The labour market position of second-generation immigrants in Belgium

Working Paper Research

by Vincent Corluy, Joost Haemels,
Ive Marx and Gerlinde Verbist

September 2015 No 285

National Bank OF BELGIUM
Eurosystem

Editor
Jan Smets, Governor of the National Bank of Belgium

Statement of purpose:

The purpose of these working papers is to promote the circulation of research results (Research Series) and analytical studies (Documents Series) made within the National Bank of Belgium or presented by external economists in seminars, conferences and conventions organised by the Bank. The aim is therefore to provide a platform for discussion. The opinions expressed are strictly those of the authors and do not necessarily reflect the views of the National Bank of Belgium.

Orders

For orders and information on subscriptions and reductions: National Bank of Belgium,
Documentation - Publications service, boulevard de Berlaimont 14, 1000 Brussels

Tel +32 2 221 20 33 - Fax +32 2 21 30 42

The Working Papers are available on the website of the Bank: http://www.nbb.be

ISSN: 1375-680X (print)
ISSN: 1784-2476 (online)

Abstract

Belgium has one of the largest gaps in labour market outcomes between natives and individuals of foreign origin. One might expect that the children of migrants (the so-called second generation) would perform better than the first generation, as they ought to have a better knowledge of the local language, better educational qualifications and greater opportunities for work experience in the domestic labour market. On the basis of data from the ad hoc module of 2008 Labour Force Survey (LFS) we find that employment rates for generation migrants in Belgium are hardly better than those for first generation migrants. This finding stands in marked contrast what is found in neighbouring countries. Using a unique combination of data sources, we examine the labour market position of second-generation migrants in more depth. We find considerable variation in labour market outcomes by country of origin and a Fairlie decomposition yields that education is an important explanatory factor of the employment rate gap. Yet there still remains a large unexplained part.

JEL Classification: J15, J21, J24, J61.

Keywords: Second generation immigrants, labour market outcomes, decomposition methods, educational attainment.

Authors:

Vincent Corluy, Centrum voor Sociaal Beleid Herman Deleeck – Universiteit Antwerpen; Centrum voor Economische Studiën – KU Leuven, vincent.corluy@uantwerpen.be
Joost Haemels, Centrum voor Sociaal Beleid Herman Deleeck – Universiteit Antwerpen, joost_haemels@hotmail.com
Ive Marx, Centrum voor Sociaal Beleid Herman Deleeck – Universiteit Antwerpen, ive.marx@uantwerpen.be
Gerlinde Verbist, Centrum voor Sociaal Beleid Herman Deleeck – Universiteit Antwerpen, gerlinde.verbist@uantwerpen.be

TABLE OF CONTENTS

1 Introduction

In Belgium the employment rate gap between individuals born in Belgium and non-EU immigrants of the first generation is among the largest in the European Union. Compared to natives, these immigrants have a higher probability of being unemployed or inactive and/or they need more time to find work (De Keyser et al., 2012; Neels, 2001; Kalter and Kogan, 2006). Research for Belgium has mainly focused on this first generation, i.e. individuals born outside Belgium (see e.g. Corluy et al. 2011; Corluy, 2014; De Keyser et al., 2012; Geets, 2011; Martens et al., 2005; OECD, 2010; Phalet & Heath, 2010). One might expect that their children approximate labour market characteristics of natives, because of better language skills and an (easier) recognition of their qualifications. Card (2004) argues that the success or failure of native-born children of migrants that are raised and educated in the country of residence can be seen as the ultimate benchmark of integration (see also Liebig & Widmaier, 2010). Little is known about this so-called second generation in Belgium. Is their situation more similar to that of natives or to that of the first generation? There are indications that the employment gap remains very high for this group (Eurostat, 2011; Vande Zande et al., 2009; Heath & Cheung, 2007; Fleischman & Dronkers, 2007; OECD, 2010, De Keyser et al., 2012).

Using a unique combination of data sources, this study examines the labour market position of the second generation, which is defined as those individuals living in Belgium of whom at least one parent is born in another country. In this study, natives are defined in a narrow way, namely as those people living in Belgium, who themselves as well as all their parents are born in Belgium. The labour market position is investigated in the light of the theoretical framework of classical and segmented assimilation, which is explained in section 2. For the empirical application we use 1) the data from the *ad hoc* module of 2008 Labour Force Survey (LFS), which allows for an international comparison, and 2) a new database, which is constructed on the basis of matching data from the LFS and the administrative data of the *Datawarehouse Arbeidsmarkt & Sociale Bescherming*. These data are described in section 3, together with the methodology. Section 4 then provides a descriptive analysis of the labour market position of second generation immigrants in Belgium in comparison with both natives and the first generation, while section5 discusses the possible explanatory variables. Finally, using different types of statistical methods, we search for the determinants of the differences

in employment position of the second generation compared to natives and the first generation. The last section concludes and reflects on some potential policy pathways.

2 The labour market position of immigrants and their descendants in Western Europe and Northern America: theories of assimilation

In this section we present a brief overview of studies that have analysed labour market outcomes of the children of the first generation. As little is known for Belgium, most of these studies relate to other countries, and especially North America, where the theoretical framework of classical and segmented assimilation has been used to analyse the topic. We briefly describe these two theories, as they provide a starting point for our own empirical analysis.

2.1 The position of the second generation relative to natives and first generation immigrants

The socio-economic differences between natives and the second generation have already been empirically analysed in several Western countries. These studies indicate that the socio-economic integration of the second generation lags substantially behind the position of natives. They also indicate that the second generation is heterogeneous, as there are often large differences according to the origin of the parents (Heath et al., 2008; Heath, 2009; Cheung & Heath, 2007; OECD, 2010). For Belgium, Crul et al. (2003) find that Turks and Moroccans of the second generation generally experience higher unemployment than one would expect on the basis of their education level, age and place of residence. For Germany, Worbs (2003) finds that the second generation of Turkish and Yugoslavian immigrants between 16 and 25 years is more often unemployed or employed in unskilled labour than Germans of native origin in the same age group. For France, Meurs et al. (2003) observe an overrepresentation of the second generation in both unemployment and unstable employment (temporary or subsidized jobs) and an underrepresentation in the public sector, although they also saw a general improvement of the second generation compared to the first. In another study for France, Simon (2003) observes for the population aged between 18 and 40 years, a higher unemployment rate among the second generation of Portuguese, Turkish and Moroccan immigrants, compared to French natives with the same education level. Ekberg and Rooth (2003) come to similar conclusions for the Swedish labour market: within the population between 25 and 40 years, the employment rate of the second generation for almost

all foreign groups is significantly lower than that of Swedish natives, when controlling for education, local unemployment rate, household composition and region. Wage differences, however, disappear for most immigrant groups when controlling for socio-economic profile variables. Exceptions are second generation men with South European and non-European origin, who received significantly lower wages than Swedish natives. Fibbi et al. (2006) observe a higher unemployment rate in Switzerland for the second generation of German, Turkish and Balkan origin. Changhwan et al. (2010) find a significant wage handicap for male, black 1.5[1] - and second generation in the United States, compared to male, white Americans of earlier generations with the same education and demographic profile. Herzog-Punzenberger (2003) examines the position of the Turkish second generation between 15 and 35 years in Austria and concludes that their unemployment rate, after controlling for socio-economic characteristics, is only slightly higher than that of the native population. The Turkish second generation is, however, overrepresented in unskilled labour.

Not only is the native population a relevant reference group for the second generation, but it is also important to compare the latter's position with that of first generation immigrants. For a long time the theoretical framework has been dominated by the idea of classical assimilation, which states that in a 'normal' integration process, the second and third generation outperform the first generation (Greenman & Xie, 2005; Zhou, 1997). According to this theory the process of socio-economic integration is considered to be a linear, quasi-uniform process of convergence towards natives for all origin groups. The second generation is supposed to have significant advantages over the first generation, such as better knowledge of the language, better educational qualifications and a greater chance of work experience in the domestic labour market (Heath et al., 2008). Differences in socio-economic position between migrants and non-migrants may indicate a difference in the pace of assimilation, they do not have to be seen as signs of structural inequality. In recent literature, there is only little support for general classical assimilation.

2.2 From classical assimilation to segmented assimilation

The theory of a classical assimilation process came under pressure in recent years, due to diverging patterns of assimilation between different ethnic groups in several western countries. It appeared that for different ethnic groups, both upward and downward

[1] The 1.5 generation is usually defined as those individuals that migrated together with their parents to the host country just before or during their school career (Heath, 2010). They are born outside the host country, but have access to the same education system as natives and the second generation.

intergenerational mobility occur for second generation migrants in education and employment. Gans (1992) found in the United States such diverse processes of mobility among children of migrants of the first generation, showing that the results of the second generation often depend on ethnic origin. Based on these ethnic differences, Portes and Zhou (1993) introduced in the early 90's the theory of segmented assimilation. The theory of segmented assimilation is to find an explanation for diverging paths of assimilation between the different ethnic groups (Feliciano & Waldinger, 2004). The theory of segmented assimilation is actually an extension of the classical model of integration built on the idea of upward mobility, following from two fundamental criticisms on the assumption of classical assimilation. The first criticism is that of multiculturalism: in the classical theory, all groups of migrants assimilate to the same 'mainstream culture', but following the theory of multiculturalism, this hypothesis is no longer tenable. Current society is multicultural, which creates the possibility of diverse mobility trajectories (upward, stable or downward) for the second generation, at least partly depending on an individual's cultural environment (Zhou, 1997). A possible explanation of downward mobility could be that the second generation often grows up in disadvantaged areas and assimilates to an existing underclass in the new homeland (or may come to replace it). Increasingly, many countries are composed of multiple ethnic groups who share similar traits and customs derived from the culture in which they were born (ethnic subcultures) (Greenman & Xie, 2005). The ethnic background is in other words not just something of the past. The second criticism is more structural in nature: the theory of segmented assimilation states that in the destination country, often structural factors stand in the way of the classical assimilation process. In a country with a large gap between rich and poor and few possibilities of upward mobility, the assimilation process is logically difficult (Zhou, 1997). Increased immigration streams are also seen as a structural problem for integration, because the ability of countries to absorb new entrants becomes smaller (Alba & Nee, 1997). A final structural barrier is obviously racism and discrimination. Proponents of classical assimilation theory recognize the existence of these structural barriers to integration, but continue to hold to the thesis that these differences are due to differences in speed of assimilation, which is still seen as a single upward process for all immigrants (Alba & Nee, 1997).

Based mainly on research in the United States, the theory of segmented assimilation formulates three possible paths of integration, which can occur in the socio-economic or cultural domain. The first is the path of classical, upward assimilation to the middle class. The second possibility is downward assimilation of migrants that assimilate to the existing

underclass in the country. The third possibility is that of selective acculturation. In the case of selective acculturation there is upward mobility, but only partial cultural assimilation. Immigrants will then preserve their own culture and values in a strong ethnic network, which is used as a buffer against negative environmental factors (Greenman & Xie, 2005; Portes & Zhou, 1993; Zhou, 1997). For the socio-economic perspective we use here, the first and the third path result in similar labour market outcomes, as both paths result in upward mobility.

The thesis of segmented assimilation was initially based on certain evolutions in the United States. Social researchers saw an increasing concentration of migrants in large cities, which often ended up in deprived urban neighbourhoods. Because there was a lack of strong ethnic communities as a buffer against negative environmental factors, which was the case for the Asian community in the U.S. (Perlmann & Waldinger, 1997), certain ethnic groups assimilated to the subculture of the already existing urban underclass (Portes & Zhou, 1993). It was therefore possible that children of migrants had a worse socio-economic position than their parents. Fernandez-Kelly et al. (2009) studied outcomes of education, income and crime of the second generation in the United States and found a significantly greater risk of downward assimilation for the Mexican and Caribbean second generation than for other ethnic groups. Haller et al. (2011) also suggest that in the United States, different assimilation pathways are followed by different ethnic groups, as their research shows signs of upward mobility for the second generation of Cuban descent, while the second generation of Mexican descent, contrary to the findings of Feliciano & Waldinger (2004), are characterized by downward mobility.

The segmented assimilation theory has been empirically tested in several western European countries in recent years. These studies point to selective downward mobility and a deteriorating relative position of migrants in the second generation. The difference with natives (often referred to as ‘ethnic penalty’) apparently does not decrease for the second generation in some cases, but is sometimes stagnating and in some countries even growing. Diverging trends are found for groups of different ethnic origins. Crul & Doomernik (2003) find an improvement of the Turkish second generation in the Netherlands compared to the first generation, but at the same time a downturn for the Moroccan second generation. Algan et al. (2009) observe a deterioration for the second generation in France at active age compared to the first generation, in terms of both employment and net hourly wages, especially among the African and Turkish second generation and to a lesser extent among the North African and Asian immigrant population. For Germany, Algan et al. (2009) observe a

status quo of the second generation compared to first generation immigrants, with variations between different origin groups: they find improvement for the Greek and Yugoslavian second generation, but signs of downward mobility in employment and wages for the Turkish and Central European second generation. Hammarstedt (2005) compares the salaries of first-, second- and third-generation immigrants in Sweden with those of native Swedish workers. For almost all ethnic groups wages decline in relative terms, i.e. the remuneration of the first generation is relatively better than that of the second generation, who in their turn outperform the third generation. Comparing to natives, Ekberg & Hammarstedt (2009) state that the first generation receives better salaries, the second generation has a similar position and the third generation has significantly lower wages than natives.

In general, the majority of the literature seems to support the thesis of segmented assimilation. The socio-economic outcomes of the second generation relative to natives and first generation seems to vary across origin, with processes of both upward and downward intergenerational mobility within the same country.

The research in this paper aims at testing the theses of classical and segmented socio-economic assimilation for Belgium. We examine the labour market position of the second generation in Belgium, both compared to natives and the first generation of immigrants. The thesis of assimilation as tested here only relates to the labour market (economic assimilation), cultural assimilation is not taken into account. If the classical assimilation thesis applies, then we should find a uniform upward mobility process for all origin groups. Upward mobility means here that the second generation has higher employment rates and lower unemployment rates than the first generation. The classical thesis does not say that the second generation achieves the same level as natives. However, in comparison with the first generation immigrants, they are closer to the level of native employment. If this is not the case and there are significant differences in the relationship between the first and second generation depending on origin, segmented assimilation is the more likely framework. In a next step, we then try to determine the factors that explain differences in socio-economic outcomes of the second generation compared to natives. We analyse here the impact of supply-side factors, namely characteristics of the individual. But we acknowledge that also demand-side factors (e.g. network effects, discrimination, familiarity with labour market functioning) probably also play and important role.

3 Data and methods

Until recently, the analysis of the children of first generation migrants in Belgium was hampered by lack of data in which one could identify this second generation. The EU-Labour Force Survey is a large household sample survey providing (quarterly) results on labour participation of people aged 15 and over as well as on persons outside the labour market. In this harmonised EU-LFS it is in principle only possible to identify the first generation, as it contains only information on the country of birth of the respondent. An exception is the data from the *ad hoc* module of the second quarter of the EU-LFS 2008, containing information on the country of birth of both parents. This European database allows putting Belgium in an international perspective[2]. Another possibility is to use a new database derived from the linkage of data from the Labour Force Survey and of the *Datawarehouse Arbeidsmarkt & Sociale Bescherming*. The two databases are discussed in Section 3.1, while Section 3.2 explains the statistical methods.

The division between natives, first generation and second generation is based on their own country of birth and the country of birth of their parents. Natives are people who live in Belgium, who are born in Belgium and of which all parents were also born in Belgium. Immigrants of the first generation are people who live in Belgium, but were not born in Belgium. Immigrants[3] of the second generation are defined as all persons living in Belgium and who were born in Belgium and of which at least one parent was not born in Belgium. Because there are major differences depending on origin, the group of immigrants is divided into different clusters of origin of the respondents and/or their parents. For the international comparison, the classification according to origin is limited to non-EU27 and EU27 origin. The new dataset for Belgium contains a larger sample and thus allows for a more detailed classification: for EU27 we distinguish between EU15 (i.e. those countries that were an EU members state before 2004) and EU12 (i.e. those countries that joined the EU from 2004 onwards); for non-EU27 we distinguish three groups, notably those originating from Turkey, North Africa and other non-EU27 countries.

[2] At the moment, the EU-LFS micro data for scientific purposes contain data for all EU28 Member States in addition to Iceland, Norway and Switzerland.

[3] Strictly speaking, children of first generation immigrants are themselves not immigrants, as they are born in Belgium. When we use the term 'immigrant' here, we actually mean 'foreign origin', i.e. somebody who is born outside Belgium or whose parents are born outside Belgium.

3.1 Data

We first discuss the *ad hoc* module of the Labour Force Survey (LFS) 2008, and then the larger and more detailed database using the *Datawarehouse Arbeidsmarkt & Sociale Bescherming*. For both databases, empirical analyses will be performed on a sample that is limited to the group between 20 and 44 years. This restriction has two reasons. First, exploratory analyses have revealed that the second generation, mostly the non-western second generation is significantly younger than the native population. If the full range of working age (15-64 years) is taken into account, the age distribution of the second generation would be very skewed compared to natives and these large age effects might distort the results (e.g. because employment opportunities are very different for a person older than 50 than for a 25 year old). The second reason deals with missing values in older age categories. The proportion of missing values for the country of birth of the parents is high in the older age groups, which could also bias results. Because the study has its focus on employment, also students are excluded from the sample. Bivariate results are weighted using the available weighting variable in the LFS, which adds weights for gender, age and region of residence.

For the international comparative perspective we use the Labour Force Survey (LFS). For Belgium, the LFS is a representative sample from the National Register and provides, in addition to demographic characteristics, both general and more detailed data on the employment situation, such as the quality of employment, characteristics of the workplace and information on job search processes; similar procedures are applied for the other countries. In principle this dataset does not allow for the identification of the second generation. An exception is the special *ad hoc* module of LFS 2008, in which respondents are asked about the country of birth of their parents. The data of this *ad hoc* module of the Labour Force Survey (further abbreviated as 'LFS *ad hoc*') refer to the second quarter of 2008, and thus only includes a part of the entire sample of the year.

The employment situation of immigrants in Belgium is compared to four neighbouring countries: France, Luxembourg, the Netherlands and United Kingdom[4]. Unfortunately, Germany is not included because the German Labour Force Survey makes no division by origin of its resident population. In order to have sufficiently large groups, we make a broad distinction between EU27 and non-EU27 origin. In Belgium as well as in neighbouring

[4] The LFS 2008 *ad hoc* includes also information for Austria, Ireland, Greece, Italy, Portugal and Spain. Given the specific situation of immigrants in these countries, we have chosen to limit the comparison to the neighbouring countries only.

countries, about a quarter of the population between 20 and 44 years are born abroad or are of foreign origin (Table 3.1). With regard to the second generation, a relatively greater part of the second generation is of European origin than in neighbouring countries. Luxembourg is exceptional in the sense that immigration has a very outspoken European character.

