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Germany's Immigration Policy and Labor Shortages

Amelie F. Constant
Bienvenue N. Tien

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Amelie F. Constant
IZA, DIWDC, and George Washington University*

Bienvenue N. Tien
DIWDC

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*Corresponding Author
Amelie Constant, Ph.D.
Program Director - Migration
IZA
P.O Box 7240
53072 Bonn
Germany
E-mail: constant@iza.org

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Abbreviations

§	Section (of a legal act)
AufenthG	Aufenthaltsgesetz (Residence Act/Permit)
AZR	Ausländerzentralregister (Central Register of Foreign Nationals)
BA	Bundesagentur für Arbeit (Federal Employment Agency)
BAMF	Bundesamt für Migration und Flüchtlinge (Federal Office for Migration and Refugees)
BMAS	Bundesministerium für Arbeit und Soziales
	(Federal Ministry of Labor and Social Affairs)
BMI	Bundesministerium des Innern (Federal Ministry of Interior)
EU	European Union
DRV Bund	Deutsche Rentenversicherung Bund
GKV	Gesetzliche Krankenversicherung
IAB	Insitut für Arbeitsmarkt- und Berufsforschung (Insitute for Employment Research)
IHK	Industrie-und Handelskammer
ISCO	International Standard Classification of Occupations
OECD	Organization for Economic Co-operation and Development
PKV	Private Krankenversicherung
Univ.	Universities
USA	United States of America

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I. Introduction

In contrast to other developed economies, the German economy managed to recover rather swiftly and vigorously from the global economic downturn of 2008. Germany's remarkable economic resilience was not fortuitous. The two contributing factors to the new German miracle were: (i) that the economic crisis was not indigenous, but touched Germany through its exports and (ii) that labor market reforms and other drastic measures in the country mitigated unemployment.

In spite of the global recession, Germany remains Europe's largest economy that displays dynamism and a secure future. Currently, Germany's problems are related to labor supply shortages. Policymakers, scholars, trade unions, and businesses alike debate whether these labor shortages are due to genuine labor supply shortages, or to skill mismatches. Back in the late 1990s, however, Germany was confronted by high levels of social benefits expenditures and a grim future. The then Social Democrat Chancellor Schröder launched a comprehensive package of reforms, 'Agenda 2010.' The labor market reforms, also known as Hartz reforms, aimed at reducing unemployment and welfare benefits as well as integrating the immigrants who live in Germany.

Germany, like other developed western countries is facing growing demographic problems; mainly low fertility rates, low mortality rates, and increasing life expectancy. Naturally, an ageing population that retires early cannot be supported by its young; immigrants are often viewed as a solution to this problem. While many immigrants have been living in Germany for decades, Germany did not have an immigration policy until the new century. A brief description of Germany's economic immigrants is that the immigrants of the 1950s and 1960s were labor migrants earmarked to work in blue collar jobs (guestworkers) and fill the gaps of the labor market. While the guestworker policy worked well initially in terms of the labor market, it backfired when the needs of the labor market changed. With the gradual disappearance of manufacturing jobs the guestworkers found themselves on the wrong side of the labor market. That is, they became unemployed. On the other hand, the resolute policy of the Schröder government in the 2000s to bring in needed high skilled professional migrants did not work. In a new decade now, Germany needs to take a firm stance vis-à-vis economic migration and address the needs of its labor markets. Germany should re-orient its immigration policy toward a demand/labor driven immigration.

Equally important to understanding the economic aspects of the labor market and to identifying labor shortages, is understanding how policymakers assess current labor market needs, if they can anticipate future labor shortages and skills needed, what sources do they use, and what is their methodology. Economic migrants are behind the supply curve of the labor market. As such, Germany's immigration policy is indirectly linked with the labor market. The question is what role does Germany's immigration policy play in relation to labor market needs and mismatches? That is, is immigration policy with regards to admission regulations correctly reflecting domestic labor market needs and is immigration policy with regards to allowing immigrants to work accurately capturing the local labor markets' needs? Aspects related to policies, institutional dimensions, and the role of stakeholders is also important in this decision making.

The purpose of this report is to assess labor shortages in Germany and see how policymakers are informed about them and how they formulate policies to counter these shortages and especially how policymakers develop migrant admission policies. In this report, we also examine the actual outcomes of admission policies with respect to meeting labor shortages. We pay attention to the recent developments in terms of Germany's immigration policy that is linked to the labor market. In the next section we present and discuss the statutory and institutional framework of labor market regulations and, in particular, those linked to immigrants. We continue with an overview of the current German labor market situation that is related to the official 'measurement' of a labor supply shortage, while providing current figures on the labor market. In the third section we introduce the issue of labor migration and argue that labor migration is important in addressing future labor shortage needs. We end the report with a summary and concluding remarks, including policy recommendations.

II. Statutory and Institutional Framework

The idiosyncrasies of the immigration and naturalization laws in Germany as well as its labor market laws have shaped both the quantity (flows and stocks) and quality (skill levels) of migrants in Germany over the last fifty years (Constant et al., 2010a). The development of immigration to Germany[1] after the Second World War went through the following phases: (i) Labor migration mostly from East Germany to rebuild a dilapidated Germany. This movement lasted until the Berlin Wall was erected in 1961 that forbade East Germans from going to the West for work. (ii) Demand driven labor migration or guestworker recruitment, aiming to alleviate serious labor shortages after the block in Eastern Europe. This phase of labor migration ended in 1973 with the first global oil crisis. (iii) Family and kinship migration as well as refugees and ethnic Germans dominate the years from the labor migration ban until 1988, (iv) Migratory consequences of the politico-social breakup in Central and Eastern Europe, around 1989 until the early 2000s. The migration of ethnic Germans was a big part of this phase in the 1990s (v) Other special forms of temporary labor migration add to these phases especially in more recent times after the fall of the Soviet Block.

For any policy to work well and bring out the intended benefits, it has to be coordinated with other policies and laws already in place. Immigration policy starts with setting rules about admission standards, for example, how many immigrants the country wants to have and of what characteristics. Once migrants are in the host country, immigration policy should set the rules about whether the immigrants are allowed to work, qualify for welfare, and if their children can attend school, just to name a few important considerations.

The Schröder government of the early 2000s, took a pioneering stance to admit that Germany is an immigration country and to pass a new immigration bill. The following changes were brought into action: (i) A new citizenship act, in effect since 2000, which recognizes both the *jus sanguinis* or "law of blood" and the *jus soli* or "law of soil." (ii) The 'green card' regulation, intending to attract more highly skilled foreign professionals to Germany. The latter, in effect since 2000, was one of the most ambitious labor market policies. The plan was primarily

[1]Until 1989, when we refer to Germany we mean the Federal Republic of Germany or West Germany. After 1989, we refer to the unified Germany, both the former West and East.

dedicated to IT-specialists. However, the outcome of the program was less successful than expected. In fact, for the ceiling of 20,000 work and residence permits imposed for this program, only 17,931 work permit applications were approved and 17,111 (first time) permits were issued to foreign IT-specialists. However, failing to attract highly skilled migrants, as manifested by the strong decline in visa applications, made the governmentofficially abandon this scheme in 2005 (Constant et al., 2010b). The explanation for this,lies in the fact that the German government wasted a lot of valuable time debating whether they should allow high skilled immigrants to come in, and how to force them to leave after their contracts expire. Germany did not realize that at the same time, other countries were competing against them to attract high skilled immigrants from the global market. Countries like the USA, the UK, Australia, etc. were also on the lurk for skilled immigrants and they got them first.

In 2005, the Federal Government passed a far-reaching Immigration Act (*Zuwanderungsgesetz*),[2] which entered into force on January 1 of that year. In doing so, Germany's policymakers laid down the foundation for immigration policy and the social integration of migrants, and finally recognized that Germany is an immigration country. The Immigration Act identified three types of legal residence permits: (1) Permit of stay, (2) Settlement permit, and (3) Residence permit or *Aufenthaltserlaubnis.*[3] The latter is divided in different sections encompassing legislation for immigrant workers (see Table 1). These reforms were the response to high unemployment[4] and labor shortages for high skilled immigrants. For citizens of third countries who enter for the purpose of seeking employment in Germany, issuance of a residence permit for gainful employment requires the approval of the Federal Employment Agency (BAMF, 2009). Residence permits may be issued for up to three years for employment purposes and are subject to demand for work and scrutinized respectively to the unemployment rate in Germany. A resident title that permits employment may only be granted provided that employing migrants does not have a negative consequence on the labor market and there is no German worker able to fill the available positions. Residence permits can be prolonged without a new labor market test after employment of at least one year with the same employer. If a foreigner has successfully completed a top degree at a German university, a residence permit can be prolonged for up to one year in order to search for a job where migrant recruitment is permitted. This is the latest effort to keep highly skilled migrants in Germany. Highly skilled labor is eligible for an unrestricted residence permit after a minimum stay period of stay, but also immediately if the applicants can prove that they earn a salary of 85,000 Euros. Their family members who come to Germany with them or join them at a later date are entitled to take up gainful employment (for more details on the residence permits see Constant et al., 2010b).

Self-employed persons receive a residence permit if they invest at least 250,000 Euros and create a minimum of five jobs. Seasonal workers or contracted workers can be employed in Germany for four months annually to fill specific labor shortages in agriculture, hotels and restaurants. There is an exception to the 1973 ban that mostly pertains to the Central and Eastern Europeans. Nationals of the new EU Member States need a work permit to engage in these activities, and

[2] In Table A-1 in the Appendix, we show the timeline of the Immigration Law debate in Germany since 2000 to 2009.
[3] See Box A-1 in the Appendix for more details on the Section of Residence Permit for the economic activity
[4] This unemployment was due to mismatches of demand and supply.

non-EU nationals need a residence permit. Since May 1st, 2011, all new member states in the EU are allowed to work in Germany.

Table 1: Classification of Qualifications According to the Residence Act of 2005 for Immigrants in Germany

Section	Purpose
§18 Residence Act	Employed
§19 Residence Act	Highly qualified migrants
§20 Residence Act	Researchers
§21 Residence Act	Self-employed

Source: Parusel and Schneider, 2010

Chaloff and Lemaitre (2009), made an astute remark about the intention behind immigration policy reforms made recently by countries like Germany. The policy has been to 'restrict' immigration, while still leaving a margin for employers to hire high-skilled workers. It is worth adding here that although the Immigration Act upheld the ban on the recruitment of foreign labor, particularly for unskilled and low-skilled workers, Section 18 Subsection 1 of the Residence Act stipulated that the admission of foreign employees must be "geared to the requirements of the German economy, according due consideration to the situation on the labor market and the need to combat unemployment effectively." In fact, German policymakers have set high priority to job-matching within the framework of the German labor market policy, which involves finding the best fit between job seekers and job vacancies. To this end, the so-called *GesetzzurNeuausrichtung der arbeitsmarktpolitischenInstrumente* (Act on the Reorganization of Labor Market Policy Instruments) entered in force on January 1, 2009 in which the emphasis is, inter alia, on job placement (Bundesregierung, 2009). However, in practice, *"endeavours to expedite job matching and to find the best possible fit relate primarily to job seekers who are already residing in Germany. Within the framework of granting work permits to foreign job seekers and potential labour migrants, matching is only used occasionally. As Germany does not systematically pursue recruitment of foreign labour, it is basically up to the respective employer to examine whether a foreign applicant is suitable for a certain job. The employer himself must ensure that a foreign applicant meets the requirements of his business in terms of training, qualifications and language skills. However, a priority examination is carried out by the Federal Employment Agency before a work permit is granted to facilitate matching"* (Parusel and Schneider, 2010, p. 40). Additionally, the 1973 ban on recruitment of foreign labor, while still in effect, contains some exemptions for certain types of qualifications such as experts, certain employment groups and special sectors (Parusel and Schneider, 2010). Another exemption applies to workers from other EU member states.

