

Can education bridge the gap? Education and the employment position of immigrants in Belgium

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ABSTRACT

The employment rates of non-EU immigrants compared to natives in Belgium continue to be low. In this chapter we examine whether differences in educational attainments offer an adequate explanation for these persisting labour market disadvantages. We decompose the gap in labour market outcomes between immigrants and natives, using the Blinder-Oaxaca decomposition method. The decomposition shows that for EU born immigrants three quarters of the gap can be attributed to differences in the observed, socio-economic characteristics between the two populations. For non-EU born immigrants, the differences in observed characteristics with natives can account for around one third of the gap. Although the explanatory power of our model remains limited for this group, substantial increases in the effect of observed characteristics are found over the last fifteen years. A detailed decomposition shows that lower educational levels, larger families and diverse regional settlement can, at least partly, explain the lower labour market attachment of non-EU born immigrants. Over the period in focus, the impact of differences in educational level between immigrants and natives has significantly grown, indicating a declining socio-economic profile of more recent immigrants as compared with natives.

Keywords: Employment rate gap, education, immigrants, Belgium

1 INTRODUCTION

In many OECD countries, the socio-economic position of non-Western migrants is unfavourable: they have lower employment rates, figure more prominently in unemployment and inactivity statistics, and more frequently face income poverty. In Belgium, the socio-economic position of non-EU immigrants is particularly unfavourable (Eurostat, 2012; OECD, 2012). The employment rate of non-Western migrants is with 55% in 2008 very low, and the employment gap with natives is the largest of all OECD countries. This study aims to contribute to the scarce understanding of Belgium's exceptional position concerning the socio-economic position of immigrants. Belgium seems to face a cocktail of negative factors that render it the place with the worst employment gap between immigrants and natives. The factors contributing to this situation and their relative weight have hardly been studied. This study attempts to identify some of the factors, with a focus on educational attainment. This focus is warranted, given the salience of human capital in explaining the employment gap between immigrants and natives both in the international literature and in the policy discourse in Belgium. Therefore, we investigate the relationship between education and employment probabilities of natives and immigrants in Belgium, focusing on the following questions.

First, to what extent can we explain the very low labour market performance of non-Western immigrants in Belgium by the educational profile of this group? We present the educational differences between natives and immigrants and how they explain the ethnic employment rate gap (composition effect). The second question explores the potential differences in 'return on education' that immigrants face: could it be that education pays off much less for immigrants due to other factors inhibiting access to the labour market (marginal effect)?

We differentiate our findings by gender and by old and new immigrant profiles. As we know that changes in the labour market position of natives are mainly female driven, can we find the gender dimension to be a crucial explaining factor of the ethnic employment rate gap in Belgium? And finally, is there a difference for 'old' and 'new' migrants, i.e. does longer residence lead to assimilation translating in better outcomes and, additionally, is gender relevant in this context?

Belgium's immigration history is similar to many Western European countries. Until the mid-seventies, immigration was mainly driven by demand in the mining and industry sector, that attracted low-skilled labour from mainly Italy (until the fifties), and Morocco and Turkey (in the sixties and seventies). Since then the character of both the labour market and of immigrants has changed considerably. In the process of deindustrialisation, the economy has shifted more towards services, with a higher demand for high-skilled labour. At the same time immigrants' profile also changed. Immigrants from non-Western countries now mainly enter Belgium through family reunion, marriage migration and asylum. These streams are far less labour-market oriented and their education profiles do not necessarily match with those demanded by the Belgian labour market. Still, these observations also apply to other western European countries. But, Belgium seems to fare worse than any of its peers. The contribution of this study then, lies in unveiling the importance of a crucial factor determining the employment chances of immigrants: education.

2 WHY (AND HOW) DOES EDUCATION MATTER FOR IMMIGRANTS' EMPLOYMENT OUTCOMES?

An increasing body of international literature investigates the relation between human capital and labour market integration of immigrants. Human capital theory assumes that investment in education is rewarded by improved labour market performance. The increased demand for a highly-educated workforce has raised the education premium and punishes the less skilled more severely (Katz & Autor, 1999; Baldwin & Beckstead, 2003). This evolution can have a negative impact on the labour market integration of immigrants if they are not able to follow this up-skilling trend. This rationale refers to 'the deficit thesis' (Veenman, 2001). It states that the underrepresentation of (non-EU) immigrants in employment is the result of their under-qualification and thus inability to compete with the higher educated native population. Heckmann (2011) argues that in contemporary American society the gap in labour market achievement is primarily due to gaps in skills. Also Belzil and Poinas (2010) report that the gap in access to permanent employment between natives and second generation immigrants in France, is nearly completely explained once both family background and educational attainment are controlled for. These findings are in sharp contrast with other studies that find that the supply side characteristics of the labour market are undoubtedly relevant but account only for a small part of the immigrant employment gap (Neels, 2001; Euwals et al. 2007; Baert and Cockx, 2013). Segmented assimilation theories indeed are less optimistic about the potential of education in explaining immigrants' weak labour market position. Immigrants face other inhibiting factors that depress their chances at securing jobs at par with the native population. While immigrants do have elaborate immigrant social networks, they lack social capital in the mainstream home country's labour market to secure jobs at their educational level (Reyneri, 2010). Social and cultural characteristics impinge on the relationship between educational credentials and labour market inclusion. This includes familiarity with local labour market conditions, understanding social codes, modes of interacting in achieving job search and network effects (Hiebert, 1997; Ferrer & Riddell, 2008). Moreover, ethnic differences might exist in economic preferences or expectations. For example, Constant et al. (2011) provide evidence (for Germany) on the less risk-averse preferences of immigrants, which may result in accepting a less suitable job in the short run (see also Filippin (2009) and Zacieva and Zimmerman (2010)). This effect plays far stronger for higher educated than for lower educated immigrants. Mastery of the host country language tends to be more important in high-skilled jobs. Highly educated immigrants can face persistent barriers to labour market integration (Büchel et al, 2005; Mattoo et al, 2008) and end up in jobs for which they are overqualified (Piracha & Vadean, 2012). As a result, the impact of education on labour market outcomes tends to be weaker for immigrants than for natives. Consequently, one might expect the relative return on education for (especially non-EU) immigrants to be lower than that for natives. Another hurdle is the discriminatory recruitment practices that makes it much harder for immigrants to achieve a stable job. These variables, negatively affecting immigrants' employment chances, are hard to control for in data analysis and have been referred to as an 'ethnic penalty' (Heath and Cheung, 2007).

In this context, the gender dimension is highly relevant. Today, women are entering the labour force in greater numbers and are staying employed longer over their life course, with narrowing gender employment gaps as a consequence (Eurostat, 2008). As their education profiles have become more similar, women have caught up with men. In younger age cohorts, the proportion of adults that completed tertiary education is now even consistently higher for women than for men in all EU countries. However, this catching-up effect may not play as strongly for immigrants. This may also be the case for the marginal return on education. These gender gaps have many causes, and there are

indications that they play in a different way for different origin groups (Bevelander, 2005). Among the different factors is the availability and affordability of child care, but also cultural differences regarding the position of women in the household division of paid and unpaid work (Fernandez and Fogli, 2005).

The impact of time of residence in the host country can go in two directions. Due to worldwide increases in educational levels, it can be expected that recent immigrants are higher educated than older groups (Kogan, 2011). On the other hand, the length of stay in the host country may have a positive impact on employment outcomes, as some of the barriers may be removed as time goes by (acquisition of host-country specific human capital, language skills, ...) (Chiswick, 1978). Then again, when the initial migration perspective is temporary, immigrants might invest only little in country-specific human capital (Kalter and Granato, 2007; Kogan, 2011). Hence, also 'older' immigrant cohorts may converge to a lower social position than expected (Dustman, 2000; Cortes, 2004). Because the recent immigrants' migration motives have probably a more permanent character due to family reasons, they might be more prone to invest in country-specific human capital.

3 EMPIRICAL EXPECTATIONS ON THE ROLE OF EDUCATION IN EXPLAINING THE BELGIAN EMPLOYMENT GAP

Until the mid-seventies, Belgian immigration policy targeted low-skilled immigrants for its booming industrial economy. During this period, Belgium initially recruited workers from Southern Europe and later also from non-European countries (mainly Morocco and Turkey). Their educational profile was very poor. As was the case with several Western European countries, the past two decades saw family formation and reunion as well as migration on humanitarian grounds take over from labour migration as the most important entry channels. This highly diverse inflow should also be reflected in immigrants' more diverse educational profiles, with higher shares of middle and highly educated immigrants (Reyneri, 2010). In all OECD countries the number of active age individuals with low education has substantially decreased over the past two decades. As documented in the different volumes of OECD's *Education at a Glance*, also in Belgium the share of the population that has attained at least secondary and tertiary education is substantially higher among the younger age cohorts (25 to 34 year old) than among those currently leaving the labour market. The annual average growth rate of upper secondary, resp. tertiary education degrees among the 25-64 year-old population between 1998 and 2008 amounted to 2.3%, resp., 3.1% (OECD, 2010). *We expect for Belgium that the education profiles of immigrants have improved and the employment gap with natives has reduced* (hypothesis 1).