Table 3.1: Share of population groups according to origin and generation, 20-44 years (excl. students), Belgium, 2nd quarter 2008.

		Belgium	France	Luxembourg	Netherlands	United Kingdom
Natives		75.6%	75.7%	34.4%	76.3%	74.6%
1st generation	EU27	6.6%	2.6%	42.1%	3.2%	7.0%
	Non-EU27	8.4%	6.8%	6.9%	11.7%	9.6.%
2nd generation	EU27	5.8%	5.8%	15.9%	2.6%	4.1%
	Non-EU27	3.6%	9.1%	0.8%	6.2%	4.8%
Total		100.0%	100.0%	100.0%	100.0%	100.0%
N		*7,856*	*17,160*	*3,937*	*34,734*	*36,872*

Note: shares are calculated using the available weighting variable in the LFS.
Source: Labour Force Survey, 2008

In order to have an analysis that goes into more depth (i.e. with a more refined breakdown according to origin of immigrants), and that is more recent, a data request was submitted for a linked dataset containing data from the LFS and the *Datawarehouse Arbeidsmarkt & Sociale Bescherming* (DWH AM&SB). For Belgium, the DWH AM&SB includes register data about the country of birth of both parents. The link has ensured that for all quarters of the years 2008 to 2012, information on the own country of birth and the country of birth of both parents is added to the LFS data[5]. In terms of employment data, the DWH AM&SB also offers additional perspectives. It contains the socio-economic base nomenclature, through which the main source of income according to the Belgian social security can be verified. This may be different from the two definitions of employment within the LFS, namely the ILO definition and the self-defined socio-economic status (cf. infra).

Table 3.2 gives the number of cases and the shares of the population groups of the new database, to which we refer further as 'LFS&DWH'. Given the larger size (namely around four times larger as in the case of the 2008 LFS *ad hoc* module), it is now possible to present results from a more detailed categorisation of both EU27 and non-EU27 migrants. Note, however, that the number of EU12 second generation is with 56 in 2012 small; this needs to be borne in mind when interpreting the results. All other categories contain at least 200

[5] The specific data link for Belgium has been done through an *ad hoc* question and, hence, does not apply to other European countries from the Labour Force Survey. The data matching between the LFS and the DWH AM&SB is an exact one, in the sense that the national register numbers have been used to link the individuals' information in both datasets.

respondents. Within the group of 20 to 44 years, the share of foreign origin (first and second generation) is already very large. In 2012, less than seven out of ten (68.1%) was born in Belgium and has both parents born in Belgium. More than one in six respondents (19%) was not born in Belgium, while the second generation makes up 12.9% of the sample. Despite the short time frame, we can conclude that the proportion of foreign origin in the population is growing. The proportion of natives fell between 2008 and 2012 by 4.3 percentage points. There is a difference in origin composition between the first and second generation. Within the first generation, the largest group (in the age interval 20 to 44 years) was born outside the EU27. The second generation on the other hand is more of European origin. More than half of the second generation has one or both parents born in a EU27 country, though the share of non-EU27 is increasing over time (from 4.5% in 2008 to 5.8% in 2012). For non-EU27 immigrants, a more detailed breakdown is given in Table A.1.1 in Annex as background information. Given the small number of cases for the further breakdown of 'non EU27' the three categories (Turkish, North African and other non-EU27[6]) are used for the analysis.

Table 3.2: Sample size and shares of population groups, 20-44 years (excl. students), Belgium, 2008-2012

	Sample size (N)					**% distribution**				
Origin	**2008**	**2009**	**2010**	**2011**	**2012**	**2008**	**2009**	**2010**	**2011**	**2012**
Natives	23,080	21,993	21,320	19,503	19,372	72.4	70.6	69.7	69.0	68.1
1st generation										
EU27	2,315	2,179	2,342	2,072	2,088	6.3	6.2	6.9	6.7	6.8
EU15	*1,905*	*1,712*	*1,744*	*1,471*	*1,482*	*5.1*	*4.8*	*5.0*	*4.7*	*4.7*
EU12	*410*	*467*	*598*	*601*	*606*	*1.2*	*1.4*	*1.9*	*2.1*	*2.1*
Non-EU27	3,142	3,224	3,165	3,292	3,452	9.2	10.4	10.3	11.6	12.2
Turkey	*436*	*438*	*411*	*387*	*416*	*1.4*	*1.4*	*1.4*	*1.4*	*1.5*
North Africa	*972*	*1,037*	*991*	*1,063*	*994*	*2.8*	*3.4*	*3.2*	*3.7*	*3.5*
Other non-EU27	*1,734*	*1,749*	*1,763*	*1,842*	*2,042*	*5.0*	*5.5*	*5.6*	*6.4*	*7.1*
2nd generation										
EU27	2,508	2,524	2,421	2,121	2,118	7.7	7.9	7.7	7.3	7.1
EU15	*2,442*	*2,458*	*2,358*	*2,061*	*2,062*	*7.5*	*7.7*	*7.5*	*7.1*	*6.9*
EU12	*66*	*66*	*63*	*60*	*56*	*0.2*	*0.2*	*0.2*	*0.2*	*0.2*
Non-EU27	1,530	1,527	1,686	1,571	1,664	4.5	4.9	5.4	5.4	5.8
Turkey	*246*	*267*	*310*	*290*	*272*	*0.8*	*0.9*	*1.0*	*1.1*	*1.0*
North Africa	*683*	*625*	*694*	*669*	*734*	*2.0*	*2.1*	*2.3*	*2.3*	*2.7*
Other non-EU27	*601*	*635*	*682*	*612*	*658*	*1.7*	*1.9*	*2.1*	*2.0*	*2.2*
Total	**32,369**	**31,136**	**30,612**	**28,202**	**28,305**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note: shares are calculated using the available weighting variable in the LFS.
Source: LFS & DWH, 2008-2012

[6] In 2012, other non-EU first generation immigrants come mainly from Central and South-Africa (36%), Asia (29%) and Central and East-Europe (24%). Almost 10% is born in Central and South-America. The origin composition of the second generation non-EU group is quite different. Around 60% of them has at least one parent born in Central and South-Africa (potentially in combination with a native born parent). Ten percent has at least one parent born in Central and East-Europe and another 10% has at least one parent born in Asia. Another 20% lives in a heterogeneous (non-EU) origin household, with parents combining different countries of origin (see Table A.1 for more details).

Note that for 2008 the shares differ when comparing Tables 3.1 and 3.2, resp. LFS *ad hoc* and LFS&DWH, especially for the second generation. This may be due to demographic fluctuations over the year, but also (and most probably) to the fact that registration of country of birth of the parents is self-reported in LFS *ad hoc*, while LFS&DWH relies on administrative data for this information, and is, hence, considered to be more accurate.

3.2 Methods

The objective of this paper is to gain a better understanding of the employment gap between natives and immigrants on the basis of a decomposition method and the calculation of marginal effects.

First, we estimate the factors that affect the labour force position (employed versus non-employed) of immigrants and natives, using a probit model. We use a Fairlie decomposition[7] method (Fairlie, 2005) to decompose the gap in (non-linear) labour market outcomes (vector *Y*) between two populations. We estimate the gap for natives with EU born and non-EU born immigrants respectively, i.e. $\bar{Y}_N - \bar{Y}_I$:

$$\bar{Y}_N - \bar{Y}_I = \left[E_{\hat{\beta}_N}(Y_N|X_N) - E_{\hat{\beta}_N}(Y_I|X_I)\right] + \left[E_{\hat{\beta}_N}(Y_I|X_I) - E_{\hat{\beta}_I}(Y_I|X_I)\right] \quad (1)$$

Subscript *N* denotes the native population, subscript *I* the immigrant population (EU born or non-EU born), *X* is a vector of control variables and $\hat{\beta}$ is a vector of coefficient estimates. The first term of right-hand side of equation (1) measures the gap due to differences in observed characteristics (the composition or structural effect, also called the 'explained gap'). The second term measures the unexplained gap due to differences in coefficients, or returns to characteristics (the coefficient effect).

In this decomposition exercise, the choice of the reference group has an impact on the estimates outcomes. This is called the index number problem. Several options have been proposed to solve the index number problem. The 'true' non-discriminatory basis should lie somewhere between the native coefficients and the immigrant coefficients:

$$\beta^* = \Omega\hat{\beta}_N + (I - \Omega)\hat{\beta}_I \quad (2)$$

[7] The Fairlie decomposition builds further upon the Oaxaca decomposition. The Oaxaca (1973) decomposition was initially applied in explaining differences in earnings between population groups. Fairlie (2005) adapted the technique so that it could also be used in situations involving a binary dependent variable, which is the case in our analysis.

where Ω is a weighting matrix and I is the identity matrix. International literature has used different weighting schemes in the decomposition analysis of relative inequalities (Oaxaca, 1978; Neumark, 1988). In this paper we apply the estimated coefficients of natives on the distribution of immigrants (Ω = 1). Equation (1) refers to the case where natives' coefficients ($\hat{\beta}_N$) are used as the non-discriminatory basis. Neumark (1988) argues that if men are paid competitive wages while women are underpaid, the coefficients of men should be taken as the non-discriminatory wage structure. Similarly, we can argue that the labour market position of natives is the desirable outcome that immigrants should be able to achieve in a 'fair' world. One can read this exercise as an 'equal opportunity' simulation, moreover because natives are by far the largest group (Neumark, 1988; Neels, 2001; Kahanec and Zacieva, 2009). A detailed decomposition can be used to determine how much each characteristic contributes to explaining the gap. We use Fairlie's (2005) method while sequentially switching the coefficient of each covariate with the reference group and the immigrant group.

As mentioned, the decomposition divides the difference in employment between natives and immigrants between an explained (composition effects) and unexplained gap. However, this unexplained part is quite heterogeneous and may include differences in marginal effects and interaction mechanisms between marginal and composition effects. We also present the marginal effect of the 'average' person (i.e. a hypothetical individual with all characteristics set at the mean values), which gives the change in the predicted probability of an outcome resulting from an increase of one unit of the relevant variable, holding all other variables at their respective means. Moreover, these marginal effects are easier to interpret than the probit coefficients. Comparing the marginal effects between population groups, gives an indication of the extent of the 'ethnic penalty' for the probability of employment.

4 A descriptive analysis of the labour market position of first generation immigrants and their children

In this section we describe the labour market position of immigrants using the two datasets we dispose of. In a first section we use the *ad hoc* module of the LFS 2008 to put Belgium in an international perspective. Next, we draw several labour market indicators from the LFS&DWH database. We describe the socio-economic situation of natives and immigrants in Belgium based on three different indicators: economic status according to the ILO definition (employed, unemployed, inactive), socio-economic position based on an (administrative)

nomenclature[8] and work intensity on the household level. In addition, also a number of characteristics of labour are addressed: wages, contract type, full-time/part-time, job categories and possible over-qualification in the lowest job category.

4.1 Belgium in an international perspective

We first compare the employment position of natives and different groups of immigrants in Belgium with that in four neighbouring countries (France, Luxembourg, the Netherlands and the United Kingdom). We make a distinction between EU27 and non-EU27 origin, using the LFS *ad hoc* 2008.

Figure 4.1: Employment rates of first and second generation EU27 and non-EU27 immigrants in Belgium and neighbouring countries, 20-44 years (excl. students), 2nd quarter 2008

Source: Labour Force Survey, ad hoc module 2008

The first striking observation from Figure 4.1 is the considerable difference between EU27 and non-EU27 origin. In all countries, first generation EU27 immigrants have an employment rate that is close to that of natives, while the non-EU27 first generation shows a very large gap. The employment gap between natives and first non-EU27 generation immigrants is the

[8] The nomenclature of the socio-economic position is a variable in the Data Warehouse Labour Market and Social Protection (DWH AM & SB) which is based on different administrative sources that are supplied by the various social security institutions. In the 'basic' nomenclature of socio-economic position (without 'derived' variables), the following positions are distinguished: employed (salaried, self-employment, combination), unemployed (with distinctions over different unemployment benefits), inactive (career interruption, pension, social assistance, child allowance, disabled) and other.

largest in Belgium (with 30 percentage points), although in other countries it is close to 20 percentage points. The United Kingdom has the lowest gap with 16 percentage points.

For the EU27 second generation, employment rate are similar to both natives and their first generation, and this is the case for all countries. For most countries, the employment of the non-EU27 second generation is much better than that of the first and in the case of Luxemburg, the Netherlands and the United Kingdom very close to that of natives. Belgium is here the exception: the employment rate is roughly the same for first and second non-EU immigrants. As a consequence, the employment disadvantage of the non-EU27 second generation is much greater in Belgium compared to neighbouring countries.

4.2 Differences in employment profile using the new database for Belgium

Given this particular position of Belgium we investigate into more depth these differences using the linked dataset LFS&DWH. Table A.1.2 in Annex compares the employment rates of natives and immigrants on the basis of the LFS 2008 *ad hoc*, the linked LFS&DWH dataset 2008 and 2012. There are some differences for 2008 between the two data sources: the employment rate of the first generation is 2.5 à 3 percentage points lower according to the LFS&DWH, while the non-EU second generation has a higher employment rate according to this source (4.6 percentage points). As we already mentioned, LFS&DWH is probably more reliable for defining the origin of the individuals, given that register data are used. An additional factor is that the LFS *ad hoc* 2008 includes only data of the second quarter, while the linked dataset includes the sample of the entire year, thus smoothing seasonal fluctuations.

4.2.1 Employment according to the ILO definition

Table 4.1 shows the activity, employment and unemployment rates of natives and immigrants of the first and second generation according to origin for the years 2008-2012. The concepts of activity, employment and unemployment are defined here as formulated by the International Labour Organisation (ILO)[9]. Table 4.1 illustrates the difference between EU27 and non-EU27 immigrants, both in first and second generation. Within the first generation,

[9] The (economic) activity rate measures the proportion of a working age population (in this case 20-44 years) who are active or potentially active members of the labour market. This rate combines employed and unemployed individuals and consequentially gives an indication of the proportion of people working or available for work (or training). The employment rate is calculated by dividing the number of persons aged 20 to 44 in employment (completed at least one hour of work in the period being measured, or are temporarily away from his or her job) by the total population of the same age group. The unemployment rate is defined as the percentage of the total labor force (all 'active' individuals) that is unemployed but actively seeking employment and willing to work.

the employment rate of EU27 immigrants is 75.8 percent in 2012, which is almost 10 percentage points lower than native employment. Also, their unemployment rate is higher than that of native unemployment (10 percent versus 5.9 percent). The employment of the first generation born outside the EU27 is much lower. The group with the lowest employment rate is the North African first generation, where only half of the population (49.1 percent) is at work; for Turkish and other non-EU27 this is somewhat higher (55 percent). These differences also show up in the second generation. For EU27 immigrants, the difference between the two generations is rather small. Both the activity and employment rate of the second generation with EU27 origin is about 2 to 4 percentage points higher than in the first generation. For non-EU27 immigrants, the situation of the second generation is also better than the first generation's, with employment rates that are on average 15 percentage points higher. There is within this group a strong difference according to origin. The second generation with non-EU27-origin excluding Turkey and North Africa has a similar employment situation compared to the second generation with EU27 origin. The situation of the Turkish and North African second generation is better than the first generation, but still a large gap with natives remains. Their employment rate is more than 20 percentage points lower than that of natives (respectively 64.2 and 63.3 percent versus 85.6 percent). Also their unemployment rate is strikingly higher than native unemployment (respectively 16.7 and 21.4 percent versus 5.9 percent).

Over the economic crisis period, we observe decreasing employment rates between 2008 and 2012 in general and for most groups. Compared to 2008, the employment position of natives has fallen with 1.6 percentage points and for first generation EU27 it has decreased with 1.2 percentage points[10]. For non-EU27 immigrants, the drop is larger, namely 3 percentage points. Decreases are much smaller for EU27 second generation, and for the non-EU27 second generation we even find an increase in employment rate from 63.8% to 68.2%. The crisis effect has been strongest between 2008 and 2009, when roughly all groups experienced a drop in employment rate and also the strongest increase in unemployment rates over the period.

[10] These changes are not statistically significant (p-value = 0.05).