From January 2005 until the end of 2008, there were several types of labor migration policies that were implemented in Germany. These were in addition to the different sections of the Residence Act[5] enumerated earlier. One policy stemmed from bilateral agreements and applied to seasonal workers. These agreements allowed companies in partner countries to send their workers to Germany for a limited period of time for the purpose of completing work in cooperation with a German company (BMI, 2010; Parusel and Schneider, 2010). Another type of

[5] The provisions in Section 21 of the Residence Act regarding self-employment required, as of January 1, 2005, that the minimum investment be €1,000,000 and the creation of at least ten jobs.

policy practice was addressing the need for skilled workers. It specifically targeted individuals from third countries who had obtained a university degree or another comparable qualification in the field of information and communication technology. These immigrants were granted a temporary residence permit with the approval of the Federal Employment Agency.

Furthermore, there were some provisions for family members. The new act allowed dependents, who came to Germany for the purposes of family reunification, to pursue an economic activity. The January 1, 2009 Labor Migration Control Act (*Arbeitsmigrationssteuerungsgesetz*) instituted several legal amendments. These changes referred to regulations that were intended to facilitate the admission of highly qualified migrants, students, and researchers. One of the changes also addressed the access to labor market for persons whose deportation has been temporarily suspended, the so-called 'tolerated stay' (Parusel and Schneider, 2010).

III. Measuring Labor Shortage in Germany

Most scholars and policymakers agree that labor shortages are not easy to measure. The basic labor market indicators for identification of labor shortages are rooted in economic theory, and ambiguities affect the practical application of these indicators (Zimmermann et al., 2007). It is therefore, typically advised not to use a single indicator, but a range of indicators or compound indicators.

Institutionally, the single authority responsible for tracking labor market trends and shortages in Germany is the Institute for Employment Research (*InstitutfürArbeitsmarkt- und Berufsforschung or IAB*) in Nuremberg. Since 1989, IAB has been conducting a 'survey on the aggregate national supply of labour.' The survey covers all companies and administrative agencies that have at least one employee who is liable for compulsory social-insurance payments. This survey has high regards among both businesses and politicians, who have insofar perceived it as the only[6] representative and reliable source to examine the causes and scope of skilled labor shortages and therefore counteracting it. The interviews are conducted by phone in the first, second, and third quarter of the year with companies and administrations to update developments in the demand for labor on an ongoing basis. Data from the IAB analysis are often used by policymakers, be it in their election speeches, their debates in congress, and efforts to change and update laws that will benefit the nation and their constituents. Nonetheless, in recent years, in addition to the IAB survey, employers' associations and economic think tanks have also been conducting their own analyses of the situation on the German labor market (Parusel and Schneider, 2010).

Data on job vacancies are crucially important in the estimation of labor market flexibility and overall health. There are currently two sets of data that furnish useful information on job vacancies; they are collected on an ongoing basis. The first dataset is the 'employment statistics' that the Federal Employment Agency (*BundesagenturfürArbeitor BA*) provides on a monthly basis in conjunction with local authorities. These employment statistics contain, inter alia, information on registered job vacancies. The second dataset is collected by IAB and contains

[6] In recent years, in addition to the IAB survey, employers' associations and economic think tanks have also been conducting their own analyses on the German labor market situation (Parusel and Schneider, 2010).

data on the aggregate national supply of labor. It is worth mentioning here that the IAB survey provides the basis for the annual and quarterly statistics on job vacancies published by Eurostat (Parusel and Schneider, 2010).

Labor shortages, or job vacancies, or excess demand are equivalent terms denoting open positions. They can be viewed as the opposite of unemployment or excess supply. Both excess demand and excess supply can exist at the same time. The reasons stem from the fact that the labor skills that employers want cannot be satisfied by the available supply and therefore positions are left vacant. The mismatch between the available jobs (labor demand) and the skills of the unemployed (labor supply) is called structural unemployment; accessing labor shortages have been well documented (OECD, 2003). In the case of Germany, in recent years serious efforts have been made by BA to explicitly address technical issues in labor shortage measurements. While the IAB data are good official statistics, they can only enlighten and elucidate the current situation of the labor market. There are no comparable official statistics or forecasts about the future of the labor demand. This is a shortcoming in Germany, making it difficult for policymakers or legislators to accurately manage labor migration (Parusel and Schneider, 2010). Occasionally, there are some case studies conducted by non-government agencies, but they suffer from a small sample size and local biases.

Economists often use the Beveridge curve[7] to illustrate the relationship between unemployment and job vacancies in a locality with no movement of labor. One known difficulty associated with the Beveridge curve is the cut off criteria. To deal with this issue economists have been using the following two approaches: (i) The average approach and (ii) The ad-hoc-specification approach.[8] Given the recent developments in data availability, at least for the German labor market, we will follow the average approach in this report.

In Figure 1 we illustrate the theoretical underpinnings of the Beveridge curve. On the horizontal axis we measure unemployment rates and on the vertical axis we measure vacancy rates. Accordingly, we identify the following 4 quadrants (moving counterclockwise):

(i) the area closest to the (0,0) co-ordinates that is characterized by low unemployment rates and low vacancy rates. This area would indicate that supply meets demand in the labor market.

(ii) the area to the right of area I exhibits a labor market with high unemployment rates and low vacancy rates. This is the case of excess supply or labor surplus.

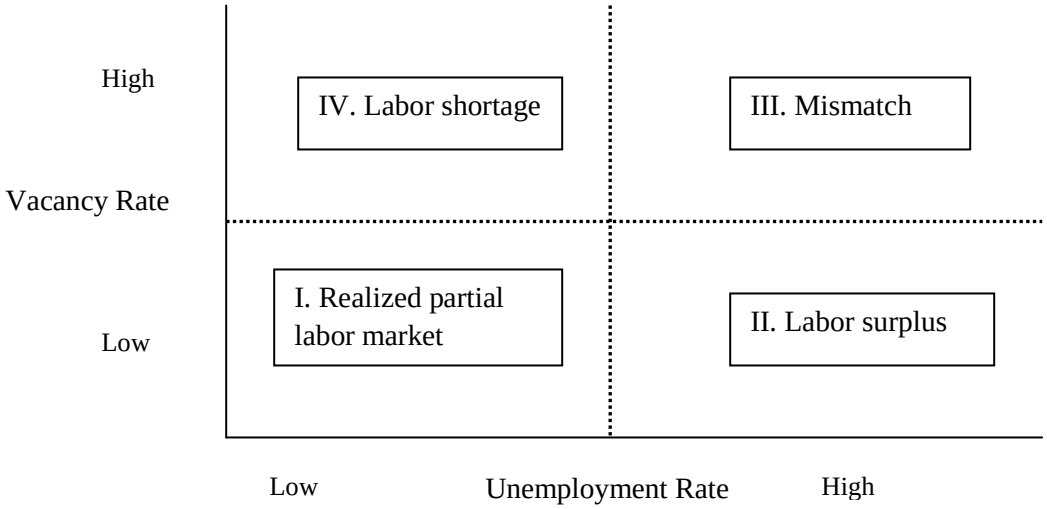
(iii) the area above area II shows high unemployment rates and high vacancy rates. Clearly, this is the case in which what employers want is not what workers can supply. This is the case of a labor market mismatch.

(iv) To the left of area III, we identify a labor market where the vacancy rates are much higher than the unemployment rates. This is the case of excess demand for labor or labor shortage.

[7] The Beveridge curve, named after the economist William H.Beveridge, is a graphical representation describing the theoretical relation between unemployment and unfilled job vacancies for a specific occupation in a situation of labor market equilibrium (OECD, 2003).

[8] For more on the pros and cons of this approach see the Institut der deutschenWirtschaft (2004).

Figure 1: Identifying Labor Shortages through the Beveridge Curve Idea



Source: Adapted from the Institut der deutschen Wirtschaft, Köln, 4/2004

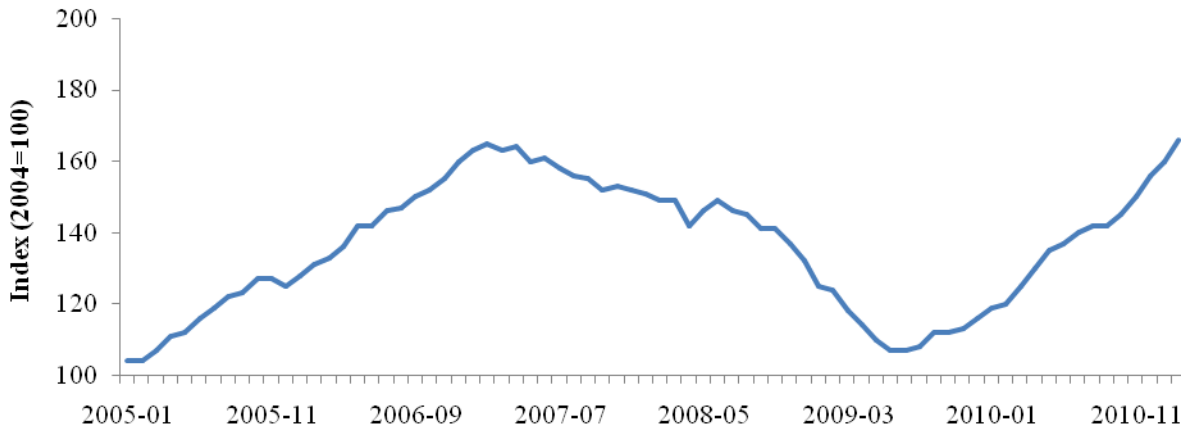
Previous studies have estimated labor shortages for specific occupations. Zimmermann et al. (2002) calculated Beveridge curves for the period 1980 to 1995 for forty occupational groups in Germany. They found indications of shortages in the early 1990s for engineers, stone masons and technicians, persisting until 1995 for health-related occupations. A more recent study on the labor market of engineers shows that in 2009, there was a shortage of about 34,200 engineers, and the economic cost in terms of missed value added was estimated to be about 3.4 billion Euros. Additionally, the shortage of engineers in Germany is projected to increase by 48,300 people per year from 2023 until 2027 (VDI/IW, 2010).

IV. Recent Developments in the German Labor Market

In this section we go deeper in the study of the labor markets examining the demand side and the supply side. We turn first to the demand side of the labor market. Demand for labor can be viewed as a classic early indicator of the vigor and well-being of the labor market. In a healthy economy employers are hiring workers, who in turn produce goods and services that the employers sell in the goods markets and earn profits. Because hiring workers increases the costs to employers, employers want to hire workers at low wages. The law of demand for labor is manifested in a downward sloping curve, indicating the inverse relationship between demand for labor and the price of labor, or nominal wages. Employers are willing to hire additional workers so long as the marginal revenue product of labor, that is, marginal product produced times its price per unit, exceeds nominal wages. In a cost benefit exercise, this will keep profits high. When the marginal revenue product of labor equals nominal wages the firm will reach maximum profits and stop hiring.