3.1 NATIVES AND EU IMMIGRANTS

Next, we make a distinction between EU immigrants and non-EU immigrants. We expect that the employment gap between natives and EU migrants is smaller than the gap with non-EU immigrants as a) educational differences are smaller with educational levels of EU immigrants being higher than those of non-EU immigrants and degrees being mutually recognized, and b) as the return on education is higher with social capital being more similar than that of natives. Hence, *we expect the ethnic penalty for EU migrants to be very low* (hypothesis 2).

Third, we make a distinction between old and new EU immigrants. Old EU migrants are the poorly educated 'guest workers' of the industrial era, while new EU migrants are mobile EU migrants who make use of free movement in a largely (high) skilled knowledge economy. Hence, we expect that the education gap between natives and old EU migrants was much bigger in the past. *Today we*

expect the employment gap between natives and new EU immigrants to be much smaller (hypothesis 3).

3.2 NATIVES AND NON-EU IMMIGRANTS

Hypothesis 1 presumes that the employment gap between natives and immigrants decreased as the educational profile of immigrants has improved, with a higher share of middle and highly educated individuals among immigrants. Still we do not presume the entire gap to be eliminated. For non-EU immigrants we expect that educational differences that remain offer a substantial explanation for the employment gap that exists between natives and non-EU immigrants. We hypothesise that *considerably lower average education levels of immigrants compared to the native population, offer an important explanation for immigrants' worse labour market outcomes*. As international theoretical literature argues, we expect new non-EU immigrants to have less return on education and to face more hurdles on the road to employment. *We presume new non-EU immigrants to face a stronger ethnic penalty with lower returns on education than EU immigrants* (less social capital, language issues, discrimination, etc.). Moreover, as we expect the employment gap between natives and non-EU immigrants to become smaller, *we also expect that the explanatory force of education diminishes in absolute terms* (hypothesis 4).

d) We further distinguish between old and new non-EU immigrants and take into account the length of stay of immigrants in the host country. Even though old immigrants who migrated to do low-skilled and dirty work, had a longer presence in the country and hence could have achieved improved social capital to improve their situation, *we expect no improvement in old EU immigrants' employment gap as societal trends towards an extensive knowledge economy have disproportionately affected them*.

We expect that more recent groups of non-EU immigrants are *higher educated and have less educational differences with the native population*. This also means that education will lose part of its explanatory power to understand the employment gap between natives and non-EU immigrants. At the same time however, new non-EU immigrants' return on education will be worse because of their relatively limited country specific human capital. Moreover, because of increasing levels of tertiary education among natives, the competitive advantage of highly educated immigrants gradually decreases. On the other hand we suppose that the very negative effect of low education among new non-EU immigrants will become less negative. This trend fits in segmented assimilation theories with immigrants stuck in low-skilled employment, irrespective of their educational level (hypothesis 5).

e) Finally, we focus on gender differences and assume that *educational differences between native and immigrant women can explain more of the employment gap than educational differences between men do for men*. We presume that non-EU born women had a harder time keeping up with the strong up-skilling of native women over the recent decade. Moreover we also expect their return on education to play more negatively for (immigrant) women than for men, because of social-cultural differences in household organisation and values attached to female employment (hypothesis 6).

4 DATA AND METHODOLOGY

We use Belgian Labour Force Survey data which allow to study the relative position of immigrants over a longer time period. The dataset and the definitions are explained in section 4.1, while section 4.2 describes the statistical techniques we have used for our analysis.

4.1 THE BELGIAN LABOUR FORCE SURVEY

The Labour Force Survey (LFS) is an annual survey of 1 per cent of all Belgian individuals older than 15 years. This data source is appropriate for our analysis as it provides detailed information on education and labour market performance. The sample is large enough to distinguish between broad categories of immigrants. Another advantage of this dataset is that it offers a long time perspective: we cover a period of 12 years, namely from 1996 until 2008. We start in 1996 because from this year onwards a significant share of immigrants can be distinguished and we can identify their length of stay in the host country. The final year we consider is 2008, before the financial and economic crisis started to affect employment rates in Belgium¹.

Our analysis is performed on working-age individuals only, more specifically respondents aged 20 to 59 years old who are not in full-time education. Employment is defined according to the ILO definition (i.e. persons who during the reference week did any work for pay or profit for at least one hour, or were not working but had jobs from which they were temporarily absent). We identify immigrants by country of birth: somebody is considered to be an immigrant if his/her country of birth is not Belgium. Consequently, we can only look at first generation immigrants. We do not use the nationality criterion, as the liberal citizenship acquisition legislation in Belgium resulted in a substantial share of foreign-born Belgian nationals (for a study of the impact of citizenship acquisition on employment outcomes in Belgium, see Corluy et al. 2011). We distinguish between EU born and non-EU born immigrants. EU born only includes the EU15 member states prior to May 2004 (i.e. the so-called EU 'old' member states). We motivate this distinction partly for data reasons: prior to 2004 people originating from EU10 New Member States cannot be isolated from other non-EU27 countries. From 2004 onwards citizens of the EU10 New Member States were allowed to move freely within Europe. In practice however, due to additional labour market restrictions of the Belgian government, up until May 2009, they still needed a labour permit. Partly due to these transitional measures, the share of New Member State immigrants in our sample is rather limited². As we want to cover a broader time frame, with considerable new inflow of immigrants, substantial variation in employment rates and relevant policy changes, we opt to look at EU15 and non-EU15 population groups only. Although this broad classification might cover rather heterogeneous groups, more in depth analysis for recent years has shown that variation is mainly of the same magnitude within subgroups. This analysis does not allow us to disentangle cohort effects from the impact of the duration of stay. Therefore we have to assume that unobservable characteristics of immigrants do not change over time (Borjas, 1985, 1995). Ideally, longitudinal data are needed to evaluate a potential convergence process over time. In the absence of such data for Belgium, an analysis is carried out based on cross-sectional data and disentangling immigrant groups by duration of stay. We define a new immigrant as somebody who arrived in a period less than 10 years from the survey moment. Old immigrants are at least 10 years³ in Belgium.

¹ The analysis of the differential impact of the crisis of employment outcomes among natives and migrants is the topic of a follow-up study.

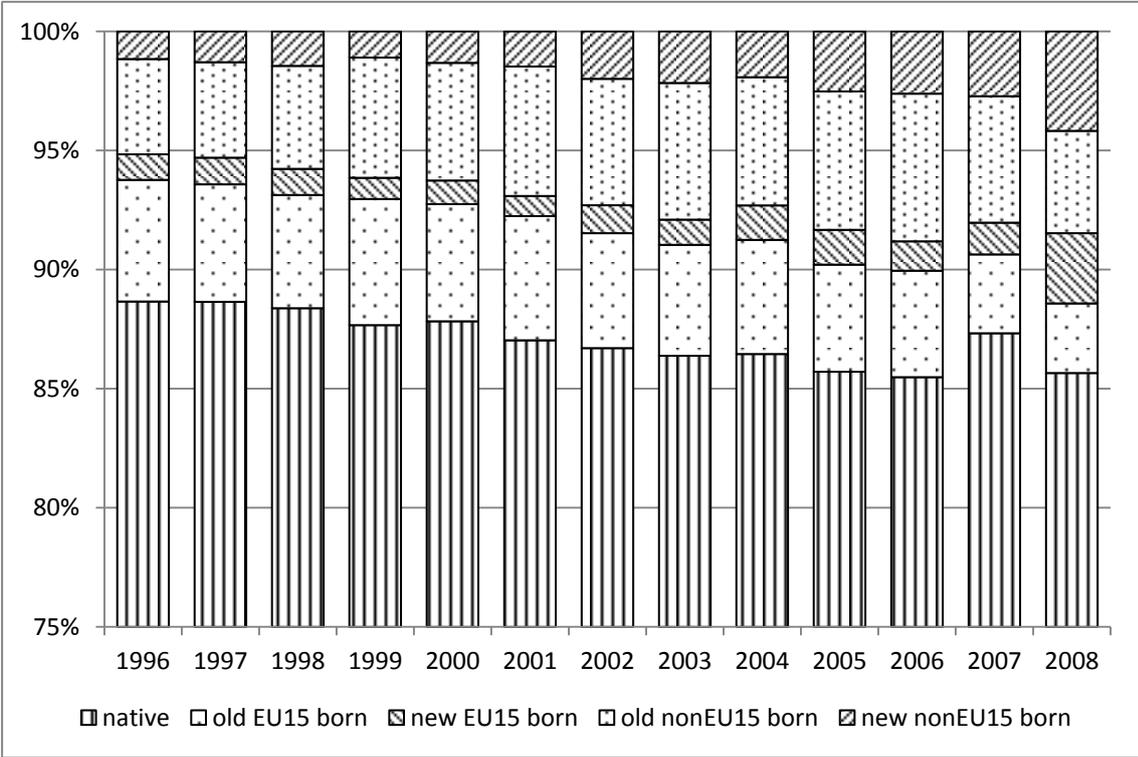
² Over the period 2004 – 2008 the share of EU10born immigrants equals respectively only 0.38 and 0.89 per cent of the entire working age population. Therefore we state that over this period, and before the formal free movement of workers of these countries, the impact of considering EU10 and non-EU15 as a homogeneous population group will only have tiny effects on the observed changes in labour market integration of the population 'non-EU25 born' immigrants.