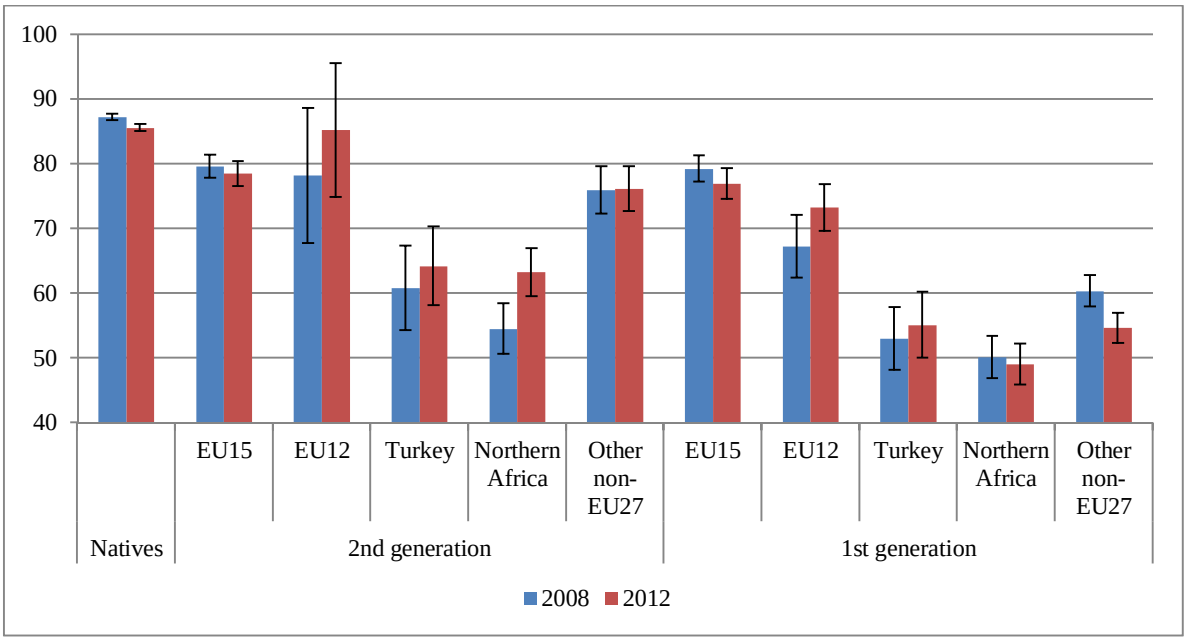
Table 4.1: Activity, employment and unemployment rates according to origin and generation, 20-44 years (excl. students), Belgium, 2008-2012

	Activity rate (%)					Employment rate (%)					Unemployment rate (%)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Natives	92.1	92.0	92.1	90.9	91.0	87.2	86.3	86.2	86.1	85.6	5.3	6.2	6.5	5.2	5.9
1st generation															
EU27	84.2	84.8	84.4	85.4	84.4	77.0	76.2	76.1	77.5	75.8	8.5	10.1	9.9	9.2	10.2
EU15	*86.0*	*84.9*	*85.1*	*86.6*	*84.5*	*79.2*	*77.2*	*78.0*	*79.4*	*76.9*	*7.8*	*9.1*	*8.4*	*8.3*	*9.0*
EU12	*76.1*	*84.3*	*82.6*	*82.6*	*84.0*	*67.3*	*72.7*	*71.2*	*73.3*	*73.2*	*11.6*	*13.7*	*13.8*	*11.3*	*12.8*
Non-EU27	71.1	71.1	71.7	67.3	68.9	56.1	54.8	54.3	52.6	53.1	21.1	23.0	24.2	21.9	22.9
Turkey	*64.8*	*64.4*	*68.1*	*59.5*	*66.0*	*53.0*	*47.5*	*55.1*	*47.0*	*55.1*	*18.2*	*26.3*	*19.0*	*21.0*	*16.5*
North Africa	*67.4*	*67.4*	*67.3*	*64.8*	*65.5*	*50.1*	*50.1*	*48.3*	*47.5*	*49.1*	*25.7*	*25.6*	*28.3*	*26.8*	*25.1*
Other non-EU27	*74.9*	*75.2*	*75.1*	*70.6*	*71.1*	*60.4*	*59.5*	*57.6*	*56.9*	*54.6*	*19.5*	*20.8*	*23.2*	*19.5*	*23.2*
2nd generation															
EU27	88.6	87.5	88.1	87.2	87.4	79.6	77.5	78.0	78.6	78.7	10.2	11.5	11.5	9.9	10.0
EU15	*88.6*	*87.6*	*88.1*	*87.1*	*87.4*	*79.6*	*77.5*	*78.0*	*78.4*	*78.5*	*10.2*	*11.5*	*11.4*	*9.9*	*10.2*
EU12	*88.5*	*84.6*	*90.4*	*93.0*	*88.8*	*78.2*	*74.2*	*77.4*	*84.3*	*85.2*	*11.6*	*12.3*	*14.4*	*9.4*	*4.1*
Non-EU27	81.2	80.0	84.8	81.6	81.9	63.8	61.9	66.5	65.1	68.2	21.4	22.7	21.6	20.3	16.7
Turkey	*76.9*	*75.7*	*82.8*	*78.3*	*77.1*	*60.8*	*55.9*	*67.0*	*63.2*	*64.2*	*21.0*	*26.2*	*19.0*	*19.3*	*16.7*
North Africa	*78.0*	*76.8*	*83.3*	*78.4*	*80.5*	*54.5*	*53.7*	*57.2*	*56.2*	*63.3*	*30.1*	*30.1*	*31.3*	*28.3*	*21.4*
Other non-EU27	*86.8*	*85.5*	*87.4*	*87.2*	*85.9*	*75.9*	*73.6*	*76.4*	*76.4*	*76.1*	*12.5*	*13.9*	*12.6*	*12.3*	*11.3*
Total	88.9	88.4	88.8	87.0	87.0	82.1	80.5	80.5	80.0	79.5	8.0	9.4	9.7	8.6	9.2

Source: LFS & DWH, 2008-2012

Especially for the North African and Turkish second generation, there are notable changes between the years. The employment rate of the North African second generation increased only slightly to 56.2 percent in 2011 and then makes a big upward jump to 63.3 percent in 2012. Among the Turkish second generation, the changes are even more remarkable: we observe a decrease in employment rate to 55.9 percent in 2009, then a strong rise in 2010 to 67 percent and stagnation around 64 percent in 2012. These are notable changes between years, with the possible explanation lying in the ILO definition of employment, which states that any paid work by an individual is taken into account under the definition of employed. Precarious and informal employment is thus also included, which can be much more volatile. Because of their lower level of education (see later), Turkish and North African second generation immigrants are possibly more exposed to such types of employment.

Figure 4.2: 95% confidence interval employment rate by origin and generation, 20-44 years (excl. students), Belgium, 2008 and 2012



Source: Own calculations, based on LFS & DWH, 2008-2012

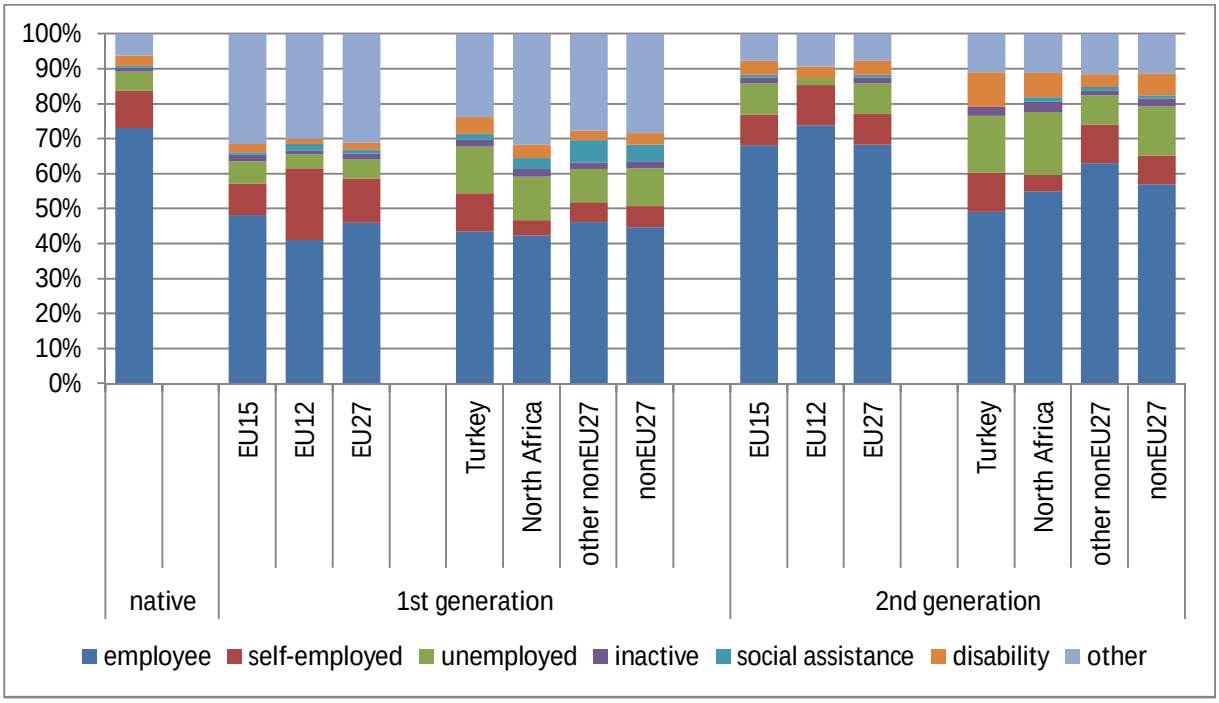
Another possible, and probably more important, explanation is the structure of the sample. The LFS is a cross-sectional sample with a different sampling for each year. The Turkish and North African second generation is significantly younger than other groups (see later) and therefore has a large new inflow in the selected age group every year. Also, there is a large margin of error. When including confidence intervals (95 percent) for employment rates (see Figure 4.2), several changes between 2008 and 2012 are not significant. In the second generation, only for the North African second generation, the difference in employment between 2008 and 2012 is significant. Overall, it appears that the crisis has had only a small employment effect on migrants, as most differences are not significant. In Tables A.1.3a and A.1.3b in Annex, the same numbers are given separately for men and women. The employment of immigrant women born outside the EU27 is very low: about one third of the female Turkish and North African first generation is at work, for other female immigrants born outside the EU27 this is around one half. Turkish and North African women of the second generation are more often active and more often employed than the first generation. Their activity rate is much higher (nearly 30 percentage points for North African women). This difference is also seen in employment (24 percentage points higher for North African women of the second generation). The unemployment rate of the Turkish and North African second generation remains high, with respectively 22.6 and 23.7 percent.

In the following paragraphs, other dimensions of employment will be discussed. This information is displayed for the most recent year for which data are available.

4.2.2 Employment according to the socio-economic nomenclature

The link with the DWH data allows verifying the administrative employment position. Where the employment variable in the LFS is based on the ILO definition, the socio-economic base nomenclature of data starts from social security rules. Figure 4.3 shows the distribution in our sample according to the main source of income for each respondent according to the Belgian social security. The category 'Other' are persons who are registered in the National Register, but have no connection with the Belgian social security.

Figure 4.3: Socio-economic position according to socio-economic nomenclature by origin and generation, 20-44 years (excl. students), Belgium, 2012



Source: LFS & DWH 2012

These numbers largely confirm the outcomes according to the ILO definition. The share of employees is much lower among all first generation groups when compared to natives; for the second generation we observe shares close to natives for the EU27 immigrants. The share of self-employed is relatively high among the EU12 group (especially for the first generation, but also for the second); much smaller shares are found among the two North African groups and the other non-EU27 first generation. There is a striking difference among non-employed immigrants between the first and the second generation. When the second generation has no job, they are much more likely to be found in unemployment. This is different from the first

generation, which is also characterized by high unemployment, but where much more immigrants have no (more) link with the social security or enter social assistance, especially in the group born outside the EU27.

4.2.3 Employment on the household level

The LFS&DWH data allows looking at the employment situation of the total household where someone is residing, as it contains data on the work intensity of the household, more specifically whether the household is or is not in a position of low work intensity (Low Intensity Work). The work intensity of the household is seen as the ratio between the actual volume of labour and the potential volume of labour of the household. The potential volume of work is the maximum working volume of a household: this is achieved when all working-age adults (excluding students) have worked full-time the entire year. A household is defined as having low work intensity (LWI) if the work intensity is less than or equal to 0.2.

Table 4.2: Share of individuals in households with low work intensity by origin and generation, 20-44 years (excl. students), Belgium, 2010

	Total	Couples[11]	Singles
Natives	8.3%	4.9%	20.4%
1st generation			
EU27	23.5%	20.1%	33.3%
EU15	*25.2%*	*22.0%*	*34.7%*
EU12	*19.9%*	*15.7%*	*30.3%*
Non-EU27	28.9%	23.74%	46.0%
Turkey	*22.8%*	*17.7%*	*56.2%*
North Africa	*31.9%*	*27.5%*	*49.6%*
Other non-EU27	*28.7%*	*23.2%*	*43.7%*
2nd generation			
EU27	14.8%	8.8%	31.4%
EU15	*14.8%*	*8.7%*	*31.9%*
EU12	*15.8%*	*15.4%*	*17.7%*
Non-EU27	21.7%	16.6%	34.8%
Turkey	*25.3%*	*20.4%*	*42.4%*
North Africa	*25.9%*	*20.3%*	*39.8%*
Other non-EU27	*14.9%*	*9.8%*	*26.8%*

Source: LFS & DWH 2012

First generation non-EU27 immigrants have a high proportion of individuals in a LWI household (28.9%) in comparison with natives (8.3%) (Table 4.2). The second generation performs better on the level of work intensity than the first generation: the share of individuals in households with low work intensity is lower for most origins. Nevertheless, the

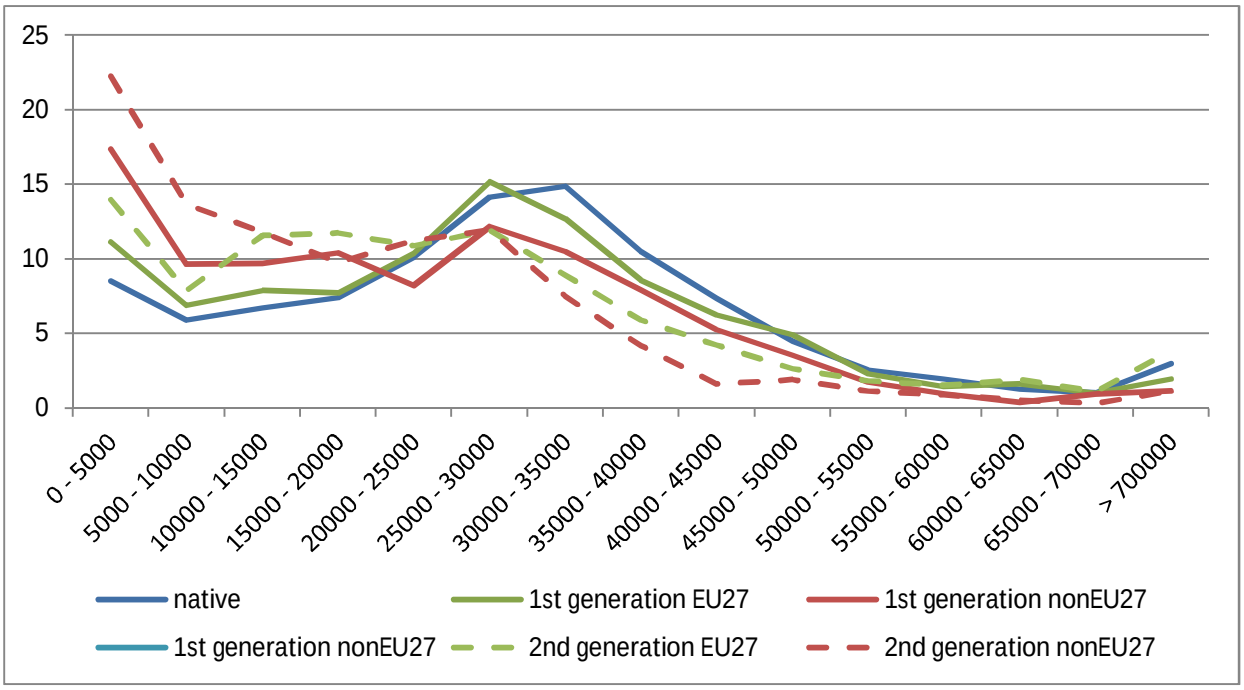
[11] Couples refer to households consisting of two working-age adults (irrespective of the presence of children). We present low household work intensity rates for individuals living in couples and single-adult households separately because household work intensity rates are, by definition, strongly dependent of household size.

proportion remains much higher than among natives, especially in the North African second generation (26% live in an LWI household). Couples have a lower share of LWI than singles.

4.3 Wage differences

Not only do the first and second generation have different employment probabilities from those of natives, also in terms of wage levels and other job characteristics, there are substantial differences. The LFS&DWH contains earnings data of employees, self-employed and civil servants. Figure 4.4 shows the wage distribution of gross earnings of employees only. The data for civil servants and the self-employed are not presented as the number of cases is too small for certain groups of immigrants for these categories to be analysed separately. Moreover, reliability of income data on the self-employed is an issue and this administrative data sample struggles with a very high proportion of missing values.

Figure 4.4: Gross yearly earned income distribution by origin and generation, 20-44 years (excl. students), Belgium, 2011



Source: LFS&DWH, 2012

The earnings distribution of first generation EU27 immigrants is close to that of natives, while for the EU27 second generation low wages are somewhat more prevalent. For non-EU27 immigrants this pattern is even stronger, with a higher share of low wages for first generation and especially second generation immigrants. Figure A.1.1 in Annex present more details and shows that the disadvantage is largest for the Turkish second generation, with about 70%

having a gross income of less than 25,000 euros. This is similar to the situation of their first generation. This different pattern of earnings relates mainly to differences in job characteristics (e.g. type of contract and branch of activity), and less to differences in work intensity (i.e. prevalence of part-time work), as we illustrate in the next section.

4.4 Differences in other job characteristics

Other indicators of job characteristics include type of contract, prevalence of part-time work, job level and the occurrence of over qualification. We discuss these four topics in turn. An important aspect of job quality is job security, measured here by *type of contract*. A permanent contract provides greater protection against dismissal than a temporary contract. The LFS provides information on the type of contract of each employee (permanent or temporary) and provides additional information about the motive behind temporary labour. One of the possible reasons is that the respondent wants a permanent job, but is unable to find one. This can be interpreted as involuntary temporary employment.

Table 4.3: Share of temporary and involuntary temporary employment by origin and generation, Belgium, 20-44 years (excl. students), 2012

	Temporary employment (as % of total employment)	Involuntary temporary employment (as % of temporary employed)
Natives	8.2%	12.6%
1st generation		
EU27	12.8%	17.3%
EU15	*12.7%*	*16.9%*
EU12	*13.1%*	*18.3%*
Non-EU27	18.5%	12.7%
Turkey	*11.8%*	*14.1%*
North Africa	*16.5%*	*16.1%*
Other non-EU27	*20.8%*	*11.3%*
2nd generation		
EU27	9.4%	10.7%
EU15	*9.3*	*11.0*
EU12	*10.8*	*0.0*
Non-EU27	14.1%	8.8%
Turkey	*16.6*	*9.3*
North Africa	*13.0*	*6.4*
Other non-EU27	*14.3*	*11.0*

Source: LFS & DWH, 2012

Table 4.3 shows the proportion of (involuntary) temporary employment of workers by origin group. Temporary employment is more present among non-EU27 immigrants than among natives, and this is the case for both generation groups. Interestingly, the prevalence of involuntary temporary employment is relatively lower for these groups than for natives.

Table 4.4 shows the proportion of *part-time work* by origin for the total working population and for men and women separately. For the total working population, differences between natives, the first and the second generation are rather limited. For all origins, there is a higher proportion of part-time work among women. For men, the proportion of part-time work is only notably higher for the North African second generation (11% versus 5.7% for natives). In the case of women, the proportion of part-time work is remarkably higher within the first generation: more than half of the Turkish and North African women work part-time. Within the female second generation, there is, except for the Turkish group, a lower proportion of part-time work than for natives.