Here, we use the *BundesagenturfürArbeitor* BA Job Index (BA-X)[9] as a proxy of the demand for labor. Specifically, the BA-X shows the trend of labor demand on new positions through time. In Figure 2, we display the seasonally adjusted percentage change of demand for labor related to new jobs. The BA-X changes are monthly from January 2005 to January 2011. We use the year 2004 as the base; we equate it to 100. Figure 2 shows that there is a positive trend in the demand for labor to fill in new positions from January 2005 to about February of 2007. Labor demand starts decreasing thereafter possibly due to a saturation of the market for new positions. The downward trend of the BA-X reached a trough in early 2008, capturing the shock of the global economic and financial market crises in tandem with labor market measures in Germany. After the notable dip in April 2008, monthly changes in labor demand decline even further to reach a minimum in July 2009. This behavior is consistent with the global recession that officially commenced in December 2007 and ended in mid-2009. By the summer of 2009 labor demand for new positions picked up and has kept increasing since then. This trend demonstrates rising labor shortages. Put differently, it shows that there is new job creation that cannot be fulfilled by the local manpower. In February 2011, the BA-X rose to 166 percentage points indicating a strong demand for labor in comparison to the 120 percentage points for the same month in the previous year. Compared to the pre-financial crisis labor demand in February 2007, Figure 2 shows that labor demand in Germany for new positions has increased by 1 percent. This is evidence of a remarkable improvement of labor demand in Germany.

Figure 2: The BA Job Index (BA-X) - Demand for Labor



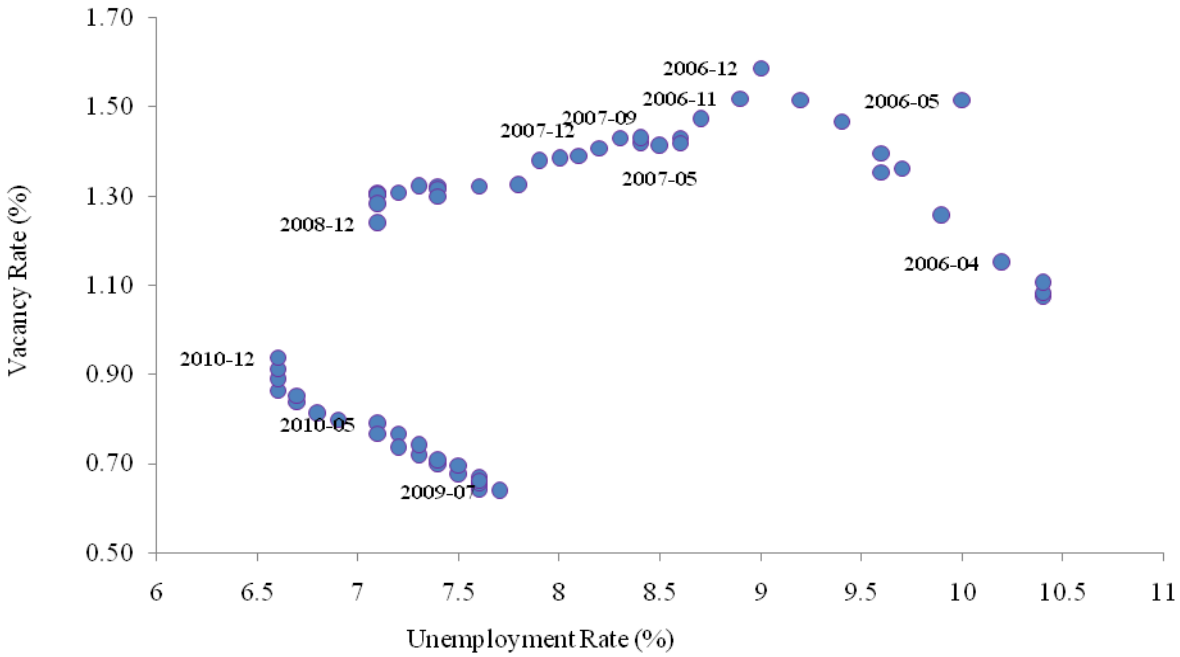
Source: Bundesagentur fuer Arbeit, 2011, the BA-X in February 2011

The improvement on the German labor market can be also asserted by examining the supply side. In this exercise, we employ the Beveridge curve to gain a better understanding of the relation between vacancies and unemployment in Germany. Figure 3 presents the Beveridge curve for the period from January 2006 to December 2010. Note that, given our data, we can identify two positions of the Beveridge curve. The first curve pertains to the year 2006. One can imagine this curve by connecting the dots in the year 2006. This curve shows an inverse

[9]BundesagenturfürArbeitis the Federal Agency of Labor.

relationship between vacancy rates and unemployment rates. Specifically, one can imagine a curve from the dot representing 2006-1 (with high unemployment and average vacancies) to the dot 2006-12, where unemployment is lower and vacancies are higher. We can identify the second Beveridge curve for the period starting shortly before the financial crisis of 2008. The shift of the first Beveridge curve in 2006 can be attributed to the institutional reforms, Hartz IV, in which the measuring of unemployment changed to conform to other EU countries' measures. This change caused a huge, numerical increase in the unemployment rates in Germany overnight, while the actual number of unemployed stayed the same.

Figure 3: Beveridge Curve Using Monthly Data: January 2006 to December 2010



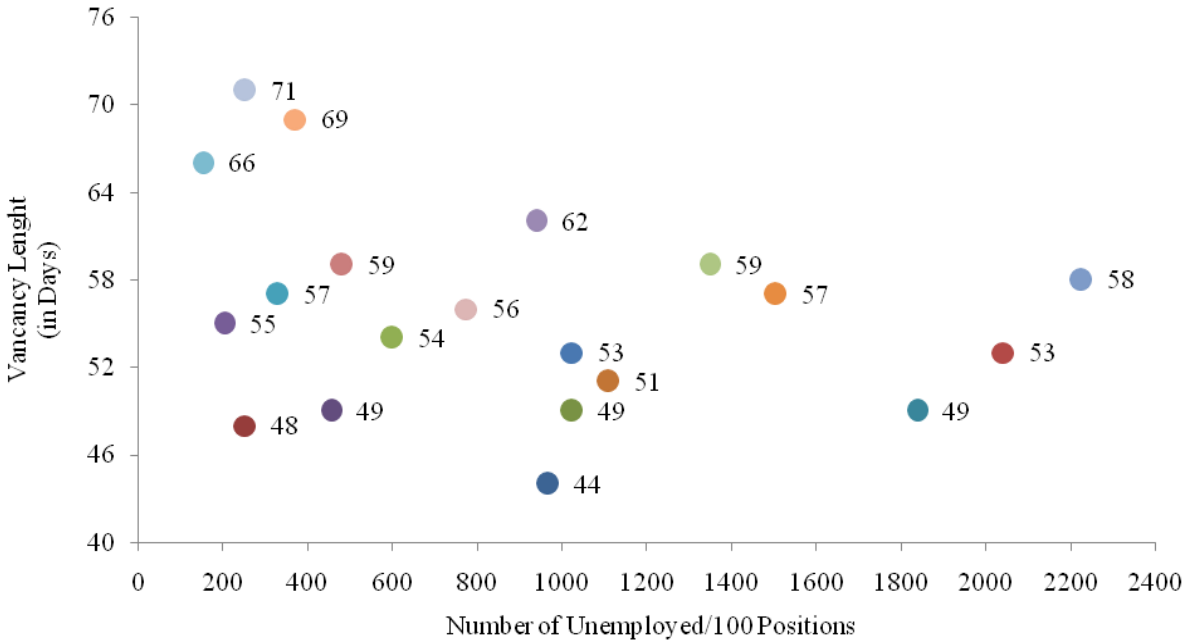
Source: Bundesagentur fuer Arbeit; Authors' calculation

Figure 3 shows that by 2007, both the vacancy rates and the unemployment rates decreased. This indicates efficiency in the search and matching processes of the job seekers with the available jobs. Once again, the displayed efficiency is attributed to the success of the institutional labor market reforms, as in the Hartz IV reforms (Bräuninger and Hinze, 2010).Moreover, with the Act on the Reorganization of the Labor Market Policy Instruments (*GesetzzurNeuausrichtung der arbeitsmarktpolitischenInstrumente*), which entered into force on January 1, 2009, job placement was strengthened and viewed as the backbone of a successful labor market policy. In doing so, the federal government intended to integrate and re-integrate job seekers into the labor market more swiftly than ever before (Parusel and Schneider, 2010).

However, by mid-2009, there was a substantial downward trend of the jobless rate. In spite of the falling unemployment rates, there was an upward trend in the vacancy rates. This alludes to a potential structural problem in the labor market. In this case, it is useful to look at the Beveridge curve for specific occupations. In this exercise, we will use the BA-X indicator and count the vacancies in days. According to BA (the Federal Agency of Labor), a longer length of a vacancy

signals a shortage in that specific occupational group. Figure 4 portrays several occupations that express two important characteristics: the number of unemployed per 100 positions and the number of days the position was available. The time period is from July to December 2010. The dots on the lower right side indicate jobs that are characterized by many unemployed and a short length of the vacancy. This is the case of a supply surplus or excess supply. These jobs are for dieticians and nutritionists, but also for security and printing. On the other side of the spectrum we find jobs that have fewer unemployed people and it takes a longer time to fulfill the positions. Jobs represented by the dots and numbers 71, 69 and 66 (that represent the number of days in filling vacancies), for example refer to health sciences, natural sciences, and electronic-related occupations respectively. In addition the number of unemployed per 100 jobs in these occupations is smaller than the average of all occupational groups combined. These jobs exhibit excess demand or a labor shortage. That is, employers have available vacant positions, unemployment is low, and it takes a long time to find the appropriate workers for the job. Note that the average number of unemployed per 100 jobs of all occupations was 775. Based on these statistics on the German labor market, one can conjecture that there is lack of labor supply. In Figure 4 we can also identify jobs where there is a clear mismatch; these are service related occupations.