³ We have taken this demarcation of 10 years because LFS prior to 2004 provides only rough intervals when an individual has migrated.

Figure 1 shows how the share of immigrants⁴ has considerably increased over the 12 year period. In 1996, just over 11 per cent of the 20-59 year population was foreign born. This population share increased to almost 15 per cent, because the share of non-EU born individuals doubled. Within both non-Belgian born origin groups the share of new immigrants is increasing, especially in the last years.

We distinguish three education levels in our analysis, using the International Standard Classification of Education (ISCED). An individual’s education level is labelled as low if s/he has not completed secondary education (I + II), as medium as the highest degree obtained is secondary education (vocational III or general IV), and high if the highest degree is tertiary education (V, VI and VII). We cannot know in which country the highest level of education was completed (Belgium or source country). We have tried to control for home country human capital investments by comparing the year of acquisition of the highest ISCED level with relevant period of residence. But also here the time frame does not allow a thorough analysis, because of the rather broad measurement of period of residence before 2005 (when the residence period is longer than 10 years we cannot distinguish the exact period of arrival).

FIGURE 1: SHARE OF EU BORN AND NON-EU BORN IMMIGRANTS IN WORKING AGE POPULATION OVER TIME, (TOTAL, NEW AND OLD IMMIGRANTS)



Source: own calculations based on LFS.

We use a set of control variables, notably age, sex, marital status, household structure and the region of residence. *Marital status* is represented as (official) cohabitation or marriage. *Household structure* accounts for the number of working age adults and the presence of children in the household of the respondent. *Age categories* (5 years intervals) are included to account for another demographic

⁴ Table A.1 and Table A.2 present the relevant numbers of observations by origin, gender and duration of residence.

effect relevant for labour market inclusion. In addition we control for *regional variation*, as the economic situation differs considerably in the three regions Flanders, Brussels and Wallonia.

4.2 METHODOLOGY

First we estimate the factors that affect the labour force position (employed versus non-employed) of immigrants and natives. We report the estimation results on labour market inclusion of natives and immigrants using a probit model. Since the probit coefficients do not offer an immediately intuitive interpretation, we 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. The marginal effects of dummy variables are calculated as the change in the predicted probability when moving from a value 0 to 1.

Further, we use the Blinder-Oaxaca (1973) decomposition method to decompose the gap in labour market outcomes between two populations. We estimate the gap for natives with EU born and non-EU born immigrants respectively. For a linear regression, the standard Blinder-Oaxaca decomposition of the native/immigrant gap in the mean employment rate Y can be expressed as:

$$\bar{Y}_N - \bar{Y}_I = (\bar{X}_N - \bar{X}_I)\hat{\beta}_N + \bar{X}_I(\hat{\beta}_N - \hat{\beta}_I) \quad (1)$$

Where subscript N denotes the native population, subscript I the immigrant population (EU born or non-EU born), \bar{X} is a row of mean values of the control variables and $\hat{\beta}$ is a vector of coefficient estimates. The first term of the equation (1) measures the gap due to differences in observed characteristics (the composition or ‘explained’ gap). The second term measures the unexplained gap due to differences in coefficients, or returns to characteristics (the coefficient, or ‘unexplained’ gap).

In non-linear models (such as probit), the conditional expectation $E(Y_i|X_i)$ differs from the linear prediction $X_i\hat{\beta}$. Therefore Bauer and Sinning (2008) re-write equation (1) to accommodate non-linear models:

$$\bar{Y}_N - \bar{Y}_I = [E_{\hat{\beta}_N}(Y_N|X_N) - E_{\hat{\beta}_N}(Y_I|X_I)] + [E_{\hat{\beta}_N}(Y_I|X_I) - E_{\hat{\beta}_I}(Y_I|X_I)] \quad (2)$$

Thus, the explained part covers both differences in observed variables (composition effect) as well as differences in coefficients. Consequently, 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:

$$\beta^* = \Omega\hat{\beta}_N + (I - \Omega)\hat{\beta}_I \quad (3)$$

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 (1973) proposed using either the coefficients for the majority group as the non-discriminatory basis ($\Omega = 1$) or the coefficients for the disadvantaged group ($\Omega = 0$). Reimers (1983) proposed using the mean coefficients ($\Omega = 0.5$), while Cotton (1988) proposed weighting the coefficients by group size. Neumark’s (1988) approach was to estimate a pooled model over both groups to obtain β^* .

In this article we apply the estimated coefficients of natives on the distribution of immigrants ($\Omega = 1$). 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; Bevelander, 2001).

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.

5 DIVERGING EMPLOYMENT AND EDUCATION PROFILES OF NATIVES AND IMMIGRANTS IN BELGIUM

5.1 EMPLOYMENT RATES

We start the test of our hypotheses with an overview of employment rates in Belgium. The overall employment rate in Belgium has increased from 70% in 1996 to 77% in 2008. Figure 2 shows that this upward trend does not only apply to the native working age population (from 72% in 1996 to almost 80% in 2008), but also to both EU born and non-EU born immigrants. The strongest increase took place among EU migrants, notably from 59% to 73%, substantially reducing the gaps with natives. Non-EU born immigrants improved their employment outcome from less than 50% to 56%, *but this was not enough to bridge the gap with natives*, which only marginally decreased over the 12 years in focus.

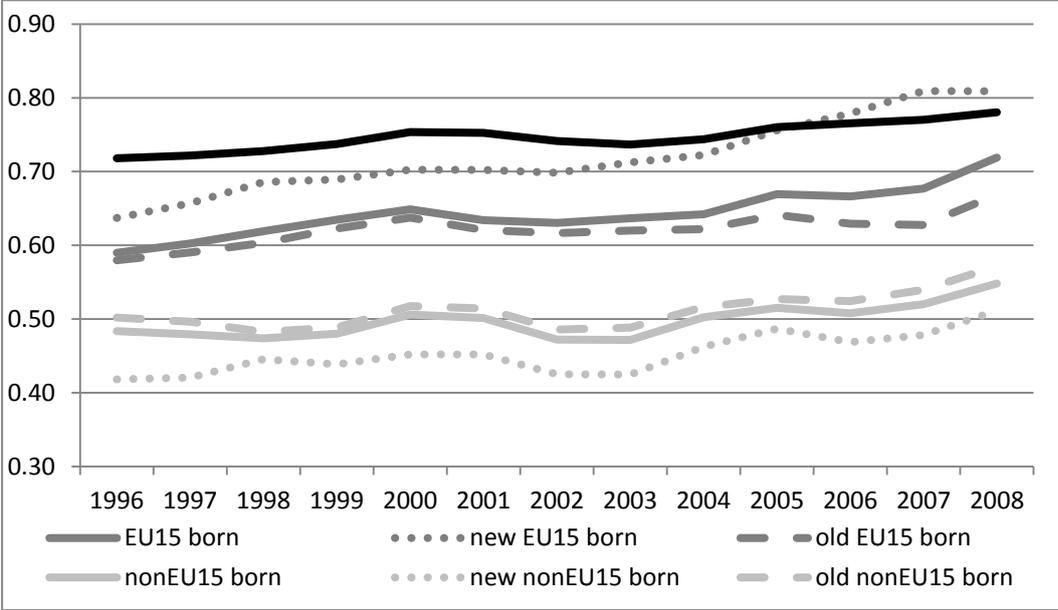
Interestingly, the employment pattern according to years since migration is different for EU and non-EU migrants. Recent EU-migrants perform markedly better than their 'old' counterparts. 'Old' EU migrants in Belgium came as 'guest workers' with the early labour migration waves of the 50s and 60s. In the meanwhile, they are part of the older generation, while the younger and highly competitive younger generation is mainly attracted by the knowledge economy and services. The *opposite picture* emerges among non-EU migrants: the newer arrived group has lower employment rates than the older non-EU 'guest workers', and this throughout the period considered. This finding is in line with international literature on long-term economic assimilation processes of non-EU immigrants due to several barriers to the labour market at arrival (Amuedo-Dorantes & De la Rica, 2007; Dustman & Frattini, 2011). Strictly speaking, new non-EU immigrants may also have characteristics that are different from the old migrants that make their ethnic penalty worse (a cohort effect). But, as the gap between old and new non-EU born immigrants does not narrow over time, the assimilation pattern seems to dominate. Still, even if old non-EU born immigrants with relatively long periods of residence perform better than new non-EU immigrants, they have not caught up with natives on the labour market. The distance in labour market performance between natives and non-EU immigrants remains highly problematic.