Table 4.4: Share of part-time by origin, generation and gender, 20-44 years (excl. students), Belgium, 2012

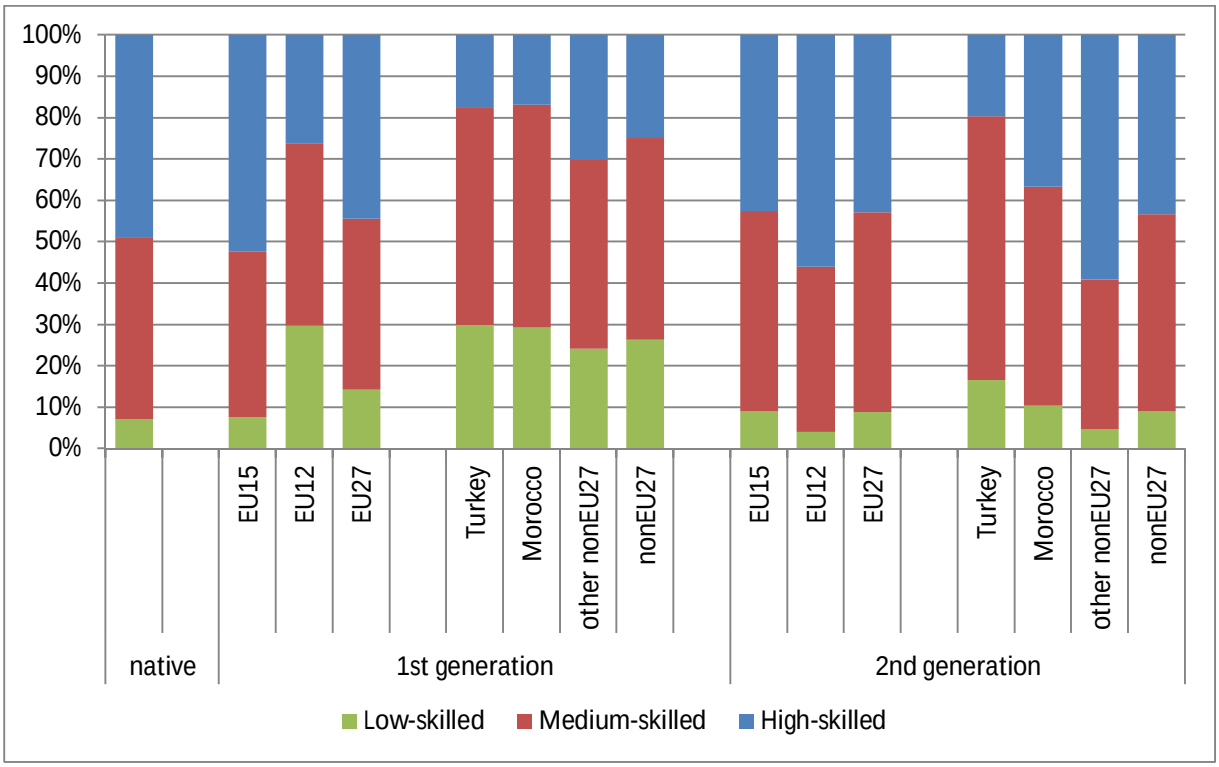
	Total	Men	Women
Natives	20.7%	5.7%	37.7%
1st generation			
EU27	22.1%	6.9%	36.3%
EU15	*21.7%*	*6.9%*	*36.3%*
EU12	*23.1%*	*6.8%*	*36.2%*
Non-EU27	24.3%	8.4%	47.2%
Turkey	*20.9%*	*5.9%*	*57.9%*
North Africa	*21.0%*	*8.3%*	*50.9%*
Other non-EU27	*26.5%*	*9.1%*	*44.8%*
2nd generation			
EU27	20.1%	5.7%	37.3%
EU15	*20.5%*	*5.8%*	*38.1%*
EU12	*7.0%*	*4.1%*	*10.9%*
Non-EU27	19.5%	7.9%	33.9%
Turkey	*20.1%*	*4.7%*	*44.0%*
North Africa	*20.8%*	*11.0%*	*33.7%*
Other non-EU27	*18.1%*	*5.9%*	*30.9%*

Source: LFS & DWH, 2012

The *job level* is indicated by the codes of the International Standard Classification of Occupations (ISCO). The ISCO scale ranks occupations according to job content and required qualifications on a 9-point scale. The scale goes from the highest category 1 of high, managerial positions to the lowest category 9 of low-skilled elementary jobs (category 0 includes armed forces occupations). As can be seen from Figure 4.5, almost half of employed natives work in one of the three highest categories. For immigrants, there are large differences according to origin. It is again the better position of the other non-EU27 second generation that is remarkable, with nearly 6 out of 10 with a highly qualified job. However, this is an exception, because the rest of both the first and second generation are overrepresented in the lowest categories and underrepresented in the higher categories. But again, the position of the

second generation for most origins is better than for the first generation. Within the Turkish and North African first generation, nearly 30 percent of the ILO-employed is working in the lowest category of elementary labour. The position of the Turkish and North African second generation is better, but especially the Turkish second generation is still working significantly more often in lower categories than natives.

Figure 4.5: ISCO classification[12] of employed population by origin and sex, Belgium, 20-44 years (excl. students), 2012



Source: LFS & DWH, 2012

Another factor in job quality is *overqualification*, where immigrants are indeed employed, but at a lower job level than can be expected according to their level of education. This is an indication of an underutilisation of their human capital. Table 4.5 shows the educational level of natives and immigrants working in the lowest job category 9 of the ISCO scale. This is only one possible definition of overqualification, but it shows already that the phenomenon is more prevalent among the first generation than among the second. Except for the Turkish first generation, just over 11 percent of the workers in the lowest job category is high-skilled, among natives this is only 3.1 percent. In the second generation, this proportion of high-educated in the ISCO 9 category is only slightly higher than for natives. The origin of degree

[12] We distinguish three types of professions based on ISCO (International Standard Classification of Occupations), i.e. low-skilled (ISCO 9), medium-skilled (ISCO 4-8) and high-skilled (ISCO 0-3).

can play in role in this difference between the first (more likely foreign origin) and second generation (more likely Belgian origin). Recognition of foreign degrees may be a barrier here.

Table 4.5: Level of education of the employed population in the ISCO 9 category by origin and sex, 20-44 years (excl. students), Belgium, 2012

	Low-skilled	Medium-skilled	High-skilled
Natives	37.2%	59.7%	3.1%
1st generation			
EU27	41.2	47.1	11.7
EU15	*57.5*	*34.5*	*8.0*
EU12	*31.4*	*54.7*	*13.9*
Non-EU27	55.6	34.2	10.1
Turkey	*66.1*	*32.4*	*1.5*
North Africa	*55.6*	*33.2*	*11.2*
Other non-EU27	*52.9*	*35.3*	*11.9*
2nd generation			
EU27	50.2	45.4	4.4
EU15	*50.3*	*45.3*	*4.5*
EU12	*48.9*	*51.1*	*0.0*
Non-EU27	47.8	46.7	5.6
Turkey	*35.3*	*57.3*	*7.4*
North Africa	*56.2*	*38.7*	*5.1*
Other non-EU27	*45.5*	*50.5*	*4.0*

Source: LFS & DWH, 2012

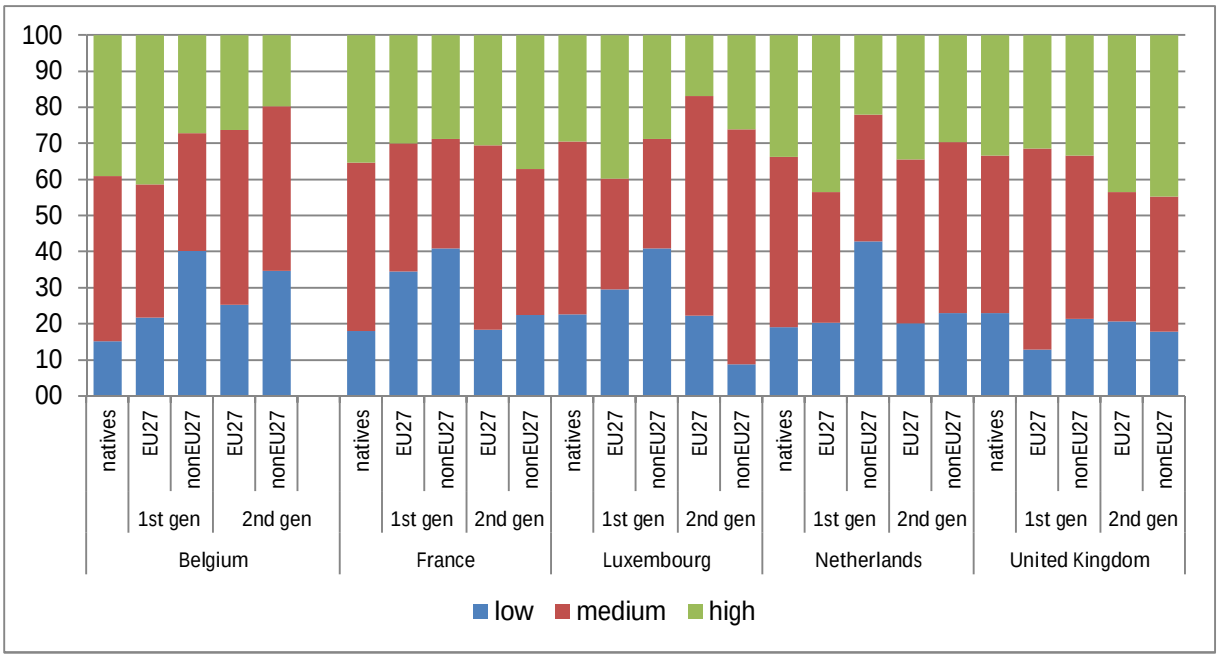
5 Description of explanatory variables of employment gap

In our statistical model we try to find an explanation for the employment rate gap of immigrants and natives. Before we do this, we describe those factors that are included in the model as explanatory variables, notably education (section 5.1), a set of socio-demographic variables (section 5.2) and region of residence for the Belgian analysis only (section 5.3). In each section we present the distribution of the characteristics for the countries we consider for the international comparison using LFS *ad hoc module*, and for Belgium separately using LFS&DWH. It is important to stress that for the international comparison, results relate to 2008, while for the LFS&DWH data we present here, we use the most recent data, notably 2012. As we have seen before, there are some important differences between the years 2008 and 2012 for Belgium, which is why the outcomes are not exactly the same for both analyses.

5.1 Education level

Human capital theory assumes that investment in education is rewarded by improved labour market performance. We might expect that (lack of) human capital is a very important determinant of individual employment chances. Hence, we include level of education in our model as a possible important explanatory variable. Level of education is divided here into three categories: low-skilled (ISCED[13] 0 through 2), medium-skilled (ISCED 3 and 4) and high-skilled (ISCED 5 and 6). Similar to other countries, the first generation born outside the EU27 in Belgium has a lower share of high-educated and a higher share of low-skilled in the age group 20 to 44 years than the native population (Figure 5.1). An exception to this pattern is the United Kingdom, where the education profile of the first generation is not so different from that of natives. In most countries the share of high education is higher for the second generation than for the first. Belgium is an exception: the share of high education is lower than among the first. However, for the 2012 data this is not the case.

Figure 5.1: Share of education level by origin and generation, 20-44 years (excl. students), international comparison 2nd quarter 2008

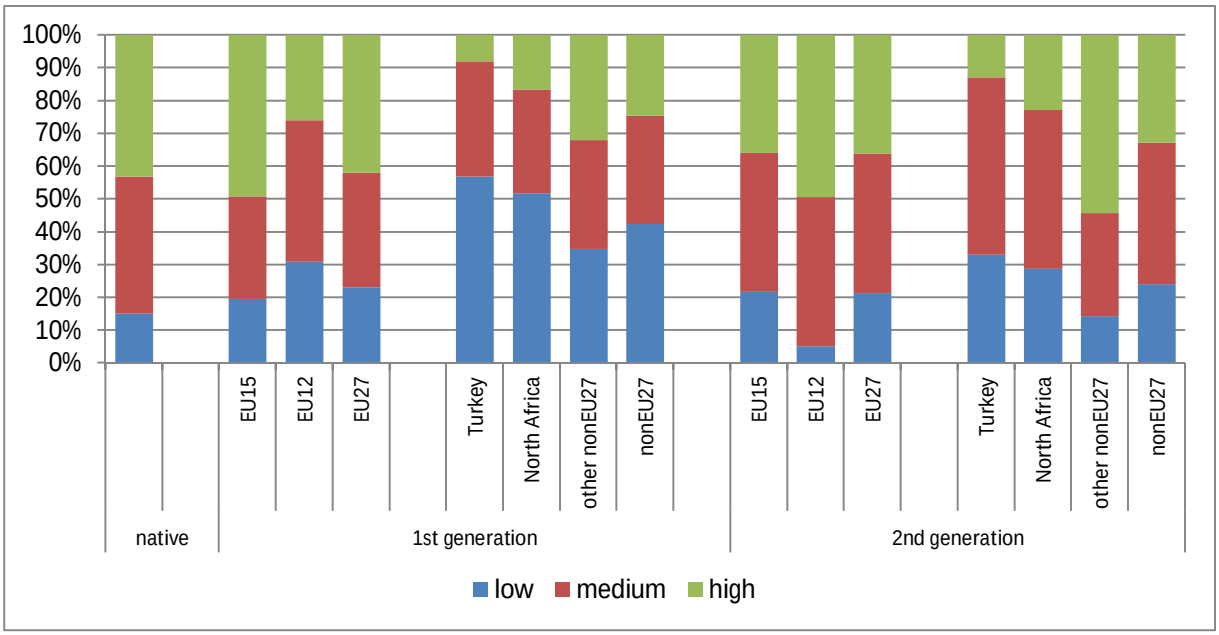


Source: Labour Force Survey, 2008

[13] The International Standard Classification of Education (ISCED) is a statistical framework for organizing information on education maintained by UNESCO, see http://www.uis.unesco.org/Education/Pages/international-standard-classification-of-education.aspx.

Figure 5.2 shows the level of education of natives and immigrants for Belgium in 2012. The second generation of immigrants generally has a higher level of education than the first and this for all origins, which might indicate classic upward assimilation. However, there are still large differences between the groups. The overrepresentation of low education levels among Turkish and North African immigrants of the first generation (over 50%) is also seen in the second generation (be it at a lesser degree). Compared to natives, a much higher proportion of Turkish and North African second generation has not completed secondary education. The opposite is seen in high education, where more than 40 percent of natives are high-skilled, which is much lower among Turkish and North African origin groups (resp. 12.9% and 22.7%). Interestingly enough, the second generation from outside the EU27 has an education profile that is even slightly stronger than that of natives, with a similar proportion of low-educated and a higher share of high-skilled (54%, compared to 43% among natives).

Figure 5.2: Education level by origin and generation, Belgium, 20-44 years (excl. students), 2012

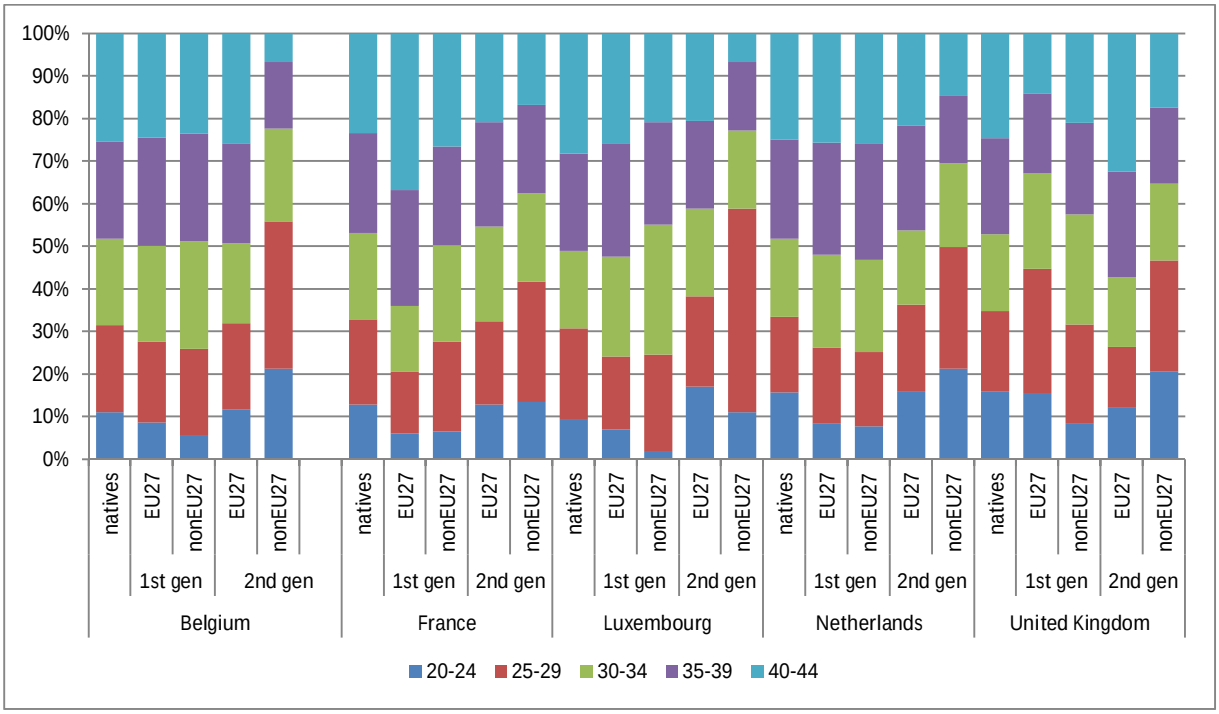


Source: LFS & DWH, 2012

5.2 Socio-demographic variables: age, gender and household composition

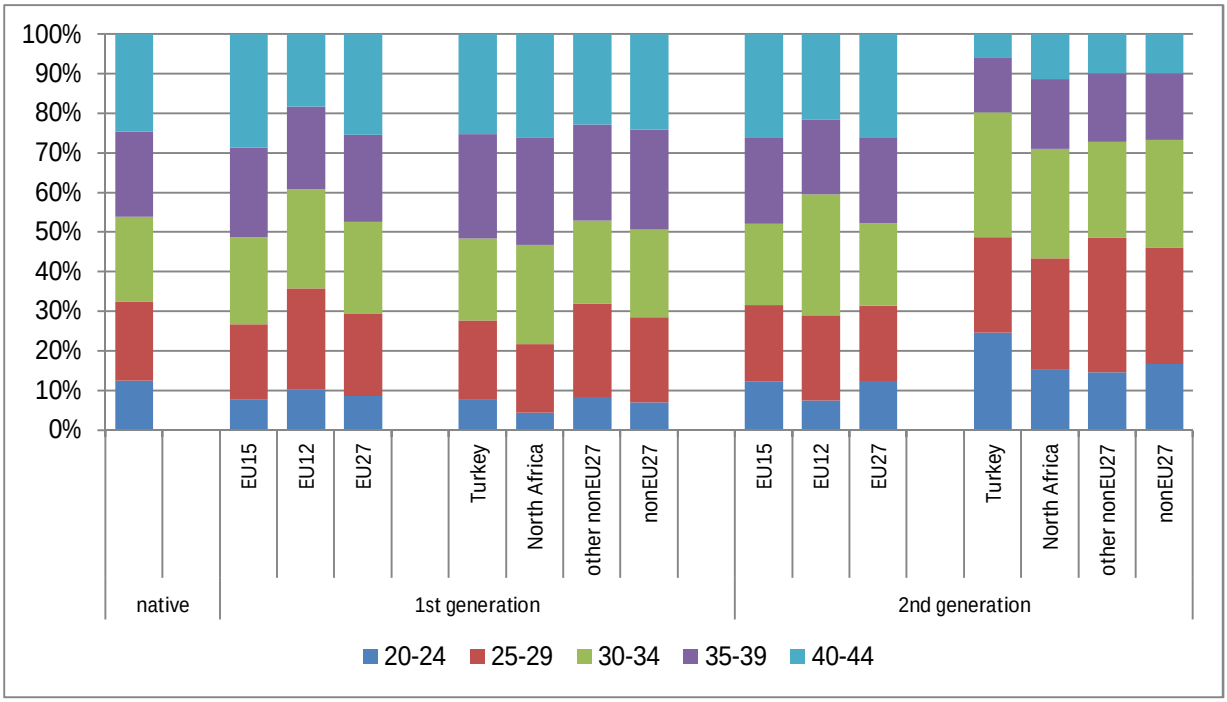
In the regression analysis in section 6 we include a set of socio-demographic variables as controls. We briefly present here age and household composition; gender is also included in the regression analysis, but as there were few differences across groups we do not present the distribution of this variable.