Figure 4: Days of Job Vacancies by Type of Jobs on Average from July to December 2010

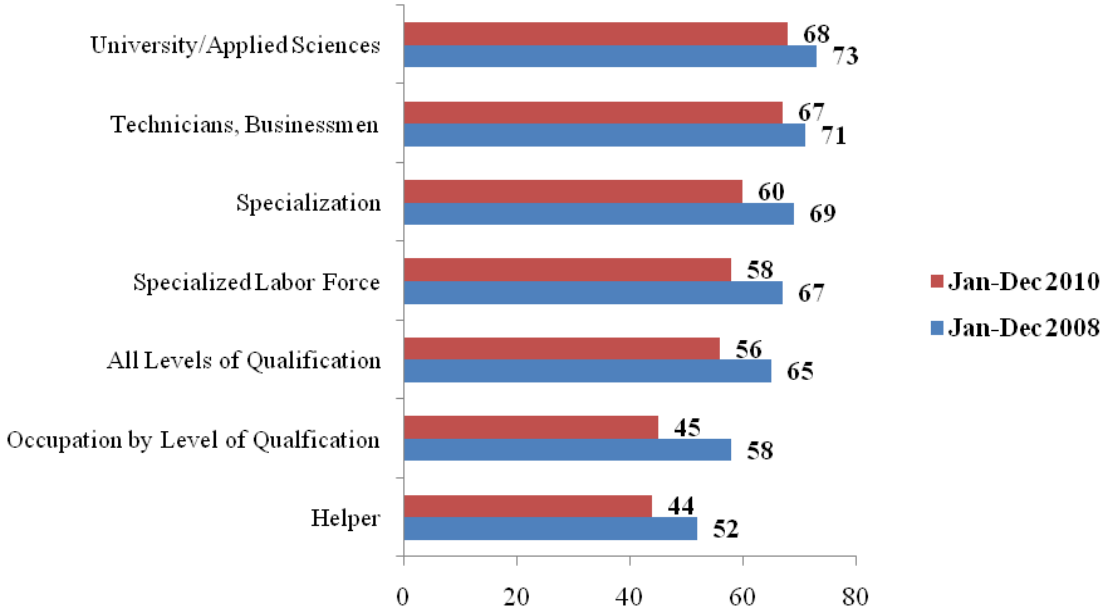


Source: Bundesagentur fuer Arbeit, 2010; Authors' presentation

To obtain a better understanding of the demand and supply mismatch, we now turn to the qualification levels. In Figure 5, we use official statistics from the IAB to display vacancy spells by qualification in two different time periods. This Figure practically shows labor shortages. There are two interesting points to discuss. First, in 2010, it took fewer days (56) to fill a vacant position for all levels of qualification compared to 2008 (65). One of the reasons is that, with the economy recovering, workers were needed and thus, vacancies were filled in general faster as

long as workers were available. In addition, the German authorities and the labor agency followed a conscious intervention of the labor market. More specifically, to mitigate the effects of the global economic crisis, the German government had to act fast. It is a known phenomenon that there is a time hysteresis from the output market to the labor market. One labor market scheme applied was the "kutzarbeit" or short-term-work scheme, which was combined with a tougher stance vis-à-vis the registered as unemployed, That is, they were encouraged to accept job-offers even if the job offer was not their dream job. Second, and more importantly, over these two time periods (2008 and 2010), it took longer to fill a vacant position when the job required a high level of qualification such as a university degree or a university of applied sciences degree. Figure 5 shows that, on average, it took 68 days to fill a university job. In contrast, it took only 44 days to fill a helper job. However, it should be noted that a university position is very different than a helper position; it requires a lot of procedures and red tape. These raw statistics do not consider other factors.

Figure 5: Vacancy Lenght by Level of Qualfication: in 2008 and 2010



Source: Bundesagentur für Arbeit; Analyse der gemeldeten Arbeitsstellen, Dezember 2010; Authors' presentation

Much like unemployment indicates a waste of human capital, job vacancies indicate a waste in productivity. Firms want to avoid labor shortages because this means that the firm is not producing enough to its full capacity and it loses in competiveness. Unfilled job openings are more severely affecting a labor intensive firm, but also it has detrimental effects on the innovative, highly skilled enterprises. A study on 204 German firms shows that "employer signaling" is a very effective method in attracting employees and filling job vacancies (Backes-Gellner and Tuor, 2008). This study finds that if a firm has a works council, an apprenticeship training program, and a high quality incumbent workforce then this firm can enjoy successful recruitment. Governments also want to minimize labor shortages because they are not desirable. At the aggregate level, it means that a country loses its competitiveness. In Germany, labor

shortages became a central issue of the government's cabinet meeting in Meseberg in August 2007. According to the cabinet meeting:

> "[t]*he Federal Government will make every effort to utilize Germany's own pool of skilled labour. Additional demand in the area of highly skilled workers could emerge in both the short and long term. In order to create a reliable basis for decisions on immigration, the relevant departments will swiftly draft a proposal for a monitoring system for ascertaining Germany's skilled labour requirements. We want to provide for managing the immigration of highly qualified skilled workers in a way that reflects the needs of the labour market and strengthens our country's position when competing for the best workers. German schools abroad will play an important role in this connection. For this purpose, the Federal Government will develop a blueprint for immigration that takes into account our country's interests in the coming decade. Quantitative and qualitative*[10] *instruments and the experience that other countries have gathered in connection with managing immigration to meet the needs of their domestic labour markets are to be incorporated when drafting the blueprint."(BMAS, 2008, p. 2).*

In a nutshell, the cabinet decided to reinforce its efforts (i) to activate the domestic labor force potential through strengthened training and qualification measures; and (ii) to take additional measures for eliminating shortages in certain sectors, which were viewed as difficult to cover domestically. The latter was to be implemented by a careful opening of the labor market to labor immigration (Chaloff and Lemaitre, 2009).

The January 1, 2009 ordinance encompasses the following important aspects:

- Opening of the labor market for scholars from the new EU-member states
- Extension of the free mobility exception for new EU-member states (EU-8 and EU-2)
- Reduction of the yearly minimum income requirement for high skilled workers[11]

On May 1, 2011, Germany lifted the last mobility restrictions concerning the new EU member states. It is still too early to judge the efficacy of these additional measures. With the availability of new data next year, we will be able to re-evaluate the strength of the labor market as it pertains to highly skilled personnel, entrepreneurs and other EU immigrants.

V. Importance of Migration in Addressing Future Labor Market Needs

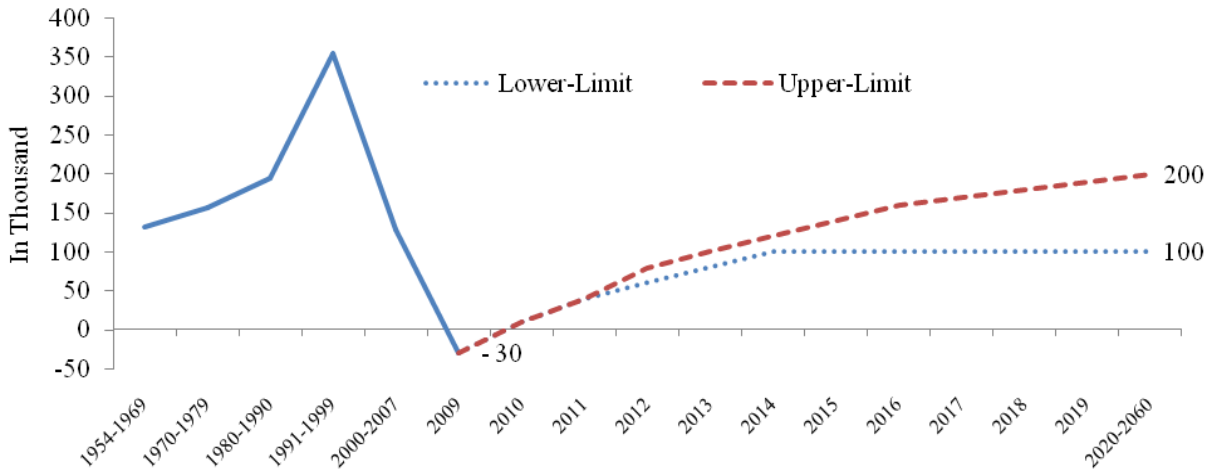
a. Demographic Challenges

[10] Quantitative methods indicate empirical estimations of large datasets using econometric techniques. Qualitative methods on the other hand, examine particular cases and they go in depth to answer questions like why and how. Qualitative conclusions are propositions that can be tested further using larger datasets. Both methods can be used together and complement each other.

[11] The requirement fell from €86,400 to €63,600 per year.

Germany only admitted being an immigration country in the early 2000. Nonetheless, Figure 6, clearly shows that from 1954 to 1979 net migration to Germany rose sharply, and reached a peak between 1980 and 1990. Net migration follows a downward trend, since then, reaching a negative balance of 30,000 in 2009. This means that emigration from Germany was higher than the inflow of immigrants to Germany. This trend is partially due to the recent phenomenon of a brain drain in Germany. Technically, brain drain denotes a country depleted from its human capital without any replenishment. In this case, skilled and educated native Germans migrate to other countries. In 2009, 154,988 native Germans left Germany for other developed nations. Their preferred destinations were Switzerland (15.9%), the United States (8.7%), Poland (7.8%), Austria (7.6%), and the United Kingdom (5.9%) (BMI, 2011). In 2009, the Federal Statistical Office (*StatistischesBundesamt*) published a forecast of the German population by the year 2060 under different assumptions (see Table A-2 in the Appendix). Both assumptions regarding the upper- and lower-limit indicate the interval in which the migration trend in Germany will navigate until 2060. The forecast shows that Germany's net migration will be less than that of the last half of the twentieth century.

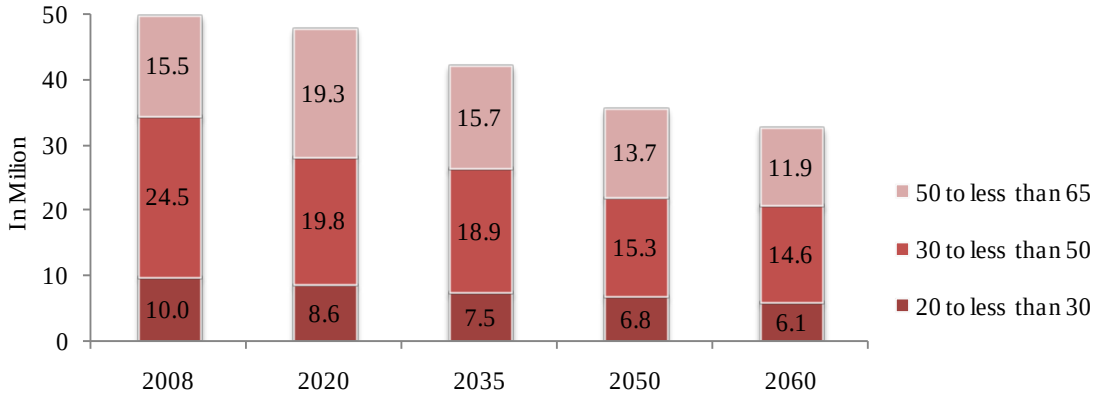
Figure 6: The Trajectory of Net Migration within the German Borders: 2060 Projections From the 2009 Assumption of the 12th Coordinated Population Forecast



Source: Statistisches Bundesamt, 2009; Authors' presentation

Another related challenge that Germany will be facing soon is its shrinking labor force. In 2008, the total labor force was around 50 million. As portrayed in Figure 7, by 2020, it is estimated to be 47.6 million, and 32.6 million by 2060. According to the age structure, in 2008, those between 30 and 50 years of age are the biggest group of the German labor force. The younger people, the 20 to 30 year olds made up about 10 million (or 20%). The 2060 projections, however, show that the German labor market will be composed of only about 6.1 million people between 20 and 30. Middle-aged individuals will be about 15% of the labor market and older individuals about 12%.