Figure 2, panel (b) gives the evolution of employment rates for men and women separately. For all groups, employment rates have increased, though to a different extent. For native men, the employment rate is rather stable around 84%. The pattern for immigrants is more fluctuating, with for EU born men an increase from 74% in 1996 to 82% in 2008, and for non-EU born men an increase from 62% to 69% over the same period. For both native and EU born women, a strong increase in employment rate took place, notably around 15 percentage points over the period considered. Also non-EU born women experienced a substantial increase in employment rate, moving from 34% in 1996 to 46% in 2008. But *despite these strong improvements, the gender employment rate gap remains larger among immigrants than among natives* (in 2008). Due to stable male employment rates, the relative closing of the gender gap was strongest among natives, evolving from 24 percentage points in 1996 to 13 percentage points in 2008. For EU born immigrants the gender gap

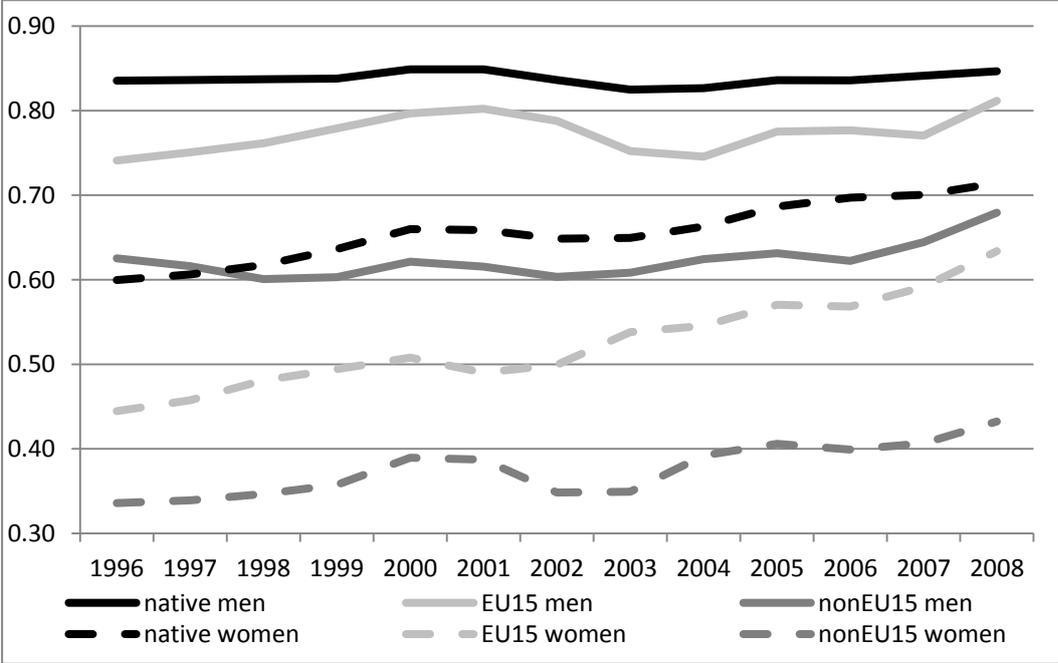
narrowed from 30 to 18 percentage points, while for non-EU born immigrants the gap only shifted from 29 to 25 percentage points.

FIGURE 2: EVOLUTION OF EMPLOYMENT RATE OF NATIVES, EU BORN AND NON-EU BORN IMMIGRANTS, 1996-2008.

(a) Total, and according to years since migration



(b) According to gender



Source: own calculations based on LFS.

5.2 EDUCATION PROFILES

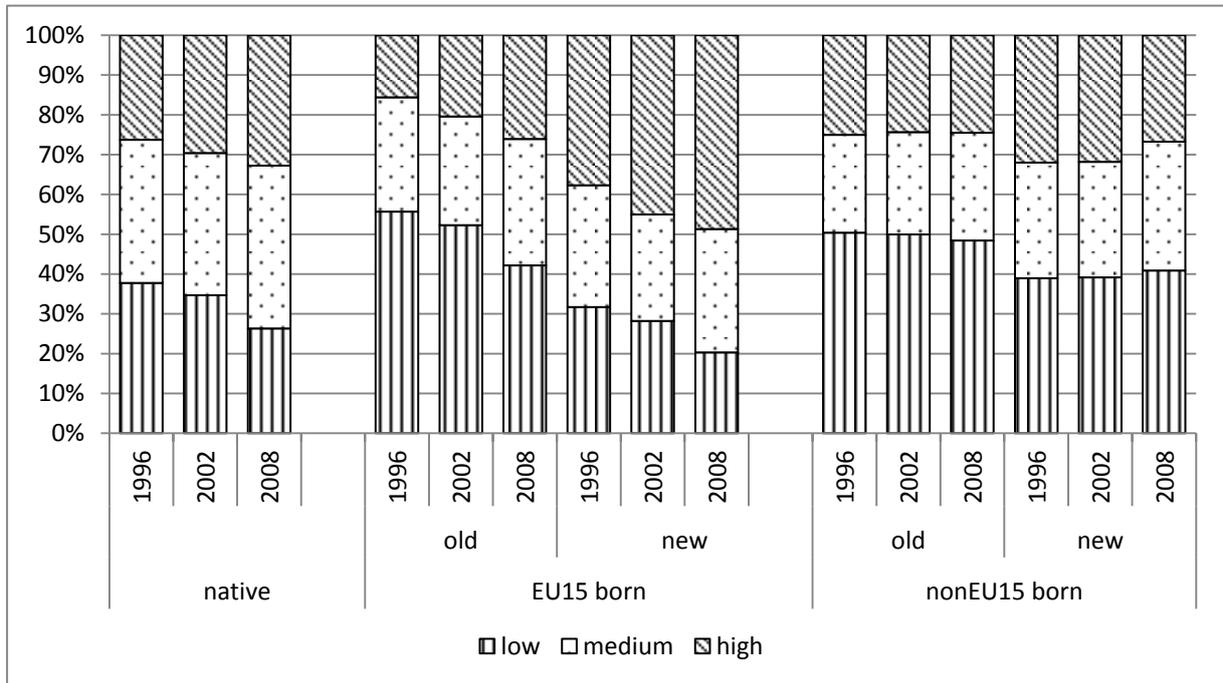
We now turn to Belgium's educational profiles. Important for Belgium is that the upward trend in levels of education discussed above, both for natives and immigrants, is not evenly spread over population groups.

Figure 3 compares education levels of the working age population by origin, sex and period of residence in Belgium. Education levels of the native population indeed have risen significantly in Belgium. This is largely an effect of increased participation in higher education, leading to a higher share of tertiary educated individuals in the Belgian native population (33% in 2008 compared to 26% in 1996). At the same time, the decrease in lower educational levels among the natives is even stronger, with an absolute decrease in the share of low educated individuals from 38% in 1996 to 26% in 2008.

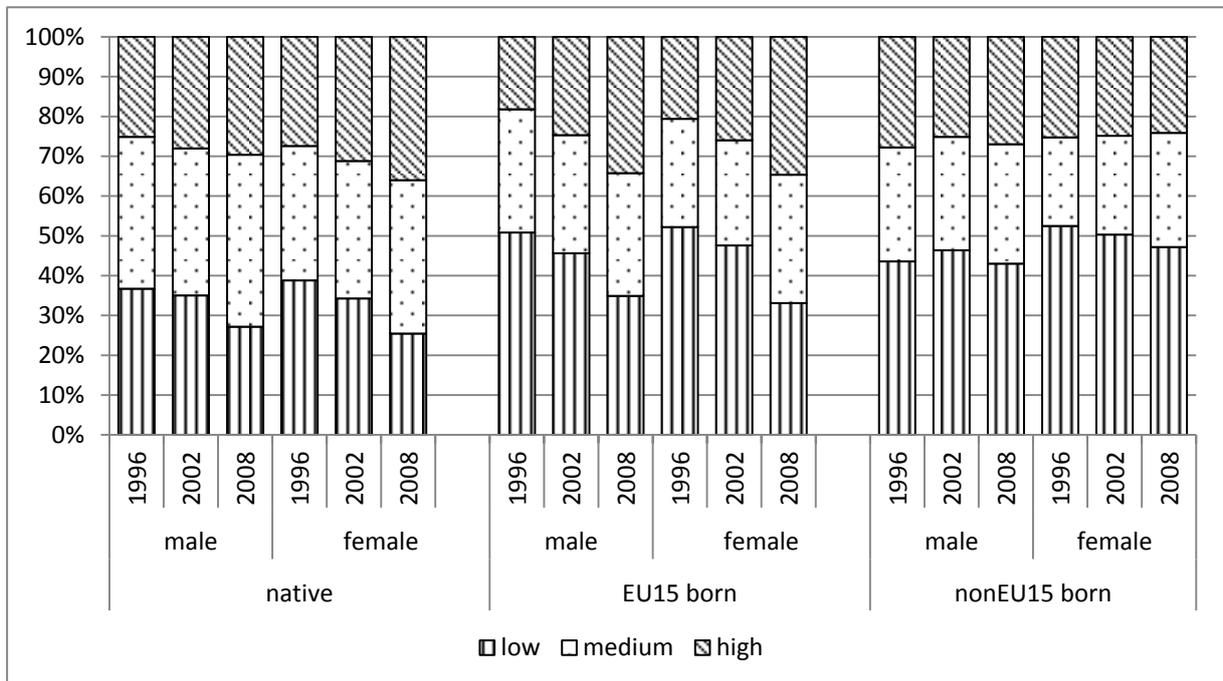
EU born immigrants similarly follow this trend of improved human capital. New EU born immigrants already had the strongest educational profile in 1996, and this has even improved further towards 2008, as the share of low education level decreased to 20% and the share of those with a tertiary education degree rose to 50%. This illustrates that Belgium succeeded in attracting ever higher educated European immigrants. The difference with the 'old' EU born migrants is striking: more than half of this group did not have a secondary education degree in 1996, while in 2008 this had decreased to around 40%. Old EU and non-EU born migrants had a rather similar profile in 1996. These two groups then consisted of a substantial share of 'former guest workers' who came to work in mining and industry sectors and entered Belgium mostly with no or low qualifications. Over time, however, their profiles diverged: where we see significant improvement for the EU born migrants – also because those who were new migrants in 1996 moved to the category of 'old' with the passing of time – the profile of the old non-EU born hardly changed. In 2008 the share of old non-EU born with no secondary education qualification still is around 50%, and the share of tertiary education has also remained at a similar low level as in 1996. The situation of the new non-EU born population bears close resemblance to this group: the share of low educational attainment stagnated around 40%. Moreover, their share of tertiary education degree individuals did not increase, it rather tended to drop slightly: while in 1996 their share was larger than for natives, in 2008 the share of tertiary education degree individuals of natives was substantially higher than was the case for new non-EU born immigrants. Compared to other EU countries, Belgium has a high share of low educated immigrants, following closely the share of low educated immigrants observed in Southern European countries (Eurostat, 2012). However, overall rates of low education in the latter countries are much higher, what makes the relative position of immigrants in Belgium more precarious. Consequently, over this period, we see a considerable widening of the gap in educational profile between natives and EU born individuals on the one hand and non-EU born individuals on the other. Hence part of hypothesis 1 does not materialize: educational profiles did not improve for non-EU migrants. The share of low educated people stagnated, and the share of highly educated even went (slightly) down. Belgium seems to attract relatively more low educated and less high educated immigrants than the general OECD figures on education would seem to suggest.

