to Croatia show a stronger performance after the liberalized immigration regime of the EU-15. As Table 4.11 indicates the increased production output caused by the immigration quota expansion depicted in Table 4.6 is particularly used to satisfy a stronger domestic demand situation. The stronger immigration flows into Germany lead to higher domestic sales and lower reductions in domestic sales of every product. This reflects the demand of the additional migrant workers

now working and also consuming in Germany.

Table 4.11: Change in Domestic Sales of Different Products in Germany after EU
Enlargement (%)

Product Experiment	plant	plant proc	vandf	animal	aniproc	oap	constr	prim	mnfcs	svces
Exp 1	-0.030	-0.638	-0.178	-1.297	-1.226	-1.180	0.147	-0.154	-0.440	-0.009
Exp 2	0.019	-0.570	-0.104	-1.237	-1.153	-1.122	0.276	-0.103	-0.352	0.065

Source: own calculation

5 Conclusion

The aim of the study at hand is to investigate the impacts of the EU Eastern enlargement under two different assumptions. In the first case (Exp 1) the EU-15 and the new Member States create a customs union comprising exclusively the integration of product markets. Thus, trade distorting measures are abolished and also other policies, e.g. direct payments, of the new States are adjusted to the EU-15 policy regime. Thereby international movement of workers is restricted via an immigration quota so that increased migration pressure from any non-EU-15 country is "stopped" at the EU-15 border. In the second case (Exp 2) the same product market related interventions are examined but this time assuming less restricted migration movements; i.e. more foreign workers are allowed to enter the EU-15's labor market. The results show that particularly for the main immigration country Germany the increased migrant labor supply causes a stronger demand for labor and at the same time a stronger output performance. Wages increase less than in the case of a "closed" immigration quota and outflowing remittances increase particularly in dominant sending countries such as Turkey. With regard to trade Germany slightly loses ground concerning almost ever product and export destination. However, because of the increased migrant population domestic sales experience a stronger positive change than under restrictive immigration regime.

6 Qualifications

In a quantitative analysis it is a very difficult task to depict any qualitative circumstances.

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With regard to the migration topic this becomes particularly apparent when it comes to the representation of migration restrictions. Those restrictions mostly exist in form of certain bureaucratic procedures, special requirements a potential immigrant has to fulfill etc. Due to a lack of quantitative estimations of such rules and formalities, such migration restrictions are not considered in the study at hand. This short-coming has to be kept in mind when looking at the results because for the analysis the assumption of free movement of labor applies.

Furthermore data availability imposes major problems on the modeling opportunities. Data collection regarding the share of foreign workers in a country's labor force, migration flows by home and host country etc. turned out to be particularly difficult for the CEECs. Due to this lack of data it has to be mentioned that some simulation results may be distorted. Besides the availability of base data another difficult task was the introduction of adequate parameters. Since migration has never been estimated via the Armington approach before there exist no corresponding parameters reflecting the elasticity of substitution between domestic and foreign labor in the literature. Thus, for the experiment at hand the Armington parameters are based on income migration elasticities. Further research demand is also necessary in terms of the consideration of technological progress and therewith the development and/or advance of labor-saving production processes particularly with regard to transition countries. Last but not least especially in the case of Germany it is essential to further focus on the characteristics of the very complex social security system and its interactions with migration behavior.

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