Figure 7: Population in Labor Force by Age
Variant: Lower-Limit of 'Middle' Population



Source: Statistisches Bundesamt, 2009; Authors' presentation

Such a development will put a tremendous pressure on the social security system of Germany. In Table 2 we present the old-age dependency ratio in 2008 and 2060. Even with the retirement age being increased to 67, the old-age dependency ratio is projected to double by 2060. The old-age dependency ratio in 2008 shows that out of 100 individuals in the labor force between the ages of 20 and 67, there were almost 30 who were 67 years old or older. By 2060, under the upper-limit assumption of net migration of 200 thousand people per year, the numbers show that among 100 individuals in the labor force, 56 of them will be over 67; under the lower-limit assumption of 100 thousand net migrants per year, it will be 59 people over the age of 67 out of 100.

Table 2: Old-Age Dependency Ratio in 2008 and 2060

Years		Old-Age Dependency Ratio by Pension Eligibility Age		
		60 Years	65 Years	67 Years
2008		46	34	29
2060	"Middle" Population, Upper-Limit	92	67	59
	"Middle" Population, Lower-Limit	87	63	56
	"Relatively Young" Population	82	60	53
	"Relatively Old" Population	105	77	68

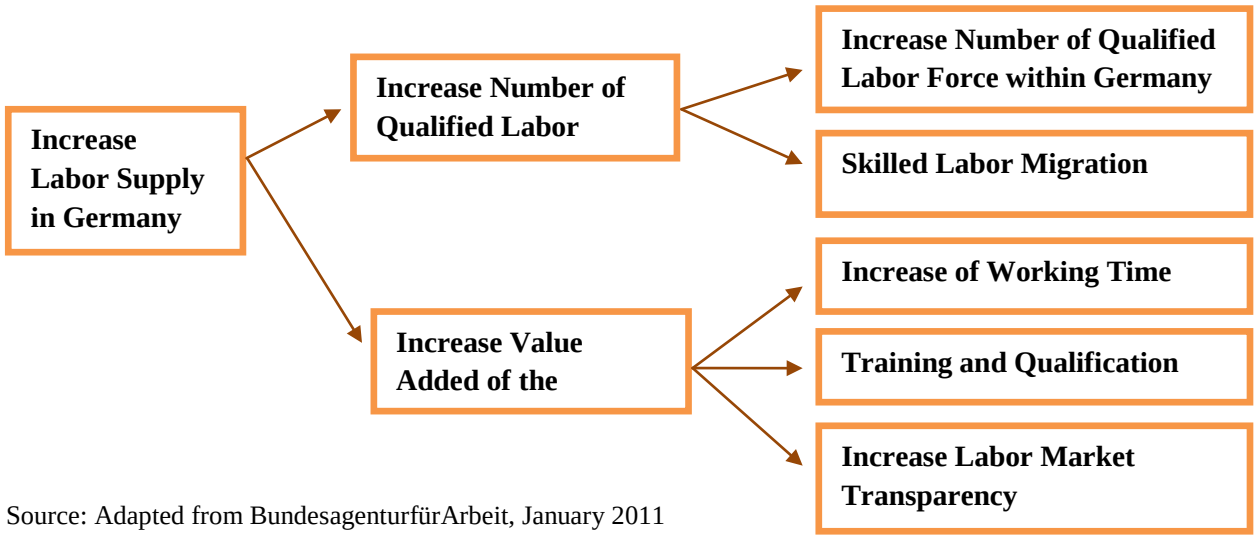
Source: Statistisches Bundesamt, 2009

b. Stance of Policymakers and Stakeholders on Germany's Labor Markets Needs

In face of the ageing population associated with its labor market implications, experts do agree that in the medium and in the longer term migration could and would play a crucial in addressing these demographic challenges (Sachverständigrat, 2011). Apropos future labor market needs, some research organizations and associations sometimes make projections, however politicians do not use them to determine the scale or to manage future migration movements. The political actors have been mainly concerned with the reliability of these projections given the nature of numerous factors influencing the demand of labor; such as cyclical trends, activation of the national supply of labor, demographic trends and even developments in education and training policy. The Bundesrat[12] phrased this very clearly in a decision taken in 2006, saying that the view that immigration of third-country nationals was of fundamental importance if Germany was to be in a position to meet the current and future demand for labor and hence to be able to safeguard sustainability and economic growth was pure speculation, as cited in Parusel and Schneider (2010).

As shown in Figure 8, the BundesagenturfürArbeit (2011) elaborates ways in which the country could potentially increase its labor supply. There are two ways to basically increase the labor supply. First, by increasing the number of qualified labor force and second by increasing the value added of the workforce. The first way can be subdivided into parts: (i) increase the number of qualified labor domestically in Germany and (ii) through skilled labor migration.

Figure 8: Ways of Increasing Labor Supply



Source: Adapted from BundesagenturfürArbeit, January 2011

[12] *"Die Auffassung der Kommission, die Zuwanderung weiterer drittstaatsangehoeriger Auslaender werde von elementarer Bedeutung fuer die Deckung des gegenwaertigen und kuenftigen Arbeitskraeftebedarfs sein und daher wirtschaftliche Nachhaltigkeit und Wirtschaftswachstum gewahrleisten, ist spekulativ" (Bundesrat, 2006, p. 2)* http://www.bundesrat.de/nn_1934482/SharedDocs/Drucksachen/2006/0001-0100/5-06_28B_29,templateId=raw,property=publicationFile.pdf/5-06(B).pdf.

Nonetheless, as mentioned in a recent report by the BundesagenturfürArbeit (2011), increasing the German labor force requires the conjunction of efforts of all actors. Table 3 shows the level of involvement of each actor. It is ranked from a leading role to a participatory role in the process. As mentioned earlier, the priority of the German government has been so far to activate domestic labor supply reserve. However, the *Bund* (Federal government) should be playing a leading role only on the skilled labor migration's issue. Furthermore, most of the domestic issues such as female labor force participation, working time for part-time jobs, and the training and qualification of workers are assigned de facto to other actors such as businesses. Lastly, universities should be taking the leadership in addressing the college drop-outs issue.

Table 3: Role of Different Actors to Increase Labor Supply in Germany

	Bund	Länder	Muni-cipalities	BA	Labor Unions	Busi-nesses	Others
School Dropouts							
Trainee Dropouts							IHK
College Dropouts							Univ.
People over 55							
— Labor Force Participation							
— Working Life							DRV Bund
Female							
— Labor Force Participation							
— Working Time for Part-time Jobs							GKV, PKV
Labor Skilled Migration							
Working Time for Full-time Jobs							
Training and Qualification							IHK
Labor Market Transparency							
Taxes and Levies							

Source: Adapted from Bundesagentur für Arbeit; *Perspektive 2025: Fachkräfte für Deutschland*, January 2011

Note: Red shaded area: Institution or Organization plays a Leading Role;
Orange shaded area: Institution or Organization plays an Important Role;
Light Blue shaded area: Institution or Organization plays a Participatory Role

VI. Evaluation of Labor Market Outcomes Related to Immigration Policies and Laws

Evaluating policies and programs in general is not a trivial task. In the case of immigration, the modus operandi among scholars has been to compare the labor market outcomes of immigrants to those of their native counterparts, with respect to earnings, labor force participation, and transition rates from unemployment to employment. The litany of empirical research on immigrants' labor markets outcomes in the case of Germany is wide. Most of these studies have focused on assimilation, integration, ethnicity (see Constant et al., 2010c, Constant et al., 2007, Zimmermann et al., 2007, Constant, 1998), entrepreneurship (Constant, 2009), reservation wages of the 1st and 2nd generation of immigrants in Germany (Constant et al., 2010), and preferences and attitudes of the unemployed (Constant et al., 2010).

However, to our knowledge, there is no empirical work on the effectiveness of the recent Immigration Act enacted in 2005 in terms labor market outcomes of these 'new' gainful employed immigrant workers in Germany. Nonetheless, in the following, we will first present some overall labor market outcomes of the immigrants living in Germany compared to native Germans. We will also present some figures on the recent immigrants in accordance of the Residence Act of 2005. We conjecture that for a deep scientific empirical work, it might be too early to gain insights of the effectiveness of these laws. However, some descriptive data will help us to have a better understanding the overall trend in terms of the impact of these immigration laws.

a. Assessment of Labor Outcomes of Natives versus Immigrants in Germany

Table 4 presents the average characteristics of employed natives and foreign-born, who were on obligatory social security schemes in February 2011. Both among native Germans and among immigrants we find that the majority of the employed are men. Among Germans, the percentages of men and women workers are rather close with 54% of men and 47% of women being employed. Among immigrants, however, we find a big discrepancy in employment rates. While 61% of immigrant men work, only 39% of immigrant women work. The age distribution is somewhat similar between native Germans and immigrants. The majority of the employed Germans (61%) are between 25 and 50 years old; so are the majority of immigrants (70%). Moreover, looking at the type of employment, we find similarities between natives and immigrants. On average, the vast majority of these workers work full-time (around 80% for both groups).

Table 4: Characteristics of the Employed under the Obligatory Social Insurance Scheme in February 2011: Natives Versus Foreign-born

	Gender		Age[1]			Qualification				Type of Employment	
	Male	Female	Less than 25	B/w 25 and 50	B/w 50 and 65	In Train.	W. Prof. Qualif.	W/out Prof. Qualif.	None Above	Full-Time	Part-Time
Natives	53.5	46.5	11.5	61.1	26.1	5.4	70.3	8.7	15.6	80.6	19.4
Foreign-born	61.4	38.6	10.4	70.3	18.7	4.1	37.9	24.9	33.1	79.8	20.1

Source: Bundesagentur für Arbeit; Analyse des Arbeitsmarkets für Auslaender, February 2011; Authors' presentaion
Notes: [1] Minimum Age is 15

It is when we examine the qualification required for the job, where things really diverge between Germans and immigrants. In Table 4 we consider four types of qualifications: (i) in training, (ii) with professional qualification, (iii) without professional qualification, and (iv) none of the above. The type "with professional qualifications" clearly contains the largest percent of employees, both among Germans and immigrants. However, while about 70% of the employed Germans have a professional qualification, it is only 38% of the employed immigrants who have a professional background. Because these are only raw data we cannot say affirmatively that there is under-utilization of the skilled migrant labor force. More data on educational levels and employment by qualification are needed to confirm the under-utilization of the migrant labor force. A case for under-utilization of human capital would be the non-recognition of foreign

degrees[13] that the immigrants have from their home countries. Interestingly, in the "without professional qualifications" category we find one fourth of immigrants, but only 9% of Germans. The last big category of the employed refers to those not included in the previous categories. Again, we find many more immigrants than Germans in this category.

The unemployment figures also underline some striking facts (see Table 5). Interestingly, for both natives and immigrants, women are less likely to be unemployed compared to their male counterparts. For instance, among native women, 44% are unemployed while in the immigrant group 47% are unemployed. In the corresponding male group, the unemployment rate is much higher; 56% of native men and 53% of immigrant men are unemployed. Moreover, those who are mostly afflicted by unemployment are the 25 to 50 years old. Within this age group, immigrants form a much higher percentage (72%) than Germans (58%). Among older individuals we find that more Germans are unemployed. Similarly, among the younger group more Germans are unemployed. Table 5 reveals another interesting point. Among the unemployed, it is the immigrants who are in training with a high preponderance (77%). Lastly, when it comes to the length of the unemployment spell, Germans and immigrants are not discernibly different. Both groups are unemployed for about 32 months.