FIGURE 3: EVOLUTION OF EDUCATIONAL LEVELS FOR NATIVES, EU BORN AND NON-EU BORN IMMIGRANTS, 1996-2008.

(a) According to years since migration



(b) According to gender



Source: own calculations based on LFS.

Another remarkable disparity between natives and non-EU born immigrants is the evolution in tertiary education over gender. While among natives the increase in tertiary education is stronger among women (with a 9 percentage point increase compared to 4 percentage points for men), the

share of tertiary educated non-EU born women remains constant. This finding is in line with our last hypothesis.

6 DRIVERS OF EMPLOYMENT PROBABILITY AND THE ORIGIN GAP

This section disentangles the drivers of employment outcomes of the different population groups, with a particular focus on education. First we present the marginal effects of different personal characteristics for the entire working age population, in reference periods 1996, 2002 and 2008.⁵ The marginal effects show to which degree a certain characteristic has a positive or negative effect on employment. Apart from education level we also control for socio-demographic characteristics such as age, family composition and region of residence.

Model 1 of Table 1 shows the (observed) employment rate gap between natives and immigrants. As discussed in section 5.1, this gap has decreased for all groups albeit to a different extent. For the two groups of EU born migrants, the difference in employment probability relative to natives has become insignificant, while for non-EU born migrants the gap is still significant, even though it is (slightly) smaller in 2008 than it was in the mid-nineties. In model 2 we introduce education level, which contributes as a significant explanation for differences in labour market outcomes in all years. Not having a secondary education degree considerably lowers one's employment probability, while a tertiary education level does the opposite. Interestingly, the negative impact of low education levels becomes somewhat smaller over time. The size of this coefficient also decreases when controlling for other socio-demographic variables, as is done in Model 3. But still, in 2008 there is a significant gap between non-EU born individuals and natives. For new non-EU born immigrants the gap remains the highest, even when controlling for education and other socio-demographic characteristics. These other socio-demographic variables are in (almost) all years significant. Employment is decreasing with age. Women have lower employment probabilities, although this effect is strongly decreasing over time. Living as a couple or having children is associated with an increased employment probability. Regional diversity in economic opportunities is translated in negative (and increasing) effects of residence in Brussels or the Walloon region.

⁵ The main trends as observed for these three years are consistent over the entire period. Results for all intermediate years can be obtained from the authors upon request.

TABLE 1: AVERAGE MARGINAL EFFECTS (AME), PROBABILITY OF EMPLOYMENT, TOTAL POPULATION, LFS, 1996 – 2002 - 2008

Control variable (reference group)	1996			2002			2008		
	model 1	model 2	model 3	model 1	model 2	model 3	model 1	model 2	model 3
<i>old EU born (native)</i>	-0.129 ***	-0.085 ***	-0.052 ***	-0.107	-0.072	-0.023 **	-0.090	-0.057	-0.003
<i>new EU born (native)</i>	-0.078 ***	-0.103 ***	-0.130 ***	-0.027 ***	-0.073 ***	-0.089	-0.008	-0.028	-0.026
<i>old nonEU born (native)</i>	-0.197 ***	-0.172 ***	-0.178 ***	-0.236 ***	-0.201 ***	-0.189 ***	-0.171 ***	-0.130 ***	-0.108 ***
<i>new nonEU born (native)</i>	-0.270 ***	-0.279 ***	-0.335 ***	-0.264 ***	-0.260 ***	-0.277 ***	-0.205 ***	-0.188 ***	-0.192 ***
<i>low educated (medium)</i>		-0.190 ***	-0.132 ***		-0.185 ***	-0.139 ***		-0.167 ***	-0.121 ***
<i>tertiary educated (medium)</i>		0.123 ***	0.136 ***		0.117 ***	0.125 ***		0.110 ***	0.119 ***
<i>age (effect of 5-years increase)</i>			-0.008 ***			-0.007 ***			-0.006 ***
<i>sex (female)</i>			0.230 ***			0.186 ***			0.135 ***
<i>marital status (not married)</i>			0.040 ***			0.016 **			0.009
<i>1 wa adult in hh (2wa adults in hh)</i>			-0.070 ***			-0.075 ***			-0.073 ***
<i>3 wa adult in hh (2 wa adults in hh)</i>			-0.045 ***			-0.008			-0.017 **
<i>at least 1 child in hh (no children in hh)</i>			0.011 **			0.037 ***			0.014 **
<i>Brussels region (Flemish region)</i>			-0.017 **			-0.075 ***			-0.075 ***
<i>Walloon region (Flemish region)</i>			-0.051 ***			-0.058 ***			-0.072 ***

Source: own calculations based on LFS.

7 RELATION BETWEEN EDUCATION AND EMPLOYMENT OUTCOMES ACCORDING TO ORIGIN

The regression in Table 1 tells us little about the effect of education on employment of specific groups, nor can it tell us whether the differences in employment rates are due to the fact that immigrant groups have different characteristics or because the return on education differs. In this section we decompose the differences in employment probability between natives and immigrants by looking at differences in socio-demographic characteristics, such as age, sex, civil status, etc. Apart from education, the other socio-demographic variables indeed will also play a role, as e.g. immigrants tend to be much younger on average (and hence should be more likely to work) and are overrepresented in the Brussels capital region (which reduces their employment probabilities). The decomposition of the differences in employment probability between natives and immigrants also allows us to measure the ‘ethnic penalty’ for each migrant group. Factors influencing the ethnic penalty can include omitted variables (f.e. variables such as language that are not present in our survey), differences in behaviour or preferences and discrimination. In this section we first look at the effects of differences in education and other socio-economic characteristics. In 7.2 we try to capture the differences in returns on education between natives and immigrants.

7.1 THE RELATION BETWEEN EDUCATIONAL DIFFERENCES AND LABOUR MARKET PERFORMANCE

In this section, we address the question to what extent the worse labour market performance of immigrants is due to the differential composition of the population groups in terms of education level and other socio-demographic characteristics. We use an indicator for educational attainment and socio-demographic indicators both at individual (age, sex, civil status, regional settlement) and household level (number of working age individuals and number of children in the household of the respondent) as characteristics to explain the employment rate gap. The baseline (zero) is the observed employment rate of natives. Some characteristics of immigrants seem to *improve* their chances of employment, e.g. their younger age profile, while others explain the worse employment performance of immigrants.

Figure 4 presents the difference between expected and observed differences in employment. First, we calculate what the ‘expected’ employment rate gap between natives and immigrants would be by putting immigrant characteristics into a labour market model for natives, as if their observed socio-economic profiles were all equal on average (expressed by the small black squares). Then we compare this with the actual differences that occur in real life. When the expected and the observed employment rate gap are not the same, this means that things are at work that affect immigrants which do not affect natives. In other words, the difference between the expected and the observed gap indicates the size of an ethnic penalty.