Figure 5.3: Share of age groups by origin and generation, 20-44 years (excl. students), international comparison, 2nd quarter 2008



Source: Labour Force Survey, 2008

Figure 5.4: Age distribution by origin and generation, 20-44 years (excl. students), Belgium, 2012

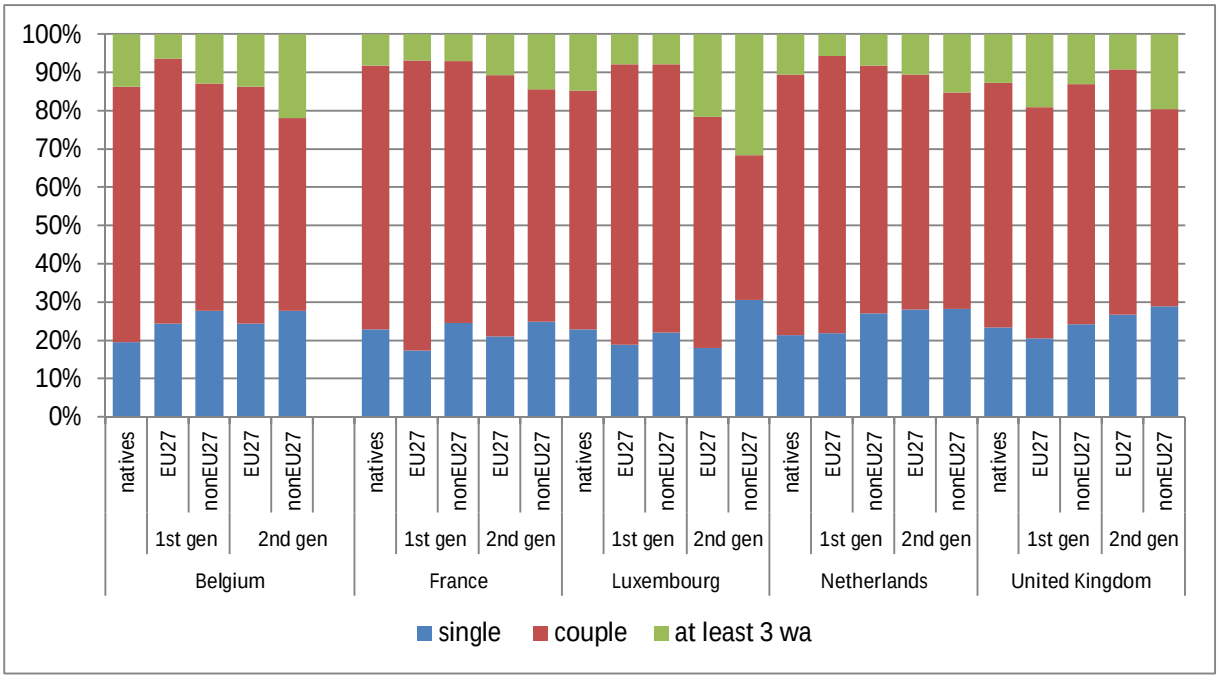


Source: LFS & DWH, 2012

The younger profile of the second non-EU27 generation is very apparent in Figure 5.3, which may be affect their employment outcomes as they may have less (or no) work experience and may be more prone to youth unemployment. Within the group between 20 and 44 years, more than 40 percent of the second generation with non-EU origin is younger than 30, compared to around one third for natives. This pattern is found in all five countries. There is also a strong difference between the age profile of the first and the second generation: first generation non-EU27 immigrants have an age profile that is similar to natives.

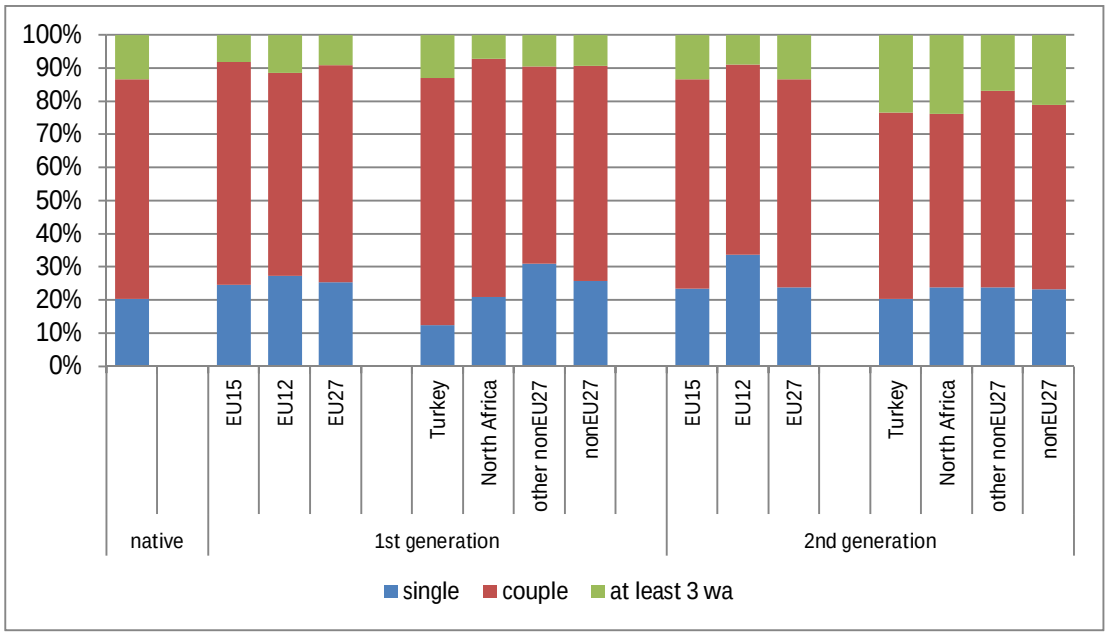
The more detailed breakdown for Belgium in 2012 in Figure 5.4 shows that the patterns are broadly similar for the Turkish, North African and other non-EU27 groups. For EU origin, we observe that the EU12 is younger than the EU15 first generation, which is probably an indication of the more recent character of this immigration stream coming from the newer EU member states.

Figure 5.5: Share of household type (number of working age adults) by origin and generation, 20-44 years (excl. students), international comparison 2nd quarter 2008



Source: Labour Force Survey, 2008

Figure 5.6: Share of household types (number of working age adults) by origin and generation, 20-44 years (excl. students), Belgium, 2012



Source: LFS & DWH, 2012

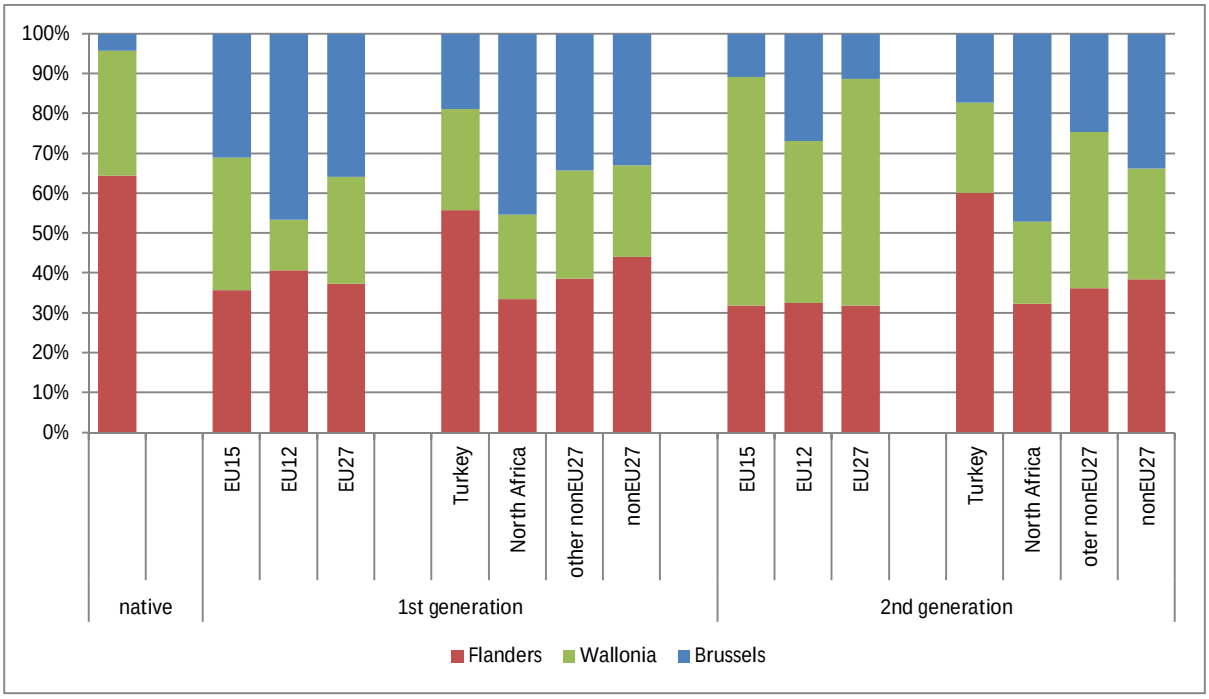
In the regression we include an indicator of household composition, namely the number of working age individuals in the household. As can be seen in Figure 5.5 in all countries second generation from non-EU27 origin lives more in households with three working age individuals than the other groups; this is an indication that this group may have a higher income sharing potential as there are more potential workers in the household. For Belgium 2012, we observe that this phenomenon is more pronounced among the Turkish and North African second generation than among other non-EU27.

5.3 Region of residence

In Belgium the regions differ considerably in terms of economic situation and thus in employment prospects for individuals. A difference in geographical spread between natives and immigrants may provide an additional explanation for differences in employment. Previous research already indicated that due to processes of chain migration and network effects, immigrants are more concentrated in urban regions (MacDonald & MacDonald, 1962, Burnley, 1975). The LFS only allows geographic breakdown across regions but nevertheless, Figure 5.7 provides an indication of the concentration of immigrants, especially in Brussels. The concentration is strongest among North African immigrants. Almost half of both first- and second generation North African immigrants are residing in the Brussels region. The

overrepresentation in Brussels is present though less outspoken for Turkish immigrants, where the distribution of the first and second generation is nearly equal.

Figure 5.7: Region of residence by origin and generation, 20-44 years (excl. students), Belgium, 2012



Source: LFS & DWH, 2012

The geographical spread of EU27 immigrants is different across generations. The first generation is overrepresented in the Brussels region, while the children of EU27 immigrants are overrepresented in the Walloon Region. This concentration of the first generation is though biased by having limited the sample to the maximum age of 44 years.

6 Trying to understand the employment gap

In this section, we try to grasp the determining factors of these employment gaps and investigate whether there are differences across countries in explanatory factors: is it due to observable characteristics of the immigrant population, such as education level, or are there unobservable factors, which is called in the literature 'ethnic penalty'? This is done by applying a Fairlie decomposition of the binary variable of being ILO-employed or not, using the unweighted sample (see section 3.2). We first put Belgium in international perspective (section 6.1), and then go more deeply into the Belgium situation (section 6.2). Finally, we

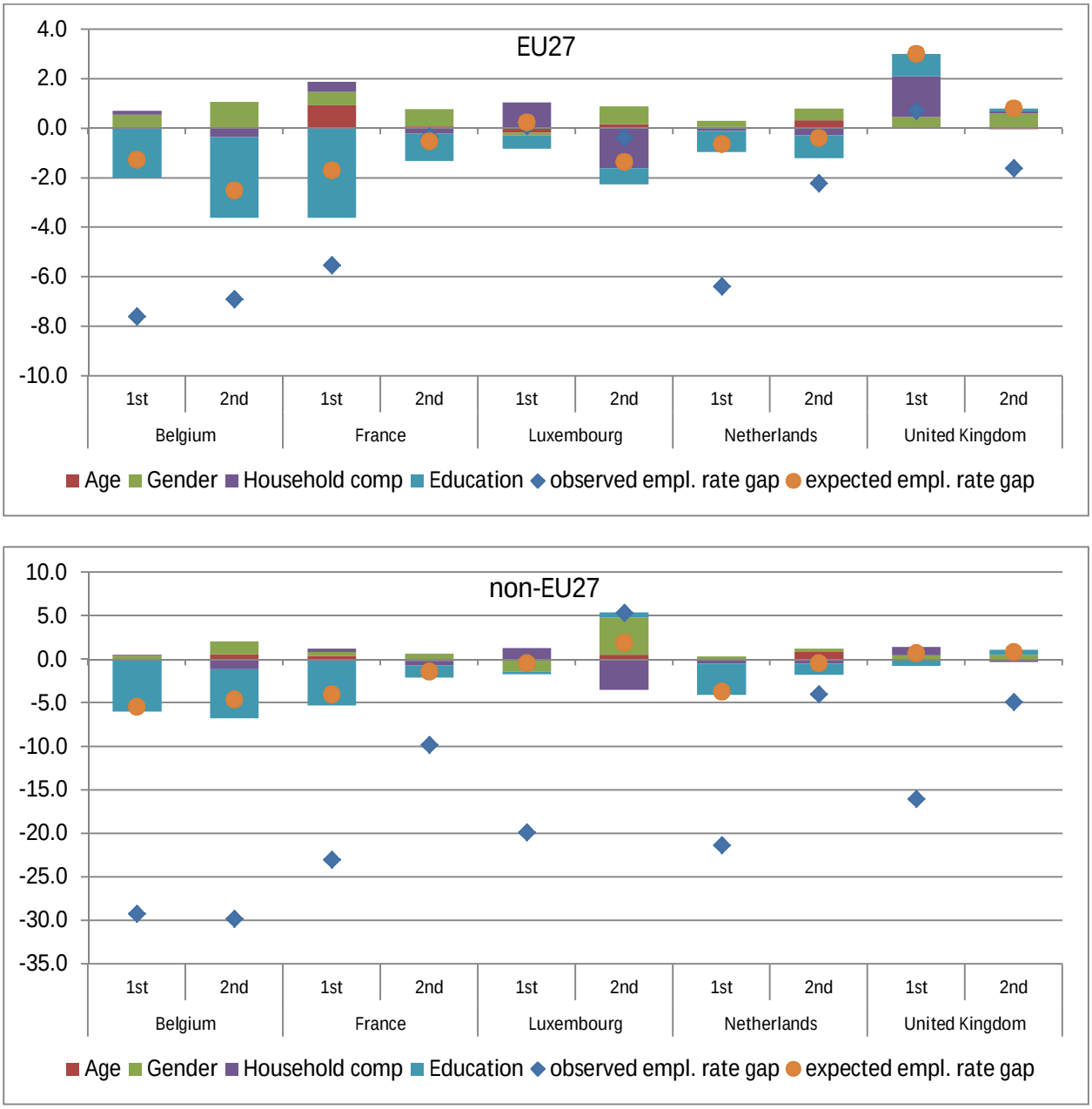
look at marginal effects for Belgium only, thus trying to capture the ethnic penalty (section 6.3).

6.1 Decomposition of the employment gap of immigrants: an international comparison

We first give the outcomes of the Fairlie decomposition for Belgium and neighbouring countries on the basis of the LFS *ad hoc module*. As described in the previous section, the explanatory variables are age, gender, household composition and education. We try to explain the difference in employment rate gap between natives and the different origin groups by these variables. The results are shown in Figure 6.1 for EU-27 and non-EU27 separately, as the scale of the gap is very different for both groups. The expected employment rate gap is the gap one would expect on the basis of the explanatory variables, i.e. the differences in employment rate due to difference in composition of the sample. The unexplained part is the difference between the observed and the expected employment rate gaps. In Belgium, France and the Netherlands first generation EU immigrants have a larger unexplained part than the second generation; in France and the Netherlands, the gap is almost entirely explained for the second generation EU immigrants, and then especially by the difference in education level. In Luxembourg and the United Kingdom, the gaps for EU immigrants are small, and a large part is explained. In Belgium, the position of the EU second generation has improved somewhat compared to the first; differences in education level, however, have become a more important explanatory factor.

The special position of Belgium is even more striking when looking at non-EU27 immigrants: as already indicated, the employment rate gap is very similar for the first and the second generation; moreover, the unexplained part is similarly large for both groups (and much larger than for the EU groups, note the difference in scale). This contrasts for instance with the Netherlands (and to a lesser extent France and the United Kingdom), where the employment rate gap declined substantially, especially accompanied by a steep drop in the unexplained part. Differences in education level are the most important explaining factor in Belgium for the second generation, while hardly playing a role in the other countries. This relates to the education profiles which are more similar to natives in these countries than in Belgium (see section 5.1).