Table 5: Characteristics of the Unemployed in January 2011: Natives Versus Foreign-born

	Gender		Age[1]			Qualification	Length of Unemployment
	Male	Female	Less than 25	Between 25 and 50	Between 50 and 65	In Training	Longer than 12 Months
Natives	55.8	44.2	9.6	58.2	32.2	35.6	31.8
Foreign-born	53.3	46.7	6.8	71.6	21.5	76.9	32.7

Source: Bundesagentur für Arbeit; Analyse des Arbeitsmarkets für Auslaender, February 2011, p. 32; Authors' presentation
Notes: [1] Minimum Age is 15

Table 6 shows that even after the reform of 2005 and the serious government's efforts to recruit more highly skilled migrants, most of the immigrants in Germany are employed in low skilled jobs.[14] In 2006, 8.4% of immigrants were employed in low skilled jobs. Among them, immigrants from third countries were more likely to be in these low skilled positions; in 2006 it was 12.3% and in 2009 it was 12.1%. Immigrants from the EU-14 and surprisingly those from third countries were more employed by far in highly skilled jobs compared to immigrants from the recent EU-10 and EU-2 member states (more details onemployed persons by nationality and level of qualification, seeTable A-4in the Appendix).

[13] The German federal government has recently initiated a bill to a better recognition of foreign degrees in Germany. For more details, see http://www.bmbf.de/de/15644.php
[14] The classification is done according the ISCO. For more details see

Table 6: Employed Individuals by Level of Professional Qualification in 2006 and 2009

Main Category	Number Employed[1] In 1000		Nationals of EU-14		Nationals of EU-10		Nationals of EU-2[2]		Third Country Nationals	
	Total Numbers		**In Percent**		**In Percent**		**In Percent**		**In Percent**	
	2006	**2009**	**2006**	**2009**	**2006**	**2009**	**2006**	**2009**	**2006**	**2009**
Highly Skilled (ISCO 1-3)	15,353	16,324	2.4	2.5	0.5	0.5	0.1	0.2	2.6	2.8
Skilled (ISCO 4-8)	18,049	18,334	2.9	2.7	0.6	0.9	0.2	0.2	5.5	5.7
Low Skilled (ISCO 9)	3,095	3,211	3.7	3.7	/	/	/	/	12.3	12.1
Other[3]	525	496	2.5	2.4	/	/	/	/	7.2	7.9
Total	**37,023**	**38,365**	**2.8**	**2.7**	**0.6**	**0.8**	**0.2**	**0.2**	**4.9**	**5.0**

Source: Micro-census 2006, 2009; Parusel and Schneider, 2010; Authors' presentation
Notes: [1] Excluding soldiers; [2] Bulgaria and Romania; 3 Not Reported, and Soldiers

b. Assessment of the Recent Immigration Acts and Labor Outcomes

In Table 7 we examine recent immigrants from third countries, who have been employed in Germany according to the Residence Act or AufenthG. It is apparent that there is a substantial increase in the category "Researchers." While in 2008, there were 64 employed researchers, a year later in 2009, there were more than double (142). This is an increase of 122%. In the meantime between 2007 and 2009, those employed according to Section 18 of the Residence Act decreased by almost 13%. The self-employed category also increased by 15%. This might be due to the reduction of the capital requirement for investing in Germany for self-employed. The employment of highly qualified migrants also rose by 12%.

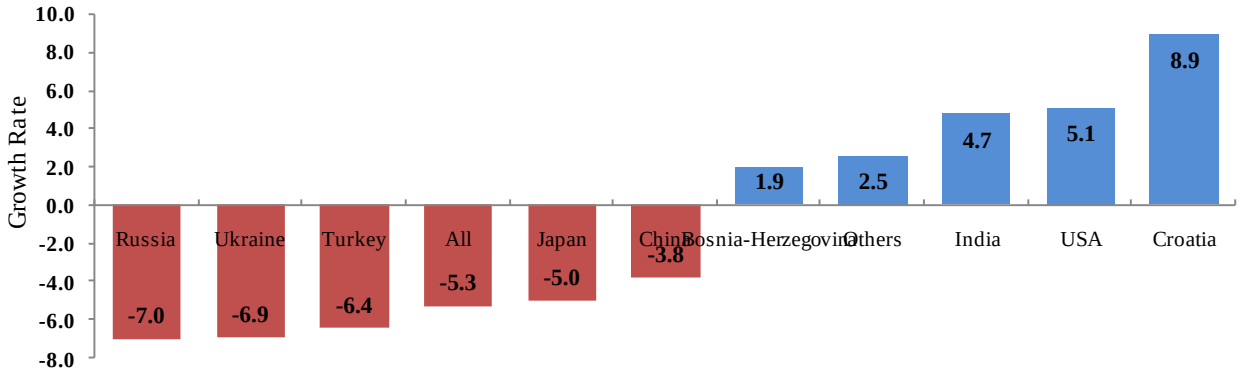
Table 7: Number of Gainfully Employed Immigrants from Third Countries by Qualification: 2007-2009

Qualifications According to the Residence Act of 2005	Years			Percentage Change 2007 -2009
	2007	2008	2009	
Highly Qualified Migrants (§19 of the Residence Act)	151	157	169	11.9
Employees (§18 of the Residence Act)	28,761	29,141	25,053	-12.9
Researchers (§20 of the Residence Act)	/	64	142	121.9*
Self-employed (§21 of the Residence Act)	891	1,239	1,024	14.9

Source: Parusel and Schneider, 2010; Authors' calculation
Note: * Refers to the change from 2008 to 2009

As shown in Figure 9 since 2006, there is a decline in the overall number of immigrants being granted a work permit according to §18 Residence Act. The average growth rate of all countries combined between 2006 and 2009 is negative 5.3% per year. Among, this decline, Russia experienced the highest rate of decline (-7.0%), followed by Ukraine, Turkey, Japan and China, with -6.9, -6.4, -5.0 and -3.8%, respectively. On the other hand, there is a positive trend for migrants from Bosnia-Herzegovina, India, the USA and Croatia. The annual growth rate between 2006 and 2009 for migrants from Croatia is almost 9%, followed by the USA (5.1%), India (4.7%), other nationalities (2.5%) and Bosnia-Herzegovina (1.9%).

Figure 9: Average Growth Rate of Gainfull Immigrants Workers Entries According to 18 AufenthG,



Source: BMI, 2011, *Migrationsbericht 2009*; Authors' calculation

In Table 8, we present the sub-division of these gainfully employed immigrants from third countries according to the different section of §18 AufenthG. In 2009, out of the 25,053 immigrant workers who were granted a residence permit in Germany according to §18 AufenthG, almost 3,000 were from India, 2,800 from the US, and 2,204 from China. It is noteworthy adding here that among these 25,053 workers, over 55% were granted a permit in accordance with §18 Abs. 4 S 1. AufenthG. It stipulates that*"The admission of foreign employees shall be geared to the requirements of the German economy, according due consideration to the situation on the labour market and the need to combat unemployment effectively. International treaties shall remain unaffected."*The high percentage of migrants' workers falling in the category §18 Abs. 4 S 1.AufenthG implies that there is a careful selection from the German employers and authorities, despite the overall declining rate of migrants workers falling in the category §18 AufenthG between 2006 and 2009.

Table 8: Number of Gainfully Employed Immigrants from Top Third Countries According to §18 AufenthG, 2009

	Employment (According to §18 AufenthG)	No Qualified Employment (§18 Abs. 3 AufenthG)	Qualified Employment (§18 Abs. 4 S 1. AufenthG)	Qualified Employment (§18 Abs. 4 S 2. AufenthG)	General Employment (§18 AufenthG)
	Total	As Share of Total in %	As Share of Total in %	As Share of Total in %	As Share of Total in %
India	2,987	3.4	84.2	3.9	8.5
The USA	2,800	27.4	64.6	2.4	5.6
China	2,204	12.7	78.1	5.6	3.6
Croatia	1,849	26.8	52.9	2.8	17.5
Bosnia-Herzegovina	1,633	36.7	52.4	1.9	8.9
Russia	1,460	58.5	32.9	3.1	5.5
Japan	1,258	6.4	86.7	1.7	5.2
Ukraine	1,191	68.8	25.9	1.7	3.5
Turkey	1,029	15.3	76.6	3.6	4.6

Table 8: Number of Gainfully Employed Immigrants from Top Third Countries According to §18 AufenthG, 2009

	Employment (According to §18 AufenthG)	No Qualified Employment (§18 Abs. 3 AufenthG)	Qualified Employment (§18 Abs. 4 S 1. AufenthG)	Qualified Employment (§18 Abs. 4 S 2. AufenthG)	General Employment (§18 AufenthG)
	Total	As Share of Total in %	As Share of Total in %	As Share of Total in %	As Share of Total in %
Serbia	834	56.6	40.0	2.2	1.2
Brazil	614	46.6	45.4	4.1	3.9
Canada	496	36.3	52.4	4.2	7.1
Korea, Rep. of	440	7.7	82.5	5.2	4.5
Other Nationalities	6,258	52.4	35.5	3.4	8.8
Total	**25,053**	**33.5**	**55.9**	**3.2**	**7.3**

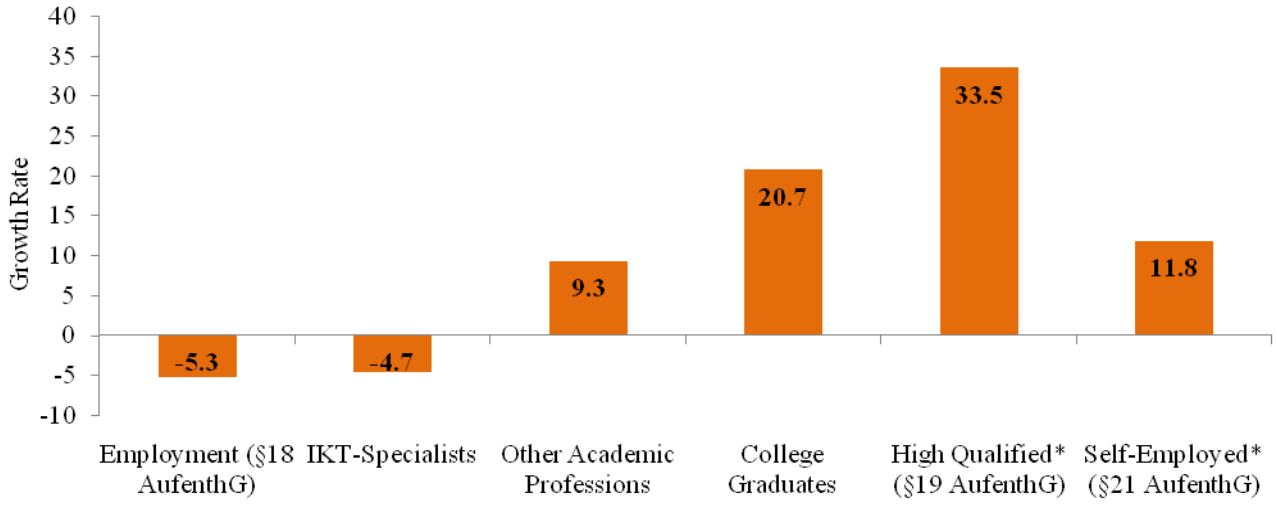
Source: BMI 2011; Authors' presentation

Additionally, as already mentioned, the German policymakers have not only been interested in attracting foreign workers from abroad, but also in using the potential workforce that lives within Germany; for example, using the skills and talents of foreign-born students who graduate from German universities. In Figure 10, we present the yearly growth rate for selected professions as well as status between 2006 and 2009.[15] Overall, there is a negative trend in employment in accordance with §18 AufenthG as well as well in IT-specialists. The growth rate for employment according §18 AufenthG is about negative 5.3%, and for IT-specialists is about negative 4.7%. However there is some positive annual growth rate in other sectors. The highest growth rate has been in the category of the highly qualified according to §19 AufenthG. The annual growth in this group between 2005/2006 and 2009 was 34%. It is followed by the category of foreign college graduates from German universities, the self-employed (§21 AufenthG), and other academic professions. The annual growth rate was 20.7, 11.8, and 9.3%, respectively.