Europeans (EU) compared to natives

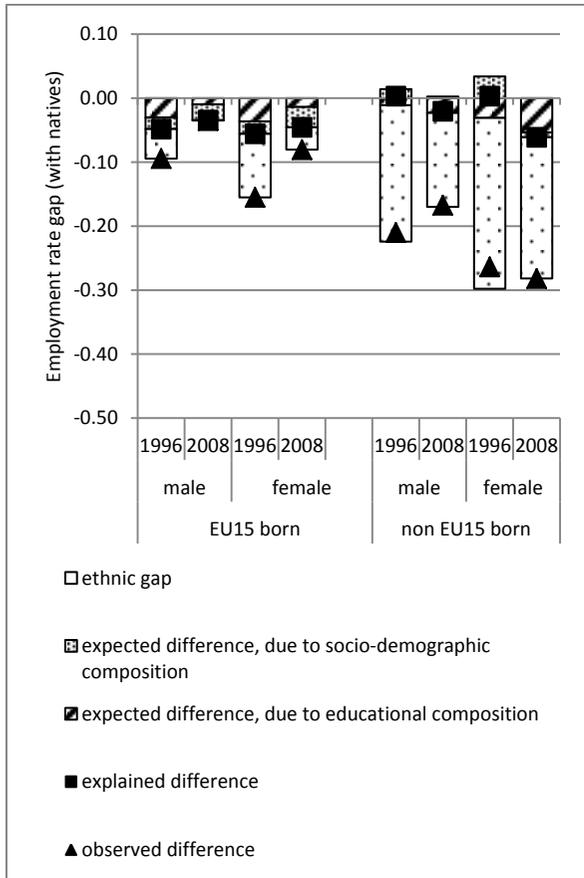
As we have seen, the employment rate gap between EU born immigrants and natives has been halved over time from 13 percentage points in 1996 to 6 percentage points in 2008. This decline took place for both sexes, with a slightly stronger decrease among men (Figure 4, panel a). Remarkable is the steeper decline in observed employment rate gaps compared to expected employment rate gaps. This means that for male EU born immigrants the ethnic penalty has entirely disappeared. In

2008, as much as 98 per cent of the EU male gap can be accounted for by the observed individual characteristics, i.e. a different composition of the EU male migrants than the composition of native males. Fifteen years before, the explained part accounted only for 51 per cent. The contribution of education as an explanation for the (decreasing) employment rate gap has declined significantly, while the weight of other socio-demographic factors has increased. For women, a similar picture emerges: in 2008, 57 per cent of the employment rate gap is explained, compared to 36 per cent in 1996. The relative importance of educational composition increases in both explained and total employment rate gaps.

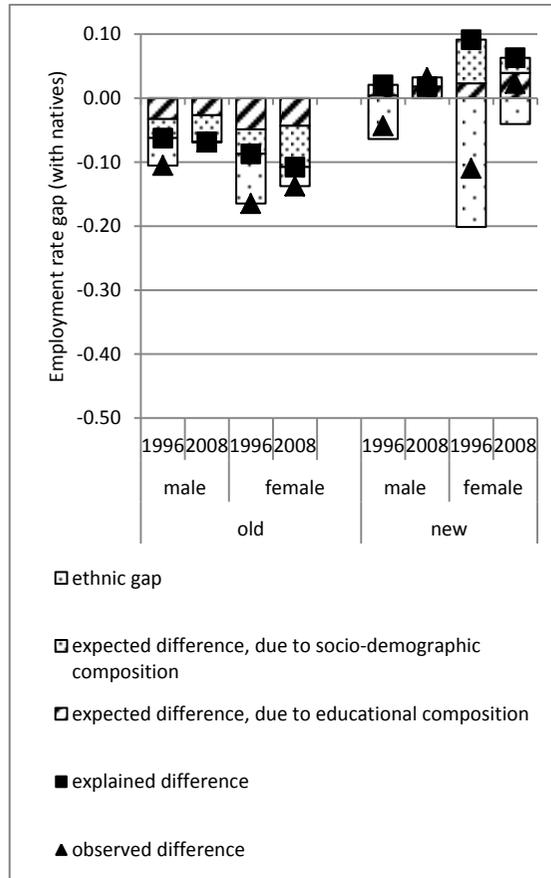
Figure 4, panel b makes a further distinction between old and new immigrants for EU born migrants. The expected employment rate gap for old EU immigrants is rather low: in 2008 it is 7 and 11 percentage points for men and women respectively. This gap is due to an -on average- older age profile and lower educational level, as compared to natives. Although their expected labour market performance remained stable (for men) or even slightly decreased (for women) their observed employment rate gap has decreased over time. Because of their relatively long residence in Belgium we might expect a certain level of assimilation, related to knowledge of labour market organization and language proficiency. The main explanation for the disadvantages experienced by those former guest workers is their negative selection. Former guest workers originated mainly from economically depressed areas in Italy with only little human capital. For this group, once education and socio-demographic profile have been controlled for, the general disadvantages faced at the labour market in Belgium disappears in most recent years. In 2008, new EU immigrants are the only origin group able to outperform natives on the labour market: both their expected and observed employment rates exceed those of natives. This outperformance is related with better educational profiles, and for women also with other socio-demographic characteristics (e.g. fewer EU women are living in a household with children). Moreover, new EU born immigrants are the only population group where the employment rate gap is similar for men and women, although women encounter some depreciation of their educational attainments. For men and women, the ethnic penalty reduced considerably, resulting in both observed and expected gaps being positive.

FIGURE 4: CONTRIBUTION OF EDUCATION AND OTHER SOCIO-ECONOMIC CHARACTERISTICS IN OBSERVED AND EXPECTED EMPLOYMENT RATE GAP WITH NATIVES ACCORDING TO GENDER, 1996 – 2008.

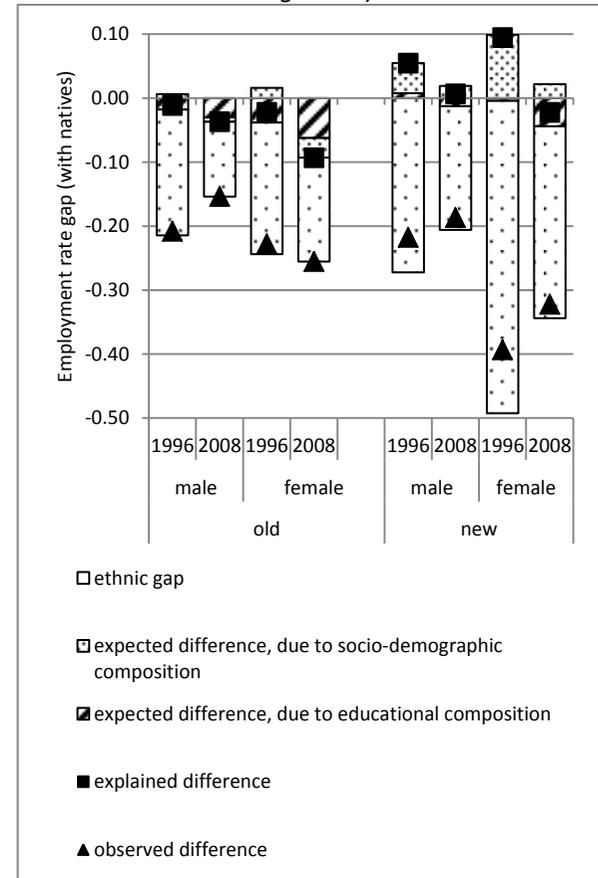
(a) EU and non-EU born immigrants



(b) EU born immigrants (years since migration)



(c) non-EU born immigrants (years since migration)



Source: own calculations based on LFS.

Non-EU immigrants versus natives

Over time, we do not observe any significant change in the employment rate gap between natives and non-EU born immigrants, as the (small) changes for men and women cancel each other out (Figure 4, panel a). Due to a worsening of non-EU immigrants' educational profiles as compared with natives, their expected employment rate gaps worsen for both men and women (see figure 4 (a) – black squares go down). We also remark an increase in the importance of education in explaining the employment rate gap between natives and non-EU immigrants (striped beam). In 2008, education explains 14 and 19 per cent of the employment rate gap, for men and women respectively. This is more than in 1996. At the same time, the ethnic penalty decreased. While in 1996, the negative impact of education was entirely counteracted by positive socio-demographic effects (like a younger age profile and more children in the household, both positively correlated with higher employment incentives), this is not the case any more in 2008. Not only has the (negative) effect of (low) education increased over time, non-EU immigrants' other characteristics have grown worse too. The age profile, regional location and other such characteristics now have a negative impact.

Also for non-EU born immigrants the decomposition of the employment rate gap looks different for old and new immigrants (Figure 4, panel c). In 2008 the observed employment rate gap for 'old' non-EU born men is 15 percentage points and for women 25 percentage points. Only for men we see a significant improvement over time, the ethnic penalty seems to decrease. For these old comers the (negative) effect of (poor) education grows over time, and their personal characteristics grow negative (e.g. they get older). So relatively more can be explained by these bad characteristics in 2008 than in 1996. For example, for men and women, the explanatory power of education in the employment gap increased to respectively 19 and 24 per cent. Compared to 1996 this share has strongly increased, mostly for men. On the other hand, despite some decreases over time, the ethnic penalty remains substantial.

As shown in Figure 1 the importance of new immigrants, with less than 10 years of residence in Belgium, has strongly grown in most recent years and its share within the stock of non-EU born immigrants has doubled over the period 1996 - 2008. Nevertheless Belgium does not succeed in incorporating these immigrants into its labour market. Although we see some improvement over time, the position of new non-EU born immigrants relative to natives remains highly problematic. In 2008 the observed employment rate gap of male new non-EU born immigrants is 19 percentage points, while women have an employment rate that is at least 32 percentage points lower than that of native women. Although the educational profile of newer immigrants is better than that of older non-EU born immigrants, its importance in explaining labour market position has *increased*: in 2008, respectively 7 and 14 per cent of the male and female employment rate gap is related to differences in education. The reason why education matters more in explaining the employment rate gap, is that natives' educational levels also strongly increased, rendering the better educational profile of new immigrants less effective and competitive. The ethnic penalty for new non-EU immigrants is still very high, even though it improved over time.