Figure 6.1: Fairlie decomposition of probability on employment of first and second generation EU27 and non-EU immigrants compared to natives, 20-44 years (excl. students), Belgium, 2008



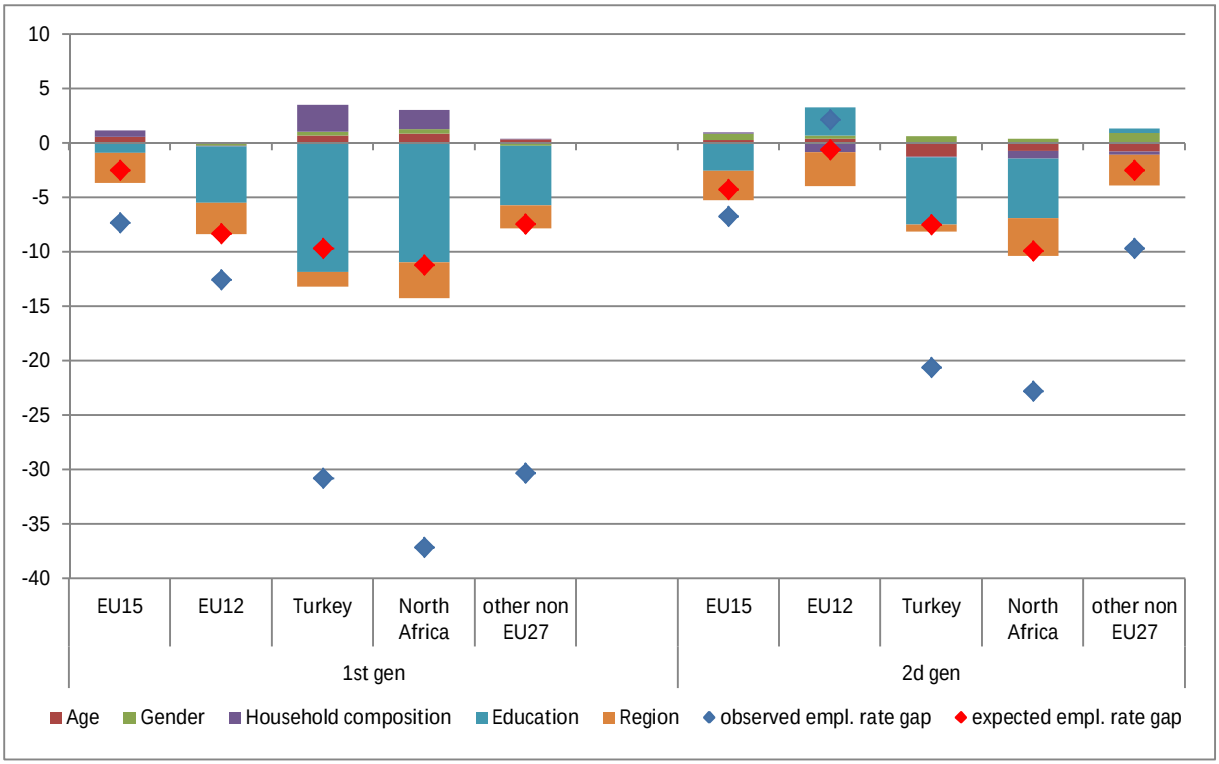
Source: Labour Force Survey, 2008

6.2 *A more detailed decomposition of the employment gap of immigrants for Belgium*

Figure 6.2 presents the same analysis for Belgium, this time using the most recent year of the linked dataset LFS&DWH, which also allows for a more detailed breakdown of immigrants'

groups[14,15]. For EU immigrants the gap between observed and expected employment rate is relatively limited, and this is the case for both EU15 and EU12 immigrants, confirming the pattern of the previous Figure. The unexplained part is very small for the second EU15 generation, with education and region of residence as the main explanatory variables.

Figure 6.2: Fairlie decomposition of probability on employment of first and second generation EU27 and non-EU27 immigrants compared to natives, 20-44 years (excl. students), Belgium 2012



Source: LFS&DWH, 2012

For non-EU27 immigrants the breakdown over different groups reveals some interesting differences. For the first generation education is for the three groups the most important explanatory factor, with region providing also a contribution to the explanation (household composition has an opposite sign: this means that differences in household composition of the Turkish and North African generation compared to natives are such that one would expect a higher employment probability). For the second generation the unexplained part is still important, though in absolute terms smaller than for the first generation (remember that the

[14] The coefficients of the probit regressions and the employment probabilities for the different groups are given in Annex 2.

[15] Region of residence is added as additional explanatory variable compared to the international comparison. For the first generation, nationality appeared also to be an important explanatory factor (see Corluy et al., 2011). This is, however, not a relevant variable for the second generation as more than 90% of the non-EU27 group has the Belgian nationality.

employment gap decreased for these groups from 2008 to 2012 due to a decreasing employment rate of natives and increase for especially Turkish and North African second generation, see table 4.1). Differences in education level provide for the Turkish and North African second generation around 25% à 30% of the explanation of the employment gap (shares that are rather similar to those of the first generation). This variable, however, plays hardly a role in the explanation for the second generation of other non-EU27.

6.3 Marginal effects

In the previous analyses, we have attempted to determine to which extent composition effects may explain differences in employment. It was, however, assumed that marginal effects were equal between natives and the first and second generation of immigrants. The question may be asked whether this assumption is adequate and whether there may be differences in marginal effects between the different groups. As argued in section 3.2, average marginal effects are another way of analysing the ethnic penalty. We perform a probit regression with dependent variable whether the respondent is employed according to the ILO definition. The explanatory variables consist of education, gender, age, household variables and region of residence. Regarding education, the group of medium-skilled is taken as a reference group, with dummy variables for high and low education. For age, dummy variables are given per year added with a quadratic term, given the changing effect of age on employment over age. The demographic variables are gender and household composition. The household variables are a dummy variable for marriage or legal cohabitation and a dummy variable for having children. Interaction terms are added for household composition and gender. We present the average marginal effects for EU15 and EU12 together, as well as for Turkish and North African, as the coefficients are very close to one another for these separate groups; providing all the details would overburden the output.

The coefficients in Table 6.1 represent for Belgium 2012 the average marginal effects of the independent variables on the probability of employment, estimated on the probability of employment.

Table 6.1: Marginal effects on probability of employment, 20-44 years (excl. students), Belgium, 2012

	Natives		**EU27 1st generation**		**Turkish and North African 1st generation**		**Other non-EU27 1st generation**		**EU27 2nd generation**		**Turkish and North African 2nd generation**		**Other non-EU27 2nd generation**	
	(N=19372)		(N=2118)		(N=2088)		(N=1006)		(N=658)		(N=1410)		(N=2042)	
Low-skilled	-0.135	***	-0.108	***	-0.111	***	-0.106	***	-0.121	***	-0.169	***	-0.161	***
High-skilled	0.084	***	0.123	***	0.113	***	0.109	***	0.126	***	0.183	***	0.130	***
Age	0.023	***	0.022	***	0.035		0.018	**	0.040	***	0.039	*	0.087	
Age²	0.000	***	0.000	***	0.000		0.000	*	-0.001	***	-0.001		-0.001	
Female	-0.027	***	0.043		-0.085		-0.069		-0.022	**	-0.011		-0.086	**
Couple	0.056	***	-0.011	***	-0.058		0.023		0.071	***	-0.033		0.091	
At least 1 child	-0.022	***	-0.070		-0.094	***	-0.009	***	-0.019		-0.115	***	-0.041	
Female*Couple	-0.008	***	-0.076	***	-0.316	**	-0.111	**	-0.012		-0.202	*	-0.032	***
Female * At least 1 child	-0.062	***	-0.105	***	-0.328	**	-0.126	**	-0.070		-0.216	*	-0.060	
Flemish Region	0.091	***	0.084	***	0.111	***	0.032	***	0.121	***	0.116	***	0.173	
Walloon Region	0.015		0.043		0.010	***	-0.032		0.005	***	-0.003		0.109	
Pseudo R^2	0.143		0.137		0.090		0.123		0.148		0.139		0.063	

Source: LFS & DWH, 2012. ***=p<0.01, **=p<0.05, *=p<0.1

The effects of education appear to be stronger for the second generation with non-EU27 origin than for the first generation and for natives. The effect of low education is more negative and the effect of high education more positive on employment. This indicates that the skill premium is larger for the second generation. We find this especially for those of Turkish and North African origin: having a higher education degree increases their employment probability substantially compared to having a secondary education degree. The fact that the coefficients for higher education are smaller for the first generation probably relates to the fact that often these degrees are of foreign origin[16], which frequently face a challenge of recognition in Belgium. Except in cases of foreign study, the high-skilled second generation has obtained their degree at a Belgian institute of higher education. Therefore, this human capital can be used immediately on the Belgian labour market. This is less self-evident for the first generation.

A possible additional explanation may be differences in language skills, given the low educational level of the sample. The effect of language skills should be much smaller for the

[16] Moreover, reported levels of education in EU-LFS are self-defined.

non-EU 27 second generation than for the first generation, as the second generation was born in Belgium and has participated in the Belgian education system, which is often in contrast to the first generation. Unfortunately, the real impact of language skills cannot be examined here.

Also interesting are the different marginal effects of the demographic variables. Earlier, it was found that the employment of the female second generation, more specifically of Turkish and North African origin, is remarkably low. Strangely enough, the effect of gender on employment does not differ much in the second generation and is only significantly negative for the second generation with non-EU27-origin. The crucial factor here is not female employment as such, but the interaction between gender and household composition. The interaction effect of gender and having children is not significant for the second generation of EU27 origin, but strong and negative for the second generation of Turkish and North African origin. It is thus apparent that the employment of the female 'non-Western' second generation is only slightly lower when they are single or in a couple without children. However, as soon as they have children, their employment is much lower, indicating a more difficult or absent reintegration of the female Turkish and North African second generation after childbirth compared to women of Belgian or EU27 origin.

7 Conclusion

In this report, we have examined the labour market position of second generation immigrants in Belgium. Based on the LFS *ad hoc* 2008 data, it is shown that not only the first generation, but also the second generation of non-EU27 origin has a much lower employment rate in Belgium compared to neighbouring countries. While the employment gap between the first generation and natives is similarly large in the five countries examined here, we observe that in the neighbouring countries the second generation succeeds in closing the gap with natives. According to the 2008 *ad hoc* module of LFS employment figures of the second generation in Belgium are hardly better than those of the first generation. One would, however, expect the second generation to perform better, as they should have a better knowledge of the local language, better educational qualifications and greater opportunities for work experience on the domestic labour market. To investigate this further, we have used a new database, namely a link between LFS data with social security data of the *Datawarehouse Arbeidsmarkt & Sociale Bescherming*. This new database allows for a much more accurate identification of the

second generation, as register data are used, compared to the self-reported variable in the LFS *ad hoc* 2008. Given this difference, outcomes differ for Belgium 2008 when using the two databases. The more accurate identification of second (and subsequent) generation migrants is important if one wants to assess their socio-economic performance and the extent of labour market assimilation. Hence, we recommend enabling such data matching in the future for improved monitoring of labour market outcomes.

Based on this new dataset, we tried to uncover whether employment differences between the first and second generation of immigrants in Belgium can be framed in the hypothesis of respectively classical or segmented assimilation. When the second generation has a better position on the labour market than the first generation of the same origin, this could point to classical assimilation. We find indeed for 2008 that both EU27 and non-EU27 second generation perform somewhat better than the first, but there are considerable differences according to origin. Especially for other non-EU27 origin, we find a much better performance of the second generation (15.5 percentage points higher employment rate than the first generation). For those of Turkish and North African origin, the difference is smaller (around 5 percentage points). This rather points to segmented assimilation. For 2012, we find that the employment gap between natives and the second generation has become smaller, on the one hand because the native employment rate has decreased from 87.2% to 85.6%, while on the other hand the rates for the second generation increased (contrary to what happened among the first generation) to 64.2% for Turkish origin, 63.3% for North African origin and 76.1% for other non-EU origin. Apparently, the crisis has hardly had a negative effect on the employment of the second generation, which might indicate that the second generation appears to be somewhat better equipped for the Belgian labour market than the first. Summarizing, the Belgian case seems to correspond to the segmented socio-economic assimilation theory than to the classical one, given the diversity in patterns across origin groups.

We have also tried to detect explanations for the differences between natives and immigrants of the first and second generation. Using a Fairlie decomposition we found for 2012 that the second generation still has a large unexplained employment disadvantage, though it appears to be smaller than among the first generation. Among the explanatory variables education is the most important one, especially for those of Turkish and North African origin.

Analysis of marginal effects highlights the major differences between men and women. Within the non-EU second generation, female employment remains very low and this seems

to be caused by different marginal effects of household composition. Within that particular group, having children has a much stronger negative effect on employment than among women of Belgian and EU origin.

However, important nuances must be placed in the results. The strong short-term fluctuations in the employment of the Turkish and North African second generation between 2008 and 2012 are remarkable. Although their employment position over that period has improved, it is still not a solid conclusion that the employment of the non-European second generation is structurally improving. A period of four years is too short to determine whether these are random fluctuations or a real trend of improved employment of the second generation. Further research over a longer period seems recommended for this issue.

Despite these caveats the results allow for some indications of policy directions. Education is not only for the first generation immigrants a crucial explanatory factor, also for the second generation it is important, as part of the employment gap points to the lower educational profile of especially children of Turkish and North African immigrants. Moreover, the skill premium appears to be high for these groups: those that attain a higher degree have a much higher employment probability than those that do not. Hence, further efforts are needed to continue improving schooling trajectories and outcomes of the children of immigrants, as was already found in the OECD PISA studies. Given the differences in outcomes across origin group, a differentiated approach seems appropriate. Also the regional dimension illustrates that special attention should go to the labour market position of the younger groups in Brussels. Especially for the North African and other non-EU27 second generation, region was part of the explanation of the employment gap, resulting from their overrepresentation in Brussels. The data used in this paper do not allow to unravel whether this is due to labour supply or demand factors. Next, given the strong impact of household composition (marriage and presence of children) one might also consider to enhance use of formal childcare among mothers with a non-European background, in order to improve their employment opportunities. Finally, also the large unexplained part of the employment gap merits further attention. Different factors may play a role here, some of them relating to the demand side of the economy. Examples include discrimination, network effects, differences in preferences etc. Even though these factors fall outside the scope of this study, they are part of the story of attaining successful labour market inclusion of individuals with foreign origin.

References

Alba, R.D. & Nee, V. (1997). Rethinking Assimilation Theory for a New Era of Immigration. International Migration Review 31(4)

Algan, Y., Dustmann, C., Glitz, A. & Manning, A. (2009). The Economic Situation of First- and Second-Generation Immigrants in France, Germany, and the UK. Bonn: IZA

Aydemir, A. & Sweetman, A. (2006). First and Second Generation Immigrant Educational Attainment and Labor Market Outcomes: A Comparison of the United States and Canada. Bonn: IZA

Burnley, I.H. (1975). Immigrant Absorption in the Australian City, 1947-1971. International Migration Review 9(3), 319-333

Card, D. (2004). "Is the new Immigration really so bad?". The Economic journal, 115(507), 300-323.

Changhwan, K., Hyeyoung, W. & Sakamoto, A. (2010). Does an Immigrant Background Ameliorate Racial Disadvantage? The Socioeconomic Attainments of Second-Generation African Americans. Sociological Forum 25(1), 123-146

Corluy, V., Marx, I. & Verbist, G. (2011), "Employment Chances and Changes of Immigrants in Belgium: The Impact of Citizenship", International Journal of Comparative Sociology, vol.52 (4), pp.350-368.

Corluy, V. (2014). Labour Market Outcomes and Trajectories of Immigrants in Belgium. Doctoraatsthesis, Universiteit Antwerpen

Crul, M. & Doomernik, J. (2003). The Turkish and Moroccan Second Generation in the Netherlands: Divergent Trends between and Polarization within the Two Groups. International Migration Review 37(4), 1039-1064

Crul, M., Timmerman, C. & Vanderwaeren, E. (2003). The Second Generation in Belgium. International Migration Review 37(4), 1065-1090

De Keyser, T., Delhez, P. & Zimmer, H. (2012). De inschakeling van personen van buitenlandse origine op de arbeidsmarkt. NBB Economisch Tijdschrift 86(3), 25-45

Ekberg, J., Hammarstedt, M. & Shukur, G. (2010). Immigrant-native earnings differentials: SUR estimation applied on three generations. Annals of Regional Science 45, 705–720

Ekberg, J. & Rooth, D-O (2003). Unemployment and earnings for second generation immigrants in Sweden. Ethnic background and parent composition. Journal of Population Economics 16, 787–814

Eurostat (2011). Migrants in Europe: A statistical portrait of the first and second generation. Luxemburg: Europese Commissie

Fairlie, R.W. (2005). An extension of the Blinder-Oaxaca Decomposition Technique to Logit and Probit Models. Journals of Economic and Social Measurement 30, 305-316

Feliciano, C. & Waldinger, R. (2004). Will the new second generation experience downward assimilation? Segmented assimilation re-assessed. Ethnic and Racial Studies 27(3), 376-402

Fernández-Kelly, P. , Haller, W. & Portes, A. (2009). The Adaptation of the Immigrant Second Generation in America: A Theoretical Overview and Recent Evidence. Journal of Ethnic and Migration Studies 35(7), 1077-1104

Fibbi, R, Lerch, M. & Wanner, P. (2006). Unemployment and discrimination against youth of immigrant origin in Switzerland: when the name makes the difference. Journal of International Migration and Integration 7, 351–66

Fleischmann, F. & Dronkers, J. (2007). The effects of social and labour market policies of EU-countries on the socio-economic integration of first and second generation immigrants from different countries of origin. European University Institute Working Papers 2007(19)

Gans, H.J. (1992). Second- generation decline: Scenarios for the Economic and Ethnic Futures of the post-1965 American Immigrants. Ethnic and Racial Studies 15(2), 173-192

Greenman, E. & Xie, Y. (2005). Segmented Assimilation Theory: A Reformulation and Empirical Test. Ann Arbor: University of Michigan, Population Studies Center

Haller, W., Lynch, S.M. & Portes, A. (2011). Dreams Fulfilled, Dreams Shattered: Determinants of Segmented Assimilation in the Second Generation. Social Forces 89(3), 733-762

Hammarstedt, M. (2009). Intergenerational Mobility and the Earnings Position of First-, Second-, and Third-Generation Immigrants. Kyklos 62(2), 275–292

Heath, A.F. (2009). The Labour Market Integration of the Children of Immigrants. Oxford: Nuffield College, Oxford University

Heath, AF (2010), "Main Determinants of Education and Labour Market Outcomes", in OECD (2010) Equal Opportunities? The Labour Market Integration of the Children of Immigrants, OECD Publishing, Paris, pp.115-127.