Recent data on gainful employment show that Germany has not really been successful in attracting foreign skilled labor force to its labor market. Some of the underlying reasons might be related to the parliamentarian procedure from the law drafting to the enactment of the law.[16] However, it is worth mentioning that there are positive signs in some specific sectors, such as attracting foreign college students graduating from German universities. Given the rapidly ageing population and decreasing fertility rate, scholars and pundits have called German policymakers to adopt a new system to attract more highly skilled labor into the country. In this spirit, the idea of a points system à la Canada has been suggested (Zimmermann, 2011; Hinte and Zimmermann, 2010).

[15] Details on each profession and the number of migrants with their nationalities being granted the work permit according the Residence Act is exposed in Table A-5 to Table A-10 in the Appendix.
[16] See Figure A-1 in the Appendix for the procedure of the federal laws in Germany

Figure 10: Average Growth Rate of Gainfully Employed Immigrants by Professions and Status, 2006-2009



Source: BMI, 2011; Authors' calculation
Note: * Data for High Qualified (§19 AufenthG) and self-employed (§21 AufenthG) start in 2005

VII. Conclusions and Recommendations

Until the early 2000s, the German government has not openly and officially recognized that the country was a de facto immigration country. Agenda 2010 opened up room for a new immigration debate in the country. In 2005, a new Immigration Act entered into force and since then, Germany's immigration policy has been gradually oriented toward labor migration of high skilled foreign workers.

Up to now, there is no clear methodology in Germany determining whether there is skilled labor shortage or not. The only method used to indicate that there is skill shortage in the labor market is based on the survey conducted by the IAB. Supplemental private surveys by organizational groups such as the Association of German Engineers also provide some data. The best indicator of labor shortages is the length of vacancies. According to the Labor Agency (BA), the longer the time to fill a vacancy, the more likely it is that the sector experience labor shortage.

However, with the demographic challenges facing Germany, scholars as well as policymakers have been debating about the channels through which Germany could fill its growing labor supply deficit. Despite this methodological limitation there is a sort of national consensus given the acuity of the demographic pressure that the country will face in the next 20 or 50 years. In order to partially anticipate these demographic challenges, national strategies to this end have been manifold. First, the focus has been to activate labor reserves within Germany, for example, increasing the labor participation of qualified women, training and qualifying the youth, and re-activating the skills of elderly skilled workers. There are some positive signs in that direction. For instance, over the last decade, women have shown exemplary achievements in education. Not only they outnumber men in schools but they also perform better scholarly.

However, labor migration has also been one important component of this national effort to compensate the skill shortages. Based on recent data of skilled labor migration to Germany between 2006 and 2009, one can say that overall the annual growth rate of gainful employment in accordance with the Residence Act (§18 AufenthG) has been falling. Nonetheless, Germany has been able to attract foreign students who enroll in and graduate from German universities. In addition, over the same time period, the growth rate of self-employed foreigners who move to Germany to open a new business follows an upward trend.

Inefficiencies in the current system coupled with an ever increasing demand for high skilled and qualified workers, has made some policymakers and scholars advocate a new labor migration system, comparable to the point system in Canada.

Because the implementation of the Residence Act was enacted only in 2005, it is quite early to make a full assessment of the effectiveness of theImmigration Act. Nascent statistics indicate that more work needs to be done by German policymakers in attracting foreign high skilled workers. Also, with the recent full opening of the German labor market to the new EU-10 member states, these effects are as of now not quantifiable; although some experts have argued that the inflow of workers from these new EU-10 member states will be at a moderate level.

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Appendix: Supportive Boxes, Tables and Figures

Table A-1: Timeline of Immigration Law in Germany from 2000 to present

Year	Event
2000	**January 01** Major provisions of the Act to reform the nationality law enter into force. In addition to the existing *jus sanguinis*, the law of soil or *jus soli* is introduced. This gives children born in Germany to foreign parents under certain conditions the German nationality, and thus better opportunities for their future integration. To be entitled to naturalization, the required residence time is reduced to eight years, sufficient German language skills must be proven, and a clause for the denial on the grounds of extremism has also been included **February 23** Chancellor Gerhard Schröder launches at CeBIT his green card initiative. The recruitment of 20,000 foreign computer specialists is suspended. A new debate on immigration begins **July 12** Federal Interior Minister Otto Schily sets up a bipartisan commission which should come up with practical solutions and recommendations for a new (Im-) migration policy
2001	**July 04** The final report of the Independent Commission "Immigration" is passed to the Federal Interior Minister Otto Schily **August 03** Submission of the draft bill for an immigration reform **December 20** The Bundesländer under the conservative party government reaffirm in the first round their rejection of the draft law on immigration
2002	**February 25** The Rot-Grün-coalition government makes further concessions to the CDU / CSU party, and receives numerous demands of the Union and the Bundesrat (Federal Council) in the draft of the immigration law. However, the Union rejected the proposal of consensus **March 01** The Bundestag (Federal Parliament) passed the Immigration Bill by a majority vote of SPD and Alliance 90/The Greens **March 28** The Federal Council approved the immigration bill in a controversial vote. On July 16, because of an alleged procedural defect, the Federal Constitutional Court of Justice is called **December 12** The Federal Constitutional Court decides that the Immigration Act has not been properly adopted and therefore determines the invalidity of the law
2003	**May 09** The Bundestag passes once again the same Immigration Act as formerly introduced **July 20** The Federal Council once again does not approve the immigration bill, and the federal government

Table A-1: Timeline of Immigration Law in Germany from 2000 to present

Year	Event
	calls the Mediation Committee (*Vermittlungsausschuss*)
2004	**May 25** Agreement on a compromise on the immigration bill after talks between the Chancellor Gerhard Schröder and the chairman of the SPD, Greens, FDP, CDU and CSU. Federal Interior Minister Otto Schily is mandated to formulate a bill, together with Conservative negotiators Ministerpraesident Peter Müller and Bavarian Interior Minister GüntherBeckstein **July 01** The Bundestag passes the Immigration Act **July 09** Adoption of the Immigration Act in the Bundesrat
2005	**January 01** The Immigration Act enters into force **March 18** Act of Amending the Residence Act and other laws enters into force **November 11** In the coalition agreement between CDU / CSU and the SPD, an evaluation of the Immigration Act has been agreed. It is necessary to determine whether the objectives assigned by the Immigration Act have been achieved and whether improvements are needed
2006	**March 30-31** Practitioners share their experience on the evaluation of the Immigration Act in the Federal Ministry of the Interior **Summer** The evaluation report of the Federal Ministry of the Interior on the immigration bill is submitted to the Bundestag
2007	**March 28** Cabinet decision on the draft law transposing Residence and Asylum related Directives of the European Union, with which both the Residence Act and the Freedom of Movement Act / EU, the Asylum Procedure Act and other laws and ordinances **Summer** The bill approved by the German Parliament on June 14 and by the Bundesrat on July 6. The *Bundespräsident* (Federal President) signed the law on August19
2008	December 19 The Federal Council approves the labor migration law
2009	January 01 Thelabormigrationmanagementlegislation comes intoforce

Source: Bundesministerium des Innern; Authors' presentation

Box A-1: Portion of the German Residence Act (AufenthG)

Section 4: Residence for the purpose of economic activity

§18
Employment

(1) The admission of foreign employees shall be geared to the requirements of the German economy, according due consideration to the situation on the labour market and the need to combat unemployment effectively. International treaties shall remain unaffected.
(2) A foreigner may be granted a residence title for the purpose of taking up employment if the Federal Employment Agency has granted approval in accordance with Section 39 or if a statutory provision in accordance with Section 42 or an intergovernmental agreement stipulates that such employment may be taken up without approval from the Federal Employment Agency. Any restrictions imposed by the Federal Employment Agency in granting approval are to be specified in the residence title.
(3) A residence permit for the purpose of taking up employment pursuant to subsection
2 which does not require a vocational qualification may only be issued if regulated by an inter-governmental agreement or if issuance of approval for a residence permit for the said employment is permissible by virtue of a statutory instrument in accordance with Section 42.
(4) A residence title for the purpose of taking up employment pursuant to sub-section 2 which requires a vocational qualification may only be issued for employment in an occupational group which has been approved by virtue of a statutory instrument in accordance with Section 42. In justified individual cases, a residence permit may be issued for the purpose of taking up employment when there is a public interest, and in particular a regional interest or an interest relating to the economy or the labour market.
(5) A residence title in accordance with sub-section 2 and Section 19 may only be issued if a concrete job offer exists.

§19
Settlement permit for highly qualified foreigners

(1) A highly qualified foreigner may be granted a settlement permit in special cases if the Federal Employment Agency has granted approval in accordance with Section 39 or if a statutory provision in accordance with Section 42 or an inter-governmental agreement stipulates that the settlement permit may be granted without approval from the Federal Employment Agency in line with Section 39 and there are justifiable grounds to assume that integration into the way of life which prevails in the Federal Republic of Germany and ensurance of the foreigner's subsistence without state assistance are assured. The Land government may stipulate that issuance of the settlement permit pursuant to sentence 1 requires the approval of the supreme Land authority or a body to be designated by the latter.
(2) Highly qualified persons in accordance with sub -section 1 are, in particular,
1. scientists with special technical knowledge,
2. teaching personnel in prominent positions or scientific personnel in prominent positions, or
3. specialists and executive personnel with special professional experience who receive a salary corresponding to at least twice the earnings ceiling of the statutory health insurance scheme.

§20
Research

(v o i d)

§21
Self-employment

(1) A foreigner may be granted a residence permit for the purpose of self employment,
if
1. an overriding economic interest or a special regional need applies,
2. the activity is expected to have positive effects on the economy and
3. personal capital on the part of the foreigner or a loan undertaking is available to realise the business idea.

The prerequisites specified in sentence 1, nos. 1 and 2 are generally met when at least 1 million Euros is invested and ten jobs are created. Assessment of the prerequisites in accordance with sentence 1 shall otherwise focus in particular on the viability of the business idea forming the basis of the application, the foreigner's entrepreneurial experience, the level of capital investment, the effects on the employment and training situation and the contribution towards innovation and research. The competent bodies for the planned business location, the competent trade and industry authorities, the representative bodies for public-sector professional groups and the competent authorities regulating admission to the profession concerned shall be involved in examining the application.
(2) A residence permit for the purpose of self-employment may also be granted if special privileges apply according to agreements under international law on the basis of reciprocity.
(3) Foreigners aged over 45 shall receive a residence permit only if they possess adequate provision for old age.
(4) The period of validity of the residence permit shall be limited to a maximum of three years. By way of derogation from Section 9 (2), a settlement permit may be issued after three years, if the foreigner has successfully realised the planned activity and his or her livelihood is assured.