It is important to note that except for EU men, the overall ethnic penalty forms a much larger share of explaining the employment rate gap than the educational factor does! While education does explain parts of the employment rate gaps, other factors clearly have a larger share in the story.

The importance of factors composing the ethnic penalty, certainly among non-EU born immigrants, has several possible explanations. The model we apply is currently the best option with Belgian data over this time frame. However, we know that relevant migrant specific characteristics are lacking. Literature extensively describes the importance of language, migration reasons and policies, ethnic networks and discrimination (Euwals et al., 2007). At the same time, part of the unexplained gap is due to different valorisation of individual characteristics on the labour market. Individual

preferences, labour market behaviour and employer orientation towards the potential work force might differ for natives and immigrants. Different factors are likely to affect the labour market integration of natives and immigrants, or the same factors may affect the employment propensities of immigrants and natives to a different extent. Therefore, we have a closer look at the average marginal effects of both groups. By doing so, we are able to evaluate how the return of education will play out differently for natives and immigrants.

7.2 THE DIFFERENCES IN RETURN ON EDUCATION FOR IMMIGRANTS' AND NATIVES' EMPLOYMENT PROBABILITIES

Return on education can play out differently for natives and different immigrant profiles. People with an equal level of education may still not face the same labour market opportunities. Immigrants face a considerable ethnic penalty in Belgium. But the ethnic penalty is not the same for every immigrant, and certainly not for immigrants of different educational levels. In a way, highly educated immigrants have 'more to lose' if they fail to get access to high skilled employment. The return of education plays out differently for them.

We explore the return on education for the different origin groups while controlling for other socio-demographic variables. We check to which degree (low and high) education has a positive or negative effect on employment.

First, we show the return on education for all natives, as well as for men and women separately, for 1996 and 2008. We already know from Table 1 that rising education levels have a positive impact on employment chances. This is the case for all population groups. In 2008 natives with less than a secondary education degree had a 11.5 percentage points lower probability of having a job than someone who has attained secondary education. A higher education degree results in a 12.3 percentage point higher probability. Outcomes are different for men and women. Native men who have completed tertiary education are 9.5 percentage points more likely to be employed than those who have who left school after secondary education. For women, the effect of tertiary education on employment probability is stronger, with 16.1 percentage points in 2008. Nevertheless, their marginal effects of tertiary education converged, as the relative importance for men has increased, while that for women decreased. Also for lower education the marginal effects came somewhat closer to one another.

For EU born migrants, the penalty for having a low education level is lower than that for natives (in 2008), mainly because the effect for men is so weak: an EU born man with low education has a 4.3 percentage points lower probability of being employed compared to someone who has a secondary education degree. The effect of tertiary education is somewhat higher than for natives, and this is the case both for men and women. The smaller negative effect of low education in 2008 is mainly driven by new EU born men, who actually have no difference in employment probability compared to the medium educated. The larger effect of tertiary education (compared to natives), on the contrary, can be attributed to 'old' EU born women. Despite their current outperforming of natives in valorisation of educational levels on the labour market, EU born immigrants have improved their return on education gradually over time.

For non-EU born immigrants the return on education is worse compared to natives. In 2008 their return on education for low education are more negative and those for tertiary education are less positive compared to natives. In 2008 non-EU born immigrants with less than a secondary education degree had a 16 percentage points lower probability of having a job than someone who has attained secondary education, while a tertiary education degree results in a 7.9 percentage point higher probability. The negative effect of low education is especially strong for 'old' non-EU born women (-

19.2 percentage points), while also the positive effect of higher education is strongest for this group (17.6 percentage points). Differences in preferences towards labour market activity can be at work here. The *low return on higher education for new non-EU born migrants* is striking, and then particularly the effect for men, which is negative. A factor that may play here is the difficulty to transfer human capital acquired in the home country, or the lack of country specific human and cultural capital. Studies on highly skilled immigrants have shown that unsatisfactory language proficiency and obstacles in terms of transferability of diplomas hamper labour market integration, which might, together with discrimination, contribute to ethnic penalties (Esser, 2006; Adamuti-Trache & Sweet, 2005; Kalter and Granato, 2007). In the nineties, the effects of education strongly differed between non-EU born immigrants and natives. The negative effect of not having a secondary education degree was stronger for non-EU born immigrants than for natives. This divergent effect was most outspoken for men. This negative effect converged towards that of natives, and this both for men and women. However, the positive effect of a higher education degree has not risen to the level of natives.

TABLE 2: AVERAGE MARGINAL EFFECTS (AME) OF EDUCATIONAL LEVELS ON THE PROBABILITIES OF EMPLOYMENT BY ORIGIN, GENDER AND TIME SINCE MIGRATION, BELGIUM 1996 AND 2008, LFS.

		low education			tertiary education		
		<i>total</i>	<i>Men</i>	<i>women</i>	<i>Total</i>	<i>men</i>	<i>women</i>
<u>1996</u>	native						
	<i>total</i>	-0.124	-0.098	-0.145	0.135	0.069	0.187
	EU born						
	<i>total</i>	-0.154	-0.133	-0.175	0.111	0.091	0.119
	<i>old</i>	-0.154	-0.131	-0.180	0.123	0.057	0.149
	<i>new</i>	-0.135	-0.113	-0.141	0.142	0.184	0.106
	non-EU born						
	<i>total</i>	-0.216	-0.251	-0.178	0.119	0.069	0.155
	<i>old</i>	-0.246	-0.274	-0.215	0.164	0.108	0.194
	<i>new</i>	-0.068	-0.083	-0.036	0.029	0.027	0.030
<u>2008</u>	native						
	<i>total</i>	-0.115	-0.095	-0.132	0.123	0.080	0.161
	EU born						
	<i>total</i>	-0.091	-0.042	-0.143	0.160	0.104	0.187
	<i>old</i>	-0.117	-0.098	-0.143	0.199	0.080	0.264
	<i>new</i>	-0.009	-0.002	-0.143	0.123	0.116	0.125
	non-EU born						
	<i>total</i>	-0.160	-0.137	-0.174	0.079	0.001	0.146
	<i>old</i>	-0.168	-0.138	-0.192	0.119	0.046	0.176
	<i>new</i>	-0.141	-0.136	-0.140	0.055	-0.041	0.130

Source: own calculations based on LFS.

Table A.1 and Table A.2 in Appendix present the same marginal effects for education, but add also other relevant socio-demographic covariates for several population separate subgroups (by origin, gender and duration of residence). In general these tables reflect sociological expectations for valorisation of different individual characteristics on the Belgian labour market. Three outcomes are worth drawing attention to. First, the *place of residence* in Belgium matters for immigrants'

employment opportunities. The overrepresentation of non-EU born immigrants in the Brussels capital region in combination with a very low labour market opportunities in that region aggravates the labour market outcomes of non-EU born immigrants. Second, the *presence of children in the household* affects natives' and immigrants' decisions to participate in the labour market in an *opposite* way. Where for native women the negative impact of having children on employment has eroded over time, this negative effect became stronger for non-EU born women. The presence of at least one child in the household drops the probability of employment by 9 percentage points for the reference non-EU born woman, which is 4 times the corresponding effect for the reference native woman. Even more remarkable is the negative effect of having children on male immigrant employment. While in 1996 it followed the native trend, in 2008 the impact shifted towards reduced employment probabilities. Third, *gender effects are much larger among non-EU immigrants*. This is particularly true for the impact of civil status on employment: marriage is associated with a higher probability of employment for men and strongly decreases the probability of labour market attachment for women. This divergence may be an indication of prevalent cultural differences between natives and immigrants.

8 CONCLUSION

This paper contributes to the understanding of the very weak labour market position of non-EU immigrants in Belgium. Our analysis demonstrates that education is clearly an important prerequisite in gaining access to employment. All other things equal, higher educational levels are associated with better employment levels. This sociological relation holds for both immigrants and natives. However, substantial variation exists in the educational attainment levels and the return on education for different population groups, with non-EU immigrants emerging as the losing group.

Over a period of 12 years the labour market situation of natives and EU immigrants have converged. EU immigrants now boast relatively high employment levels. The underlying mechanisms of this improvement are two-fold. The educational profile of this group improved significantly. At the same time, employment rates simultaneously rose for all educational levels. This combined trend renders the educational distribution of the population and the return on education very similar for natives and EU immigrants. For EU born immigrants, education level offers a substantial explanation for the group differences in employment outcomes, net of other observable characteristics. The relevance of education level in understanding employment rate differences is stronger for old EU born immigrants compared to new ones. Today, new EU born immigrants outperform natives on the labour market, partly because of high educational levels.

For non-EU immigrants, however, the picture looks much bleaker. We do not observe the same gap bridging trends as we found for EU immigrants. Over the observed period, the labour market position of non-EU immigrants has only slightly improved. Globally taken, the education levels of non-EU immigrants have not significantly changed over time and remain far below native averages. Even though the explanatory power of differences in education level between natives and non-EU immigrants almost doubled in the course of this 12 years period, it still offers only a partial understanding of why non-EU immigrants perform weakly on the Belgian labour market. Non-EU immigrants' employment levels net of human capital remain about 20 percentage points below native employment. As we have seen, the return on education is still a relevant factor, even despite improvements in the returns on low education, which converges towards native levels. For higher education, we found the reverse with low returns on education for non-EU migrants with a higher education degree. Especially for men, a higher education degree does not result in a higher employment probability compared to someone with only a secondary education degree. For new non-EU born men, the return on higher education was even negative. This provides an indication of

the difficulty of transferring human capital acquired in the home country to the host labour market (e.g. recognition of degrees), as well as of difficulties in acquiring country specific human and cultural capital (e.g. language proficiency), or other barriers to a job (e.g. discrimination). These factors call for stronger policy action, in terms of 1) facilitating the transfer of human capital of newcomers; 2) providing extra investment in the acquisition of human and cultural capital; 3) fighting other barriers to employment, like e.g. discrimination.