Heath, A.F. & Cheung, S.Y. (2007). Unequal Chances: Ethnic Minorities in Western Labour Markets. Oxford: Oxford University Press

Heath, A.F., Kilpi, E. & Rothon, C. (2008). The Second Generation in Western Europe: Education, Unemployment and Occupational Attainment. Annual Review of Sociology 34, 211-235

Herzog-Punzenberger, B. (2003). Ethnic Segmentation in School and Labor Market: 40 Year Legacy of Austrian Guestworker Policy. International Migration Review 37(4), 1120-1144

Husted, L., Nielsen, H.S., Rosholm, M. & Smith, N. (2003). The School-to-Work Transition of 2nd Generation Immigrants in Denmark. Journal of Population Economics 16(4), 755-786

Kahanec, M. and Zacieva, A. (2009), "Labor market outcomes of immigrants and non-citizens in the EU: an East-West comparison", *International Journal of Manpower*, Vol. 30 No. 1, pp. 97-115

Kalter, F. & Kogan, I. (2006), "Ethnic Inequalities at the Transition from School to Work in Belgium and Spain: Discrimination or Self-Exclusion?", Research in Social Stratification and Mobility, vol. 24, pp. 259-74.

Kasinitz, P., Mollenkopf, J.H. Tran, V.C & Waters, M.C. (2010). Segmented assimilation revisited: types of acculturation and socioeconomic mobility in young adulthood. Ethnic and Racial Studies 33(7), 1168-1193

Liebig, T. and S. Widmaier (2010), "Overview - Children of Immigrants in the Labour Markets of OECD and EU Countries", in OECD (ed.), Equal Opportunities? The Labour Market Integration of the Children of Immigrants, OECD Publishing, Paris.

MacDonald, J.S. & MacDonald, L.D. (1962). Chain Migration, Ethnic Neighborhood Formation and Social Networks. Social Research 29, 433-448

Meurs, D. Pailhé, A. & Simon, P. (2006). The Persistence of Intergenerational Inequalities Linked to Immigration: Labour Market Outcomes for Immigrants and Their Descendants in France. Population 61(5/6), 645-682

Martens A. Ouali, N., Van de maele, M., Vertommen, S.,Dryon, P. & Verhoeven, H. (2005), Etnische discriminatie op de arbeidsmarkt in het Brusselse Hoofdstedelijk Gewest,KUL/ULB, Leuven/Brussel.

Neels, K. (2001), "Education and the transition to employment: young Turkish and Moroccan adults in Belgium", in Lestaeghe, R. (Ed.), *Communities and generations: Turkish and Moroccan populations in Belgium*, NIDI-CBGS, Brussel, pp. 243-279.

Neumark, D (1988), "Employers' discriminatory behavior and the estimation of wage discrimination", *Journal of Human Resources,* Vol. 23 No. 3, pp. 279-295.

Nordin, M. & Rooth, D-O (2009). The Ethnic Employment and Income Gap in Sweden: Is Skill or Labor Market Discrimination the Explanation? Scandinavian Journal of Economics 111(3), 487–510

Oaxaca, R. (1973), "Male-female wage differentials in urban labor markets", International Economic Review, Vol. 14 No. 3, pp. 693-709.

OECD (2010), Equal Opportunities? The Labour Market Integration of the Children of Immigrants, OECD Publishing, Paris.

Perlmann & Waldinger (1997). Second Generation Decline? Children of Immigrants, Past and Present, A Reconsideration. International Migration Review 31(4), 893-922

Phalet, K. & Heath, A. (2010). From Ethnic Boundaries to Ethnic Penalties: Urban Economies and the Turkish Second Generation. American Behavioral Scientist, 53(12), 1824-1850

Portes, A. & Zhou, M. (1993). The New Second Generation: Segmented Assimilation and its Variants among post-1965 Youth. Annals of the American Academy of Political and Social Science (530), 74-98

Simon, P. (2003). France and the Unknown Second Generation. International Migration Review 37(4), 1091-1119

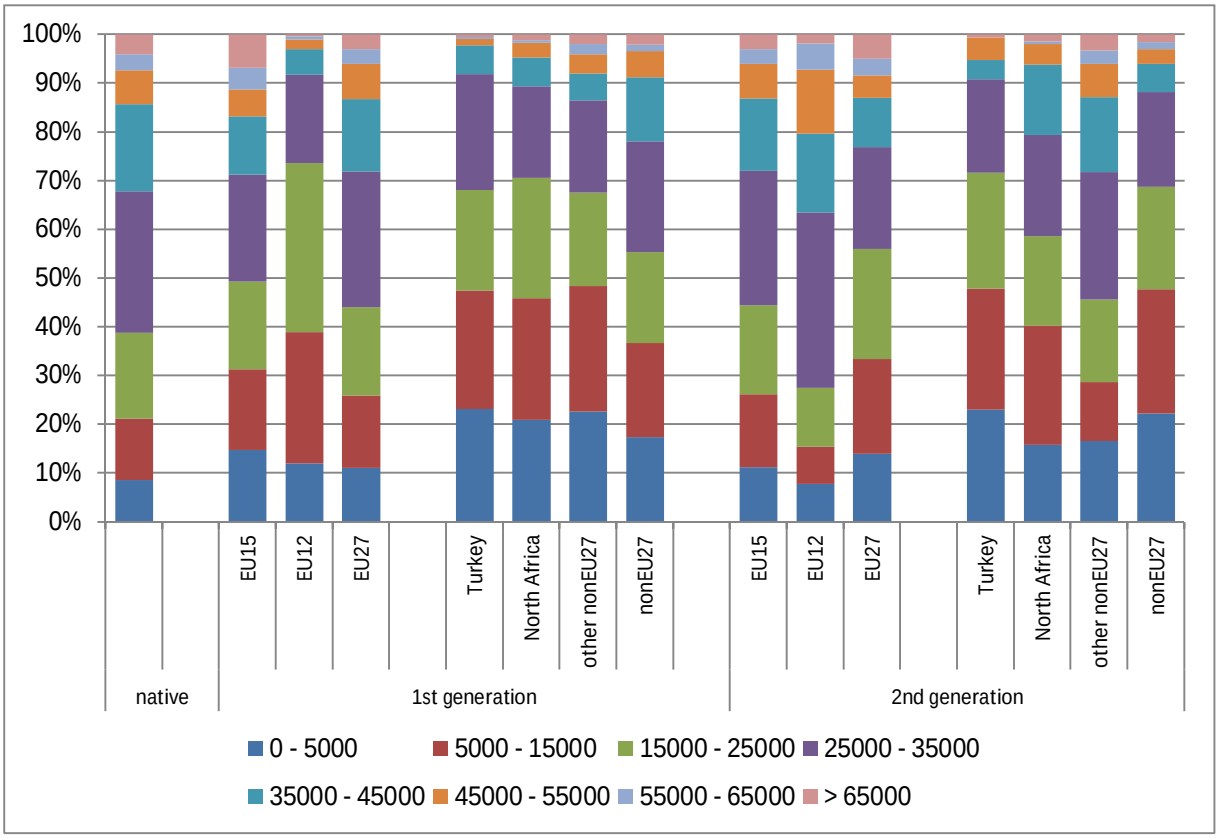
Tu, J. (2010). Explaining the Labour Market Outcomes of First, Second and Third Generation Immigrants in Canada. Bonn: IZA

Worbs, S. (2003). The Second Generation in Germany: Between School and Labor Market. International Migration Review 37(4), 1011-1038

Zhou, M. (1997). Segmented Assimilation: Issues, Controversies and Recent Research on the New Second Generation. International Migration Review 31(4), 975-1008

Annex 1: Additional Figures and Tables

Figure A.1.1: Gross earned income wage earners Belgian population by origin and generation, 20-44 years, excluding students, 2011



Source: DWH, 2012

Table A.1.1: Share (%) of different groups of non-EU27 immigrants, 20-44 years (excl. students), Belgium, 2008-2012

	1st generation					2nd generation				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Turkey	14.8	13.9	13.5	12.5	12.5	17.5	17.8	19.0	20.0	16.9
North Africa	30.9	33.0	31.4	32.4	28.9	44.0	43.3	42.5	43.0	45.9
Central and Eastern Europe	19.4	20.0	18.4	19.2	20.9	22.2	23.4	23.0	23.5	22.4
Central and Southern Africa	12.3	11.5	12.4	11.8	14.4	3.7	3.5	2.6	1.8	2.9
Northern America	1.2	1.2	2.0	1.3	1.3	0.0	0.1	0.0	0.0	0.1
Latin America	5.1	5.2	5.1	5.9	5.2	1.3	0.9	1.4	1.4	1.4
Asia	15.9	15.0	16.9	16.7	16.8	4.0	3.9	4.4	3.9	4.2
Other	0.3	0.2	0.2	0.1	0.1	7.3	7.2	7.2	6.3	6.3
Total	100	100	100	100	100	100	100	100	100	100

Source: LFS & DWH, 2008-2012

Table A.1.2: Employment rate of natives and immigrants, comparison of data sources

	natives	**1st gen**		**2nd gen**	
		EU27	**nonEU27**	**EU27**	**nonEU27**
LFS *ad hoc* 2008	87.6	80.0	58.4	80.7	57.9
LFS - DWH AM&SB 2008	87.0	77.5	55.6	80.4	63.5
LFS - DWH AM&SB 2012	85.3	76.5	53.0	78.8	68.1

Table A.1.3: Activity, employment and unemployment rate by origin and generation, 20-44 years, excluding students, Belgium, 2008-2012

a) Men

	Activity rate (%)					Employment rate (%)					Unemployment rate (%)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Natives	95.2	95.0	94.7	93.7	93.7	90.6	89.2	88.5	88.7	87.9	4.8	6.1	6.6	5.3	6.1
1st generation															
EU27	93.2	93.5	91.8	91.9	90.3	86.7	84.8	83.0	83.7	80.6	7.0	9.3	9.6	8.9	10.8
EU15	93.2	93.7	91.4	92.5	90.7	86.8	85.6	84.4	85.4	82.6	6.9	8.7	7.6	7.7	9.0
EU12	93.4	92.9	92.8	90.5	89.4	86.7	81.8	78.5	79.6	75.7	7.2	12.0	15.4	12.1	15.3
Non-EU27	88.1	86.6	86.3	83.3	83.7	70.1	66.9	66.7	65.7	64.8	20.4	22.7	22.6	21.1	22.5
Turkey	86.8	83.3	87.1	80.8	86.1	71.4	64.1	71.7	65.2	74.0	17.7	23.1	17.7	19.3	14.1
North Africa	88.1	89.0	87.7	87.6	84.2	66.8	68.4	65.3	66.1	64.8	24.2	23.1	25.6	24.5	23.0
Other non-EU27	88.5	85.9	85.1	81.0	82.7	72.1	66.7	66.3	65.5	62.5	18.5	22.3	22.1	19.1	24.4
2nd generation															
EU27	93.1	91.1	92.0	90.2	90.7	84.3	80.6	81.8	81.2	82.1	9.5	11.5	11.1	10.0	9.4
EU15	93.0	91.3	91.9	90.2	90.6	84.3	80.8	81.8	81.1	81.8	9.4	11.5	11.0	10.2	9.7
EU12	96.0	84.0	94.4	89.8	94.3	82.8	73.7	82.4	85.0	94.3	13.7	12.3	12.7	5.4	0.0
Non-EU27	88.0	86.0	89.4	87.4	87.1	70.5	66.6	71.5	70.1	73.4	19.8	22.6	20.0	19.8	15.8
Turkey	86.2	86.9	91.1	87.0	86.3	73.4	63.1	76.6	71.1	75.6	14.9	27.5	15.9	18.2	12.4
North Africa	87.8	85.9	88.5	86.3	88.0	62.8	60.0	64.1	61.1	70.8	28.5	30.2	27.7	29.2	19.6
Other non-EU27	89.0	85.6	89.5	88.8	86.4	77.4	74.9	76.9	79.0	75.5	13.1	12.5	14.1	11.0	12.7
Total	95.2	95.0	94.7	93.7	93.7	90.6	89.2	88.5	88.7	87.9	4.8	6.1	6.6	5.3	6.1

Source: LFS & DWH, 2008-2012

b) Women

	Activity rate (%)					Employment rate (%)					Unemployment rate (%)				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Natives	88.8	88.8	89.4	87.9	88.1	83.6	83.2	83.7	83.3	83.1	5.8	6.3	6.4	5.1	5.7
1st generation															
EU27	76.3	77.2	77.7	79.9	79.4	68.7	68.7	69.8	72.4	71.8	10.0	11.0	10.2	9.4	9.6
EU15	79.5	76.7	79.0	81.5	79.2	72.5	69.4	71.7	74.2	72.0	8.8	9.6	9.3	9.0	9.0
EU12	63.5	78.5	74.5	76.4	79.9	53.2	66.7	65.4	68.4	71.3	16.3	15.1	12.3	10.5	10.7
Non-EU27	55.5	55.9	58.3	52.3	55.1	43.2	42.9	42.9	40.2	42.1	22.2	23.4	26.3	23.1	23.5
Turkey	41.1	40.8	47.4	36.9	43.1	33.2	26.8	37.2	27.6	33.8	19.2	34.3	21.6	25.1	21.8
North Africa	42.9	42.3	45.9	40.6	44.3	30.3	28.9	30.4	27.6	31.2	29.2	31.7	33.8	32.0	29.6
Other non-EU27	64.6	66.3	66.8	61.7	61.7	51.4	53.6	50.5	49.5	48.2	20.4	19.2	24.4	19.8	21.9
2nd generation															
EU27	84.0	83.7	84.1	84.2	83.9	74.8	74.1	74.0	76.0	74.9	11.0	11.5	12.0	9.7	10.7
EU15	84.1	83.6	84.1	83.8	83.9	74.8	74.0	74.1	75.8	74.9	11.1	11.5	11.9	9.6	10.7
EU12	81.3	85.2	84.3	96.5	83.1	73.8	74.6	69.8	83.5	75.7	9.3	12.4	17.2	13.5	8.9
Non-EU27	74.3	74.8	80.1	75.8	76.4	57.1	57.7	61.4	60.0	62.8	23.2	22.8	23.3	20.9	17.8
Turkey	65.8	65.6	75.0	69.5	67.3	45.8	49.4	58.0	55.1	52.1	30.5	24.7	22.6	20.8	22.6
North Africa	68.9	69.4	78.1	71.2	72.6	46.9	48.6	50.6	51.7	55.4	32.0	29.9	35.3	27.4	23.7
Other non-EU27	84.6	85.5	85.1	85.3	85.2	74.4	72.5	75.9	73.5	76.8	12.0	15.2	10.8	13.9	9.8
Total	88.8	88.8	89.4	87.9	88.1	83.6	83.2	83.7	83.3	83.1	5.8	6.3	6.4	5.1	5.7

Source: LFS & DWH, 2008-2012

Annex 2: Probit regressions

A2.1: Probit regression, ILO employment probability, natives, 2012

```
Probit regression                                 Number of obs   =      19372
                                                  LR chi2(10)     =    2209.11
                                                  Prob > chi2     =     0.0000
Log likelihood = -6970.9098                       Pseudo R2       =     0.1368

------------------------------------------------------------------------------
   employed_d |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
          age |   .0152426   .0020225     7.54   0.000     .0112785    .0192067
          sex |   .3881531   .0249593    15.55   0.000     .3392339    .4370724
      married |   .0604306   .0318462     1.90   0.058    -.0019868     .122848
hhnbpers_wa_1 |  -.3797216   .0323796   -11.73   0.000    -.4431845   -.3162587
hhnbpers_wa_3 |  -.3056069   .0372858    -8.20   0.000    -.3786858    -.232528
      hhwchld |   .0496021   .0281452     1.76   0.078    -.0055616    .1047657
       educ_l |  -.6820935   .0304139   -22.43   0.000    -.7417036   -.6224834
       educ_h |   .4468903   .0282627    15.81   0.000     .3914964    .5022842
      reg_fle |   .4328497   .0544631     7.95   0.000      .326104    .5395954
      reg_wal |   .0526049   .0544557     0.97   0.334    -.0541264    .1593362
        _cons |   .1984298    .084271     2.35   0.019     .0332616    .3635979
------------------------------------------------------------------------------
```

A2.2: Probit regression, ILO employment probability, first generation EU15, 2012

```
Probit regression                                 Number of obs   =       1482
                                                  LR chi2(10)     =     106.59
                                                  Prob > chi2     =     0.0000
Log likelihood = -727.53221                       Pseudo R2       =     0.0683

------------------------------------------------------------------------------
   employed_d |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
          age |   .0122894    .006259     1.96   0.050      .000022    .0245568
          sex |   .4007987   .0783303     5.12   0.000     .2472741    .5543233
      married |   .0161242   .0921652     0.17   0.861    -.1645163    .1967647
hhnbpers_wa_1 |  -.1932369   .0990968    -1.95   0.051    -.3874631    .0009893
hhnbpers_wa_3 |  -.1189714   .1420037    -0.84   0.402    -.3972936    .1593507
      hhwchld |   .0386167    .090996     0.42   0.671    -.1397323    .2169656
       educ_l |  -.2798686   .1019425    -2.75   0.006    -.4796723   -.0800649
       educ_h |   .4934726   .0904184     5.46   0.000     .3162559    .6706894
      reg_fle |   .2522654   .1010958     2.50   0.013     .0541212    .4504096
      reg_wal |   .1504332   .0932631     1.61   0.107    -.0323592    .3332256
        _cons |  -.0701464   .2190032    -0.32   0.749    -.4993849     .359092
------------------------------------------------------------------------------
```

A2.3: Probit regression, ILO employment probability, first generation EU12, 2012

```
Probit regression                                 Number of obs   =        606
                                                  LR chi2(10)     =      62.46
                                                  Prob > chi2     =     0.0000
Log likelihood = -323.58812                       Pseudo R2       =     0.0880

------------------------------------------------------------------------------
   employed_d |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
          age |   .0147106   .0095603     1.54   0.124    -.0040272    .0334483
          sex |   .2988214   .1220604     2.45   0.014     .0595875    .5380554
      married |  -.0132105   .1368004    -0.10   0.923    -.2813344    .2549135
hhnbpers_wa_1 |  -.0264521   .1522673    -0.17   0.862    -.3248906    .2719863
hhnbpers_wa_3 |  -.0764853    .190056    -0.40   0.687    -.4489882    .2960177
      hhwchld |  -.0644681   .1303201    -0.49   0.621    -.3198908    .1909546
       educ_l |  -.5984387   .1294693    -4.62   0.000     -.852194   -.3446835
       educ_h |   .4469311   .1550583     2.88   0.004     .1430223    .7508398
      reg_fle |   .3522991   .1324416     2.66   0.008     .0927184    .6118799
      reg_wal |   .0287171   .1627394     0.18   0.860    -.2902463    .3476805
        _cons |   .0522575   .3415887     0.15   0.878    -.6172441    .7217591
------------------------------------------------------------------------------
```

```
------------------------------------------------------------------------------
```