Source: Federal Law Gazette Volume 2004, Part I, No. 41, Issued in Bonn on 5 August 2004.
Under: http://www.proasyl.de/fileadmin/proasyl/fm_redakteure/Englisch/Residence_Act.pdf

Table A-2: Overview of the Assumptions for Population Forecast

	Assumptions		
Variant	**Frequency of Fertility (Child/Woman)**	**Life Expectancy at Birth in 2060**	**Net Migration (Persons/Year)**
"Middle" Population, Upper-Limit	Approximately Constant at 1.4	Basic Assumption: Increase of 8 for the Young and 7 for the Girls	100,000 from 2014
"Middle" Population, Lower-Limit			200,000 from 2020
"Relative Young" Population	Slight Increase to 1.6	Basic Assumption	200,000 from 2020
"Relative Old" Population	Long Term Decrease to 1.2	Strong Increase: 11 for the Young and 9 for the Girls	100,000 from 2014

Source: Statistisches Bundesamt, 2009; Authors' presentation

Table A-3: ISCO-08 Structure

1	Managers
2	Professionals
3	Technicians and associate professionals
4	Clerical support workers
5	Service and sales workers
6	Skilled agricultural, forestry and fishery workers
7	Craft and related trades workers
8	Plant and machine operators, and assemblers
9	Elementary occupations
0	Armed forces occupations

Source: International Labor Organization

Table A-4: Employed Persons by Nationality and Level of Qualification, in Thousands, 2009

	Total Number Employed (excluding soldiers)			Main Categories of Qualifications								
	Total	Male	Female	Highly Skilled (ISCO 1-3)			Skilled (ISCO 4-8)			Low Skilled (ISCO 9)		
				Total	Male	Female	Total	Male	Female	Total	Male	Female
EU-14	10, 030	631	399	410	252	158	488	315	173	120	57	63
EU-10	313	148	165	85	36	49	158	88	70	63	22	41
EU-2	75	31	44	26	/	/	33	15	18	13	/	/
Third Countries	1,937	1,153	785	454	266	189	1,054	690	364	389	174	215
Most Important Third Countries												
Turkey	672	443	229	99	64	35	412	301	111	150	71	79
Croatia	155	79	76	38	17	21	93	53	39	24	9	15
Bosnia and Herzegovina	105	57	48	20	9	10	62	39	24	20	7	13
Russian Federation	104	45	59	33	14	19	45	23	22	23	8	15
Serbia	98	53	45	21	11	10	54	33	21	22	8	14
Other South and South-East Asia	83	40	43	24	16	8	38	17	20	18	5	13
Kosovo	71	50	21	6	/	/	45	/	/	19	/	/
Ukraine	57	25	32	19	9	10	25	10	15	12	6	6
Other Africa (excl. Morocco)	53	35	19	9	/	/	24	16	7	/	/	/
The United States	51	35	16	35	23	11	/	/	/	/	/	/
Other	487	291	197	150	92	59	244	153	90	81	38	42
Total	**38,365**	**20,686**	**17,679**	**16,324**	**8,391**	**7,933**	**18,334**	**10,510**	**7,824**	**3,211**	**1,509**	**1,702**

Source: Micro-census, 2009; Parusel and Schneider, 2010; Authors' presentation

Table A-5: Number of Gainful Employment According to §18 AufenthG between 2006 and 2009; Top Sending Countries

Nationality	**2006**	**2007**	**2008**	**2009**
India	2,600	3,226	3,826	2,987
USA	2,412	3,329	3,455	2,800
China	2,474	2,921	2,406	2,204
Croatia	1,431	1,692	1,588	1,849
Bosnia-Herzegovina	1,543	1,468	1,350	1,633
Russia	1,813	1,770	1,701	1,460
Japan	1,468	1,677	1,724	1,258
Ukraine	1,478	1,538	1,330	1,191
Turkey	1,256	1,339	1,417	1,029
Others Nationalities	8,016	4,106	10,344	8,642
All Nationalities	**29,466**	**28,761**	**29,141**	**25,053**

Source: BMI, 2011; Authors' presentation

Table A-6: IKT[1)]-Specialists Between 2006 and 2009 for Selected Countries

Nationality	IKT-Specialists According to §27 Nr.2 BeschV[2)]			
	2006	**2007**	**2008**	**2009**
India	1,885	2,347	2,910	1,840
China	128	193	160	106
Russia	68	88	92	57
Ukraine	37	40	50	48
Turkey	41	57	68	30
Brazil	35	43	41	26
Korea, Rep. of	16	60	32	26
The USA	36	47	31	24
Mexico	19	18	40	18
Syria	5	3	6	16
Other Nationalities	575	515	476	274
All Nationalities	**2,845**	**3,411**	**3,906**	**2,465**

Source: Source: BMI, 2011; Authors' presentation

Note: [1)]IKT stands for Information Communication Technologies; [2)]BeschV stands for *Beschäftigungsverordnung*

Table A-7: Other Academic Professions Between 2006 and 2009				
Nationality	Skilled Labor According to §27 Nr.1 BeschV			
	2006	**2007**	**2008**	**2009**
India	165	248	730	543
China	264	344	318	223
Russia	122	162	161	176
Syria	63	94	124	137
Turkey	96	112	121	103
Ukraine	55	103	86	94
Brazil	72	95	106	83
Korea, Rep. of	47	55	74	77
Egypt	27	37	42	49
Mexico	42	51	71	48
Other Nationalities	901	904	877	885
All Nationalities	**1,854**	**2,205**	2,710	**2,418**

Source: Source: BMI, 2011; Authors' presentation

Table A-8: Foreign College Graduates with A Reasonable Job Between 2006 and 2009				
Nationality	Skilled Labor with a German University Degree (§27 Nr.1 BeschV)			
	2006	**2007**	**2008**	**2009**
China	749	1,428	1,910	1,359
Russia	150	261	331	377
India	218	368	438	279
Turkey	100	197	266	258
Ukraine	116	158	259	234
Cameroon	143	256	309	234
Morocco	106	192	275	189
Korea, Rep. of	31	63	94	115
Indonesia	72	130	158	95
Mexico	49	67	102	93
Other Nationalities	1,008	1,301	1,793	1,587
All Nationalities	**2,742**	**4,421**	**5,935**	**4,820**

Source: Source: BMI, 2011; Authors' presentation

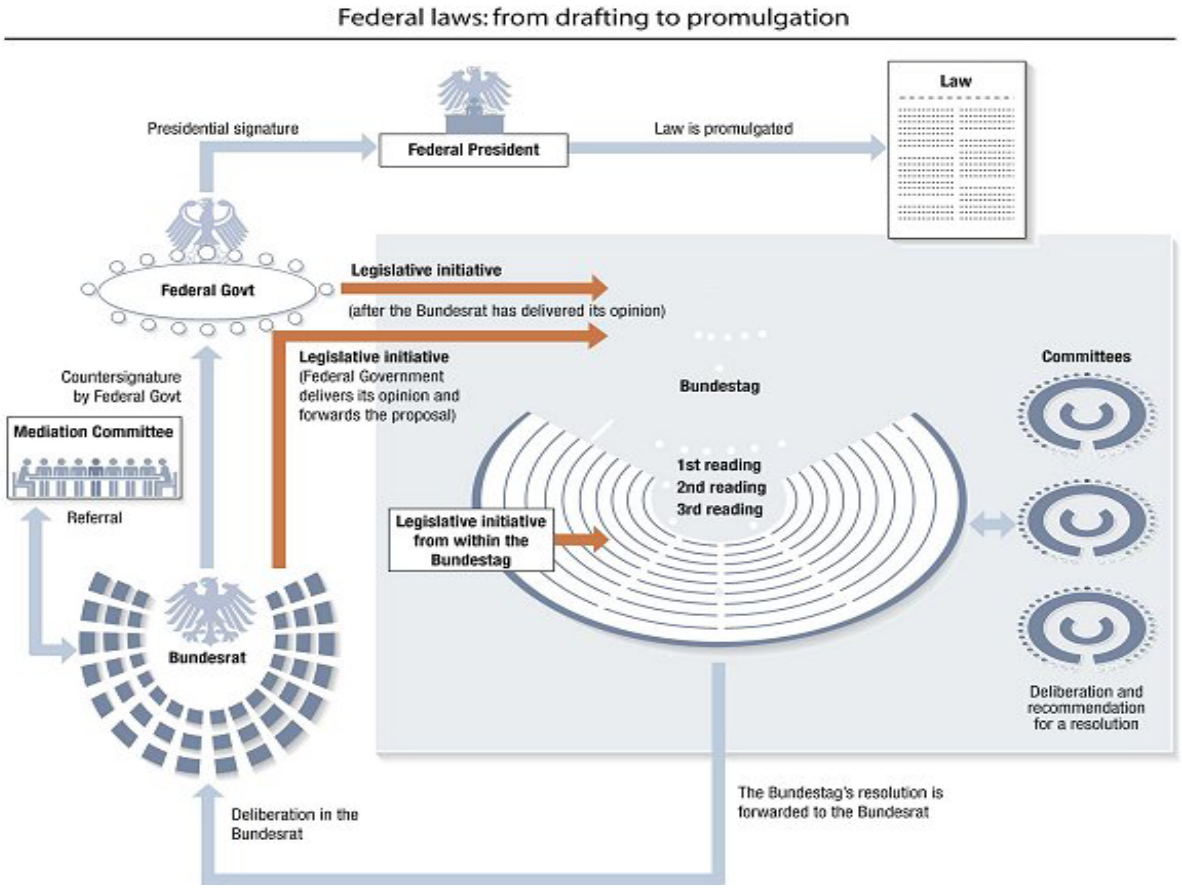
Table A-9: Number of Highly Qualified Migrants According to §19 AufenthG Between 2005 and 2009					
Nationality	**2005**	**2006**	**2007**	**2008**	**2009**
The USA	23	45	82	71	73
India	3	3	2	10	21
Japan	7	5	9	4	13
Canada	6	6	13	7	10
Australia	5	2	5	7	9
Russia	6	1	7	13	6
Armenia	0	0	0	0	5
Turkey	3	3	3	5	5
Other Nationalities	18	15	30	40	27
All Nationalities	**71**	**80**	**151**	**157**	**169**

Source: Source: BMI, 2011; Authors' presentation

Table A-10: Number of Self-Employed According to §21 AufenthG Between 2005 and 2009					
Nationality	**2005**	**2006**	**2007**	**2008**	**2009**
The USA	174	138	276	360	337
China	201	195	214	214	133
India	8	10	6	8	74
Ukraine	19	20	36	37	71
Australia	22	35	40	63	59
Russia	40	39	50	77	59
Canada	32	24	53	46	37
Serbia	1	2	9	31	36
Japan	45	17	28	16	30
Israel	9	7	25	12	19
Other Nationalities	181	155	154	375	169
All Nationalities	**732**	**642**	**891**	**1,239**	**1,024**

Source: Source: BMI, 2011; Authors' presentation

Figure 1: Law Procedure in the Federal Republic of Germany



Source: Bundestag; under: http://www.bundestag.de/htdocs_e/bundestag/function/legislation/index.html