In addition, there is a strong gender dimension to the story, as the observed employment gap remains particularly large for female non-EU born migrants. Education is a relevant factor here and its importance is growing, as in the wake of migration policies, the low-skilled women from outside the EU account for a substantial share of current stock and inflow of immigrants. Hence, policies should pay particular attention to this group.

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APPENDIX

TABLE A.1: AVERAGE MARGINAL EFFECTS ON THE PROBABILITIES OF EMPLOYMENT BY GENDER AND YEAR, NATIVES, EU BORN AND NON-EU BORN, BELGIUM, LFS.

control variables		male		female	
		1996	2008	1996	2008
natives	age (effects of a 5-years increase)	-0.006 ***	-0.005 ***	-0.011 ***	-0.006 ***
	civil status (not married)	0.099 ***	0.071 ***	-0.026 ***	-0.052 ***
	single wa adult HH (2 wa adults)	-0.053 ***	-0.040 ***	-0.077 ***	-0.093 ***
	at least 3 wa adults in HH (2 wa adults)	-0.038 ***	-0.016 *	-0.042 ***	-0.033
	at least 1 child in HH (no children in HH)	0.055 ***	0.066 ***	-0.034 ***	-0.005 *
	low education (medium educated)	-0.098 ***	-0.095 ***	-0.145 ***	-0.132 ***
	tertiary education (medium educated)	0.069 ***	0.080 ***	0.187 ***	0.161 ***
	Brussels region (Flemish region)	-0.070 ***	-0.093 ***	0.038 ***	-0.086 ***
	Walloon region (Flemish region)	-0.068 ***	-0.055 ***	-0.040 ***	-0.095 ***
	nbr of observations	18 248	5 755	18 112	5 677
pseudo R-squared	0.152	0.141	0.147	0.148	
EU-born	age (effects of a 5-years increase)	-0.009 ***	-0.007 ***	-0.011 ***	-0.009 ***
	civil status (not married)	0.154 ***	0.043	-0.029	-0.070 ***
	single wa adult HH (2 wa adults)	-0.106 ***	-0.107 **	-0.014	-0.042
	at least 3 wa adults in HH (2 wa adults)	-0.030	-0.042	-0.045	0.080 **
	at least 1 child in HH (no children in HH)	0.037	0.070 **	-0.098 ***	-0.011
	low education (medium educated)	-0.133 ***	-0.042	-0.175 ***	-0.147 ***
	tertiary education (medium educated)	0.091 **	0.104 *	0.119 ***	0.187 ***
	Brussels region (Flemish region)	-0.014	0.015	0.090 ***	-0.132 **
	Walloon region (Flemish region)	-0.059 **	0.008	0.035	-0.119 **
	nbr of observations	1 355	429	1 410	468
pseudo R-squared	0.144	0.119	0.110	0.178	
Non- EU-born	age (effects of a 5-years increase)	-0.003 **	-0.004 *	-0.003 **	-0.004 ***
	civil status (not married)	0.140 ***	0.067 **	-0.149 ***	-0.123 ***
	single wa adult HH (2 wa adults)	-0.002	-0.022	-0.044	-0.044
	at least 3 wa adults in HH (2 wa adults)	-0.043	-0.032	-0.097 ***	0.027
	at least 1 child in HH (no children in HH)	0.065 **	0.015 *	-0.043 *	-0.090 **
	low education (medium educated)	-0.251 ***	-0.137 ***	-0.178 ***	-0.174 ***
	tertiary education (medium educated)	0.069 **	0.001 **	0.155 ***	0.146 ***
	Brussels region (Flemish region)	-0.053 *	-0.051 *	-0.006	-0.084 *
	Walloon region (Flemish region)	-0.035	-0.039	0.037	-0.056
	nbr of observations	1 209	556	1 161	637
pseudo R-squared	0.095	0.084	0.140	0.091	

Source: own calculations based on LFS.

TABLE A.2: AVERAGE MARGINAL EFFECTS ON THE PROBABILITIES OF EMPLOYMENT BY PERIOD OF RESIDENCE AND YEAR, NATIVES, EU BORN AND NON-EU BORN, BELGIUM, LFS.

control variables		1996	2008	1996	2008
natives	age (effects of a 5-years increase)	-0.008 ***	-0.005 ***		
	sex (female)	0.224 ***	0.132 ***		
	civil status (not married)	0.041 ***	0.007 **		
	single wa adult HH (2 wa adults)	-0.073 ***	-0.073 ***		
	at least 3 wa adults in HH (2 wa adults)	-0.043 ***	-0.025 **		
	at least 1 child in HH (no children in HH)	0.015 ***	0.033 ***		
	low education (medium educated)	-0.124 ***	-0.115 ***		
	tertiary education (medium educated)	0.135 ***	0.123 ***		
	Brussels region (Flemish region)	-0.016 **	-0.089 ***		
	Walloon region (Flemish region)	-0.054 ***	-0.074 ***		
nbr of observations	36 360	11 432			
pseudo R-squared	0.184	0.154			
		new		old	
		1996	2008	1996	2008
EU-born	age (effects of a 5-years increase)	-0.008 ***	-0.005 ***	-0.010 ***	-0.007 ***
	sex (female)	0.286 ***	0.153 ***	0.283 ***	0.191 ***
	civil status (not married)	-0.059 ***	0.013	0.097 ***	-0.036
	single wa adult HH (2 wa adults)	-0.135 ***	-0.009	-0.044 *	-0.122 **
	at least 3 wa adults in HH (2 wa adults)	0.101	0.031	-0.043 *	0.011
	at least 1 child in HH (no children in HH)	-0.080 *	0.023 *	-0.002	0.021
	low education (medium educated)	-0.135 ***	-0.009 **	-0.154 ***	-0.117 ***
	tertiary education (medium educated)	0.142 ***	0.123 **	0.123 ***	0.199 ***
	Brussels region (Flemish region)	0.000	-0.036	0.060 *	-0.063
	Walloon region (Flemish region)	0.074	-0.043 **	-0.032	-0.038
nbr of observations	485	437	2 280	460	
pseudo R-squared	0.17	0.149	0.169	0.179	
non-EU-born	age (effects of a 5-years increase)	-0.001	-0.005 **	-0.004 ***	-0.006 ***
	sex (female)	0.362 ***	0.243 ***	0.214 ***	0.218 ***
	civil status (not married)	0.125 **	-0.002	-0.011	-0.048
	single wa adult HH (2 wa adults)	0.030	-0.016	-0.042 *	-0.056
	at least 3 wa adults in HH (2 wa adults)	0.091	0.041	-0.115 ***	-0.033 *
	at least 1 child in HH (no children in HH)	-0.053	-0.076 **	0.023	-0.023
	low education (medium educated)	-0.068	-0.141 ***	-0.246 ***	-0.168 ***
	tertiary education (medium educated)	0.029	0.055	0.164 ***	0.119 ***
	Brussels region (Flemish region)	-0.029	-0.117 *	-0.014	-0.037
	Walloon region (Flemish region)	-0.045	-0.090 **	0.005	0.002
nbr of observations	519	577	1 851	616	
pseudo R-squared	0.146	0.075	0.191	0.126	

Source: own calculations based on LFS.

ImProVE: Poverty Reduction in Europe. Social Policy and Innovation

Poverty Reduction in Europe: Social Policy and Innovation (ImProVE) is an international research project that brings together ten outstanding research institutes and a broad network of researchers in a concerted effort to study poverty, social policy and social innovation in Europe. The ImProVE project aims to improve the basis for evidence-based policy making in Europe, both in the short and in the long term. In the short term, this is done by carrying out research that is directly relevant for policymakers. At the same time however, ImProVE invests in improving the long-term capacity for evidence-based policy making by upgrading the available research infrastructure, by combining both applied and fundamental research, and by optimising the information flow of research results to relevant policy makers and the civil society at large.

The two central questions driving the ImProVE project are:

How can social cohesion be achieved in Europe?

How can social innovation complement, reinforce and modify macro-level policies and vice versa?

The project runs from March 2012 till February 2016 and receives EU research support to the amount of Euro 2.7 million under the 7th Framework Programme. The output of ImProVE will include over 55 research papers, about 16 policy briefs and at least 3 scientific books. The ImProVE Consortium will organise three international conferences (November 2013, April 2014 and Winter 2015). In addition, ImProVE will develop a new database of local projects of social innovation in Europe, cross-national comparable reference budgets for 6 countries (Belgium, Finland, Greece, Hungary, Italy and Spain) and will strongly expand the available policy scenarios in the European microsimulation model EUROMOD.

More detailed information is available on the website <http://improve-research.eu>.

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