A2.4: Probit regression, ILO employment probability, first generation Turkey, 2012

```
Probit regression                                 Number of obs   =        416
                                                  LR chi2(10)     =      96.50
                                                  Prob > chi2     =     0.0000
Log likelihood = -238.36231                       Pseudo R2       =     0.1683

------------------------------------------------------------------------------
   employed_d |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
          age |   .0024013   .0114132     0.21   0.833    -.0199682    .0247708
          sex |   1.063927   .1383778     7.69   0.000     .7927116    1.335142
      married |  -.0669094   .2286204    -0.29   0.770    -.5149972    .3811784
hhnbpers_wa_1 |  -.2501947   .2443616    -1.02   0.306    -.7291345    .2287452
hhnbpers_wa_3 |  -.3554531   .2072487    -1.72   0.086     -.761653    .0507469
      hhwchld |   .1822561   .1910231     0.95   0.340    -.1921424    .5566545
       educ_l |  -.3298096   .1460583    -2.26   0.024    -.6160787   -.0435405
       educ_h |   .3031165   .2728983     1.11   0.267    -.2317543    .8379872
      reg_fle |   .0989186    .175563     0.56   0.573    -.2451785    .4430157
      reg_wal |  -.5011894   .1919137    -2.61   0.009    -.8773333   -.1250454
        _cons |  -.2496211   .4759154    -0.52   0.600    -1.182398     .683156
------------------------------------------------------------------------------
```

A2.5: Probit regression, ILO employment probability, first generation North Africa, 2012

```
Probit regression                                 Number of obs   =        994
                                                  LR chi2(10)     =     176.64
                                                  Prob > chi2     =     0.0000
Log likelihood = -600.01813                       Pseudo R2       =     0.1283

------------------------------------------------------------------------------
   employed_d |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
          age |   .0335225   .0075531     4.44   0.000     .0187187    .0483262
          sex |   .8196452    .088403     9.27   0.000     .6463784    .9929119
      married |  -.0714076    .123002    -0.58   0.562    -.3124871    .1696719
hhnbpers_wa_1 |  -.0565848   .1276531    -0.44   0.658    -.3067803    .1936108
hhnbpers_wa_3 |   .1540244   .1658419     0.93   0.353    -.1710196    .4790685
      hhwchld |   .0327778   .1092294     0.30   0.764    -.1813078    .2468634
       educ_l |  -.3853062   .0959781    -4.01   0.000    -.5734198   -.1971926
       educ_h |   .3406034   .1286891     2.65   0.008     .0883774    .5928294
      reg_fle |   .2686874   .1021039     2.63   0.009     .0685675    .4688073
      reg_wal |   .1754673   .1067273     1.64   0.100    -.0337144     .384649
        _cons |   -1.57825   .2784213    -5.67   0.000    -2.123946   -1.032554
------------------------------------------------------------------------------
```

A2.6: Probit regression, ILO employment probability, first generation other nonEU, 2012

```
Probit regression                                 Number of obs   =       2042
                                                  LR chi2(10)     =     169.57
                                                  Prob > chi2     =     0.0000
Log likelihood = -1320.2108                       Pseudo R2       =     0.0603

------------------------------------------------------------------------------
   employed_d |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
          age |   .0259307   .0047951     5.41   0.000     .0165325    .0353288
          sex |   .4106159   .0595773     6.89   0.000     .2938466    .5273852
      married |  -.0504567   .0679495    -0.74   0.458    -.1836353    .0827219
hhnbpers_wa_1 |  -.1681483   .0753275    -2.23   0.026    -.3157875    -.020509
hhnbpers_wa_3 |  -.1319804   .1051033    -1.26   0.209    -.3379791    .0740183
      hhwchld |    .099342   .0675058     1.47   0.141     -.032967     .231651
       educ_l |  -.2838311   .0691406    -4.11   0.000    -.4193442    -.148318
       educ_h |   .3008409   .0713801     4.21   0.000     .1609385    .4407433
      reg_fle |    .084027   .0689535     1.22   0.223    -.0511194    .2191733
      reg_wal |  -.0893009   .0732257    -1.22   0.223    -.2328206    .0542189
        _cons |   -.893699   .1739602    -5.14   0.000    -1.234655   -.5527432
------------------------------------------------------------------------------
```

A2.7: Probit regression, ILO employment probability, second generation EU15, 2012

```
Probit regression                                 Number of obs   =       2062
                                                  LR chi2(10)     =     279.50
                                                  Prob > chi2     =     0.0000
Log likelihood = -930.50703                       Pseudo R2       =     0.1306

------------------------------------------------------------------------------
   employed_d |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
          age |   .0179399   .0055369     3.24   0.001     .0070878     .028792
          sex |   .4360948   .0699844     6.23   0.000     .2989278    .5732618
      married |   .0224387   .0891421     0.25   0.801    -.1522766     .197154
hhnbpers_wa_1 |  -.5353379   .0866491    -6.18   0.000     -.705167   -.3655087
hhnbpers_wa_3 |  -.2030474   .1060396    -1.91   0.056    -.4108813    .0047865
      hhwchld |   .1495284   .0793339     1.88   0.059    -.0059632    .3050199
       educ_l |  -.4854546   .0803851    -6.04   0.000    -.6430066   -.3279027
       educ_h |   .5314465   .0819154     6.49   0.000     .3708953    .6919977
      reg_fle |   .4722665   .1220192     3.87   0.000     .2331133    .7114198
      reg_wal |   .0071582   .1056126     0.07   0.946    -.1998387     .214155
        _cons |  -.0775049   .2094794    -0.37   0.711     -.488077    .3330671
------------------------------------------------------------------------------
```

A2.8: Probit regression, ILO employment probability, second generation EU12, 2012

```
Probit regression                                 Number of obs   =         53
                                                  LR chi2(9)      =      16.13
                                                  Prob > chi2     =     0.0642
Log likelihood = -12.622036                       Pseudo R2       =     0.3898

------------------------------------------------------------------------------
   employed_d |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
          age |   .1173433   .0701458     1.67   0.094    -.0201399    .2548265
          sex |   1.682289   .7724008     2.18   0.029     .1684116    3.196167
      married |  -.2271792   .9740107    -0.23   0.816    -2.136205    1.681847
hhnbpers_wa_1 |  -1.131572    .960624    -1.18   0.239     -3.01436    .7512165
hhnbpers_wa_3 |  -.5194647   1.010101    -0.51   0.607    -2.499225    1.460296
      hhwchld |  -.8697491   .8209385    -1.06   0.289    -2.478759    .7392607
       educ_l |          0  (omitted)
       educ_h |   1.188557   .6567913     1.81   0.070    -.0987306    2.475844
      reg_fle |  -1.101363   .8518225    -1.29   0.196    -2.770904    .5681787
      reg_wal |   .2947978   .7840128     0.38   0.707    -1.241839    1.831435
        _cons |   -2.59266   2.192664    -1.18   0.237    -6.890203    1.704883
------------------------------------------------------------------------------
```

A2.9: Probit regression, ILO employment probability, second generation Turkey, 2012

```
Probit regression                                 Number of obs   =        272
                                                  LR chi2(10)     =      54.61
                                                  Prob > chi2     =     0.0000
Log likelihood = -149.29215                       Pseudo R2       =     0.1546

------------------------------------------------------------------------------
   employed_d |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
          age |   .0110106    .016798     0.66   0.512    -.0219129    .0439342
          sex |    .899019   .1830104     4.91   0.000     .5403253    1.257713
      married |   .2221025   .2335607     0.95   0.342    -.2356681     .679873
hhnbpers_wa_1 |  -.1419493   .2644316    -0.54   0.591    -.6602258    .3763271
hhnbpers_wa_3 |   .3416085   .2713001     1.26   0.208     -.19013     .873347
      hhwchld |    .199028   .2035501     0.98   0.328    -.1999229    .5979788
       educ_l |   -.662886   .1898995    -3.49   0.000    -1.035082   -.2906899
       educ_h |   .5324992   .2831636     1.88   0.060    -.0224912     1.08749
      reg_fle |   .3911352   .2301501     1.70   0.089    -.0599507    .8422211
      reg_wal |  -.0846564   .2631172    -0.32   0.748    -.6003566    .4310437
        _cons |  -.7109898   .5621342    -1.26   0.206    -1.812753    .3907731
------------------------------------------------------------------------------
```

A2.10: Probit regression, ILO employment probability, second generation North Afrika, 2012

```
Probit regression                                 Number of obs   =        734
                                                  LR chi2(10)     =      94.60
                                                  Prob > chi2     =     0.0000
Log likelihood = -438.15855                       Pseudo R2       =     0.0974

------------------------------------------------------------------------------
   employed_d |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
          age |   .0190501   .0091455     2.08   0.037     .0011253    .0369748
          sex |   .5040544   .1053668     4.78   0.000     .2975392    .7105696
      married |  -.1056945   .1350555    -0.78   0.434    -.3703984    .1590094
hhnbpers_wa_1 |  -.2259781   .1459422    -1.55   0.122    -.5120195    .0600633
hhnbpers_wa_3 |  -.0123533   .1488013    -0.08   0.934    -.3039985    .2792918
      hhwchld |  -.0907299   .1212177    -0.75   0.454    -.3283122    .1468523
       educ_l |  -.4605693   .1151148    -4.00   0.000    -.6861901   -.2349486
       educ_h |   .6017138    .135339     4.45   0.000     .3364541    .8669734
      reg_fle |   .3101914   .1222335     2.54   0.011     .0706181    .5497647
      reg_wal |   .0262517   .1276804     0.21   0.837    -.2239974    .2765008
        _cons |  -.4091773   .2963139    -1.38   0.167    -.9899419    .1715873
------------------------------------------------------------------------------
```

A2.11: Probit regression, ILO employment probability, second generation other nonEU, 2012

```
Probit regression                                 Number of obs   =        658
                                                  LR chi2(10)     =      96.88
                                                  Prob > chi2     =     0.0000
Log likelihood = -316.54975                       Pseudo R2       =     0.1327

------------------------------------------------------------------------------
   employed_d |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
          age |   .0370783   .0112073     3.31   0.001     .0151124    .0590441
          sex |   .2526298    .121373     2.08   0.037      .014743    .4905165
      married |  -.1114596   .1575474    -0.71   0.479    -.4202469    .1973277
hhnbpers_wa_1 |  -.2980588   .1524234    -1.96   0.051    -.5968031    .0006855
hhnbpers_wa_3 |  -.0840694   .1677369    -0.50   0.616    -.4128276    .2446888
      hhwchld |    .035828   .1404869     0.26   0.799    -.2395213    .3111774
       educ_l |  -.6516466   .1664521    -3.91   0.000    -.9778867   -.3254065
       educ_h |   .5259806   .1319896     3.99   0.000     .2672859    .7846754
      reg_fle |   .6136879   .1589806     3.86   0.000     .3020917    .9252841
      reg_wal |   .3798762   .1390829     2.73   0.006     .1072787    .6524737
        _cons |  -.9283474   .3486527    -2.66   0.008    -1.611694   -.2450006
------------------------------------------------------------------------------
```

NATIONAL BANK OF BELGIUM - WORKING PAPERS SERIES

The Working Papers are available on the website of the Bank: http://www.nbb.be.

241. "The Influence of the Taylor rule on US monetary policy", by P. Ilbas, Ø. Røisland and T. Sveen, *Research series*, January 2013.
242. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2011", by C. Mathys, *Document series,* July 2013.
243. "The fragility of two monetary regimes: The European Monetary System and the Eurozone", by P. De Grauwe and Y. Ji, *Research series*, October 2013.
244. "Funding liquidity, market liquidity and TED spread: A two-regime model", by K. Boudt, E. C.S. Paulus and D. W.R. Rosenthal, *Research series*, November 2013.
245. "Robustifying optimal monetary policy using simple rules as cross-checks", by P. Ilbas, Ø. Røisland and T. Sveen, *Research series*, November 2013.
246. "Household and firm leverage, capital flows and monetary policy in a small open economy", by M. Pirovano, *Research series*, November 2013.
247. "The BIS and the Latin American debt crisis of the 1980s", by P. Clement and I. Maes, *Research series*, December 2013.
248. "The importance of the right amount of business resources for firms' exporting behavior", by I. Paeleman, C. Fuss and T. Vanacker, *Research series*, December 2013.
249. "The role of financial frictions during the crisis: An estimated DSGE model", by R. Merola, *Research series*, December 2013.
250. "Bank reactions after capital shortfalls", by C. Kok and G. Schepens, *Research series*, December 2013.
251. "Why firms avoid cutting wages: Survey evidence from European firms", by P. Du Caju, T. Kosma, M. Lawless, J. Messina and T. Rõõm, *Research series*, December 2013.
252. "The distribution of debt across euro area countries: The role of individual characteristics, institutions and credit conditions", by O. Bover, J. M. Casado, S. Costa, Ph. Du Caju, Y. McCarthy, E. Sierminska, P. Tzamourani, E. Villanueva and T. Zavadil, *Research series*, December 2013.
253. "Micro-based evidence of EU competitiveness: The CompNet database", by CompNet Task Force, *Research series*, March 2014.
254. "Information in the yield curve: A macro-finance approach", by H. Dewachter, L. Iania and M. Lyrio, *Research series*, March 2014.
255. "The Single supervisory mechanism or 'SSM', part one of the Banking Union", by E. Wymeersch, *Research series*, April 2014.
256. "Nowcasting Belgium", by D. de Antonio Liedo, *Research series*, April 2014.
257. "Human capital, firm capabilities and productivity growth", by I. Van Beveren and S. Vanormelingen, *Research series*, May 2014.
258. "Monetary and macroprudential policies in an estimated model with financial intermediation", by P. Gelain and P. Ilbas, *Research series*, May 2014.
259. "A macro-financial analysis of the euro area sovereign bond market", by H. Dewachter, L. Iania, M. Lyrio and M. de Sola Perea, *Research series*, June 2014.
260. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2012", by C. Mathys, *Document series*, June 2014.
261. "European competitiveness: A semi-parametric stochastic metafrontier analysis at the firm level", by M. Dumont, B. Merlevede, G. Rayp and M. Verschelde, *Document series*, July 2014.
262. "Employment, hours and optimal monetary policy", by M. Dossche, V. Lewis and C. Poilly, *Research series*, September 2014.
263. "On the conjugacy of off-line and on-line Sequential Monte Carlo Samplers", by A. Dufays, *Research series*, September 2014.
264. "The effects of state aid on Total Factor Productivity growth", by P. Van Cayseele, J. Konings and I. Sergant, *Research series*, October 2014.
265. "Assessing the role of ageing, feminising and better-educated workforces on TFP growth", by A. Ariu and V. Vandenberghe, *Research series*, October 2014.
266. "A constrained nonparametric regression analysis of factor-biased technical change and TFP growth at the firm level", by M. Verschelde, M. Dumont, B. Merlevede and G. Rayp, *Research series*, October 2014.
267. "Market imperfections, skills and total factor productivity: Firm-level evidence on Belgium and the Netherlands", by S. Dobbelaere and M. Vancauteren, *Research series*, October 2014.
268. "Import competition, productivity and multi-product firms", by E. Dhyne, A. Petrin, V. Smeets and F. Warzynski, *Research series*, October 2014.
269. "International competition and firm performance: Evidence from Belgium", by J. De Loecker, C. Fuss and J. Van Biesebroeck, *Research series*, October 2014.

270. “Acquisitions, productivity, and profitability: Evidence from the Japanese cotton spinning industry”, by S. Braguinsky, A. Ohyama, T. Okazaki and C. Syverson, *Research series*, October 2014.
271. “Total factor productivity: Lessons from the past and directions for the future”, by B. van Ark, *Research series*, October 2014.
272. “Outward Foreign Direct Investment and domestic performance: In search of a causal link”, by E. Dhyne and S. S. Guerin, *Research series*, October 2014.
273. “Economic importance of air transport and airport activities in Belgium - Report 2012”, by F. Van Nieuwenhove, *Document series*, November 2014.
274. “Fiscal policy and TFP in the OECD: Measuring direct and indirect effects”, by G. Everaert F. Heylen and R. Schoonackers, *Research series*, November 2014.
275. “Effectiveness and transmission of the ECB's balance sheet policies”, by J. Boeckx, M. Dossche and G. Peersman, *Research series*, December 2014.
276. “How do exporters react to changes in cost competitiveness?”, by S. Decramer, C. Fuss and J. Konings, *Research series*, January 2015.
277. “Optimal monetary policy response to endogenous oil price fluctuations”, by A. Stevens, *Research series*, January 2015.
278. “Comparing fiscal multipliers across models and countries in Europe”, by J. Kilponen, M. Pisani, S. Schmidt, V. Corbo, T. Hledik, J. Hollmayr, S. Hurtado, P. Júlio, D. Kulikov, M. Lemoine, M. Lozej, H. Lundvall, J. R. Maria, B. Micallef, D. Papageorgiou, J. Rysanek, D. Sideris, C. Thomas and G. de Walque, *Research series*, March 2015.
279. “Assessing European competitiveness: The new CompNet micro-based database”, by P. Lopez-Garcia, F. di Mauro and the CompNet Task Force, *Research series*, April 2015.
280. “FloGARCH: Realizing long memory and asymmetries in returns volatility”, by H. Vander Elst, *Research series*, April 2015.
281. “Does education raise productivity and wages equally? The moderating roles of age, gender and industry”, by F. Rycx, Y. Saks and I. Tojerow, *Research series,* April 2015.
282. “Assessing European firms’ exports and productivity distributions: The CompNet trade module”, by A. Berthou, E. Dhyne, M. Bugamelli, A.-M. Cazacu, C.-V. Demian, P. Harasztosi, T. Lalinsky, J. Merikül, F. Oropallo and A. C. Soares, *Research series,* May 2015.
283. “Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2013”, by Frank Van Nieuwenhove, *Document series*, June 2015.
284. “Crisis-proof services: Why trade in services did not suffer during the 2008-2009 collapse”, by A. Ariu, *Research series,* July 2015.
285. “The labour market position of second-generation immigrants in Belgium”, by V. Corluy, J. Haemels, I. Marx and G. Verbist, *Research series*, September 2015.

National Bank of Belgium
Limited liability company
RLP Brussels – Company's number: 0203.201.340
Registered office: boulevard de Berlaimont 14 – BE-1000 Brussels
www.nbb.be

Editor

Jan Smets
Governor of the National Bank of Belgium

Layout: Analysis and Research Group
Cover: NBB AG – Prepress & Image

Published in September 2015