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Assumptions on migration

Modelling the future evolution of international migration for Belgium

Note by Federal Planning Bureau, BELGIUM[1]

Summary

This Working Paper presents the methodological progress made in projecting international migration. The new methodology is notably based on an analysis of migration flows per nationality and on statistics on reasons for migrating, in order to assess whether economic variables constitute relevant determinants of migration. If they do, the impact of economic determinants on immigration is estimated using econometric methods. The methodology also takes into account increasing globalisation and mobility, as well as the expected growth in the global population, all of which boost international migration flows (immigration and emigration). Finally, it gives more stability to the long-term migration projections and, therefore, to the population projections, as the annual revisions of long-term migration depend less on the short-term evolution of migration flows.

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I.   Introduction

1.   The difficulties faced by demographers when developing the 'international migration' component of the population projections are well known. They concern methodological choices as well as assumption setting.

2.   In particular, these difficulties arise from the complex factors determining migrations, for which many theories have been put forward[2], from the difficulties involved in measuring these determinants and in assessing their impact or even from the lack of reliable projections for some of these determinants. These determinants are various in nature and include, among others, the economic situation in the countries of immigration and emigration, the (geographical, cultural and historical) links between these countries, and the demographic developments, policies and regulations.

3.   The most classical approaches either apply recently observed (or similar) values for the international migration flows to the whole projection period (levels or sometimes rates for emigration) or apply a long-term – or very long-term – convergence towards zero net migration. These two options are not only opposed in principle, they also yield very different projection results provided that recent migration flows, and more particularly the net migration, are significant. This is largely the case for Belgium, certainly since the 2000s.

4.   Since the 2007-2060[3] edition of the national population projections, a somewhat intermediate approach between the first and the second option has been adopted. In the methodology used, the long-term evolution of immigration from the new EU Member States and non-EU countries (third countries) is based on the relative economic attractiveness of Belgium. The reasoning for this approach was based on the immigration surge from the new EU Member States during the 2000s, which was largely attributable to the relative economic attractiveness of Belgium (standard of living, salaries and employment opportunities), since the EU enlargement process had progressively led to free movement of people and workers. It did not exclude the possibility that the immigration surge should go on or even increase in the short term. Nevertheless, looking further ahead, it was reasonable to project a trend reversal in the event that the economic attractiveness

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[2]   For a general overview of immigration theories and common practices applied in projection models, see N. Howe and R. Joackson, 2004, Projecting immigration: A survey of the current state of practice and theory, Center for Retirement Research Working Paper, CRR WP 2004-32.

[3]   Perspectives de population 2007-2060, Federal Planning Bureau and Statistics Belgium, Planning Paper 105, May 2008.

of Belgium in comparison to these countries should deteriorate in the long term. The same logic of comparing living standards was applied to the expected evolution of immigration from third countries. For the immigration from old EU Member States, the expected evolution relied more on a logic of (geographical or cultural) proximity with Belgium rather than on a logic of attractiveness based on the gap between standards of living.

5.   In the 2013-2060 population projections, some ad hoc assumptions have been integrated in order to take into account the impact of the economic and financial crisis and of significant legislative changes (in particular the amendment in 2011 to the act on family reunification).

6.   The past has shown that many migration flows – especially from third countries – are not explained solely by economic attractiveness but are also caused by determinants that are hard or impossible to 'forecast'. Examples for Belgium include regularisation campaigns (1999, 2010) or the geopolitical situation in some parts of the world (the Kosovo crisis at the end of the '90s that generated large flows of asylum seekers) that led to a sudden and temporary increase in immigration. Conversely, the establishment in 2011 of a more restrictive policy on family reunification has led to a fall in migration flows over the past three years. And the current crisis in the countries of the Middle East leads to an inflow of asylum seekers as of mid-2015**.**

7.   Looking backward, projecting future developments of migration flows is a difficult exercise subject to significant uncertainties about the date, duration and intensity of phenomena. Consequently, as for any other projection exercise, but probably all the more for international migration, it is necessary to emphasise that projections are founded on a set of assumptions based on current knowledge, taking into account an institutional and societal context, at national or international level.

8.   In a continuous effort to improve its models, the Federal Planning Bureau (FPB) has carried out groundwork for improving its methodology for determining the future evolution of international migration on the basis of different elements:

–   more detailed analysis of the reasons for migration, using statistics on first residence permits;

–   use of FPB expertise in the econometric approaches for estimating, when relevant, the impact of economic attractiveness on international immigration and use of these estimates in the projections;

– improving the long-term projection method to make it more stable; the annual reviews of long-term immigration should not depend on the short-term variations in immigration;

– taking into account a context of increased globalisation that fosters international migration flows.

9.   The results of this work were used for the first time in the 2014-2060 population projections[4]. It should be noted that the methodology presented in this document only applies to the migration flows to/from Belgium of individuals of foreign nationality. Immigration and emigration of Belgians are treated separately (for more details, see the 2015-2060 population projections[5]).

II.   Immigration of foreigners

a.   *Reasons for immigrating*

10.   The evolution of immigration flows to Belgium can be explained in terms of various reasons: employment opportunities (work), family reunification, student mobility, asylum applications, stay on humanitarian and medical grounds, etc. For EU citizens, work represents more than 40% of the first residence permits, followed by family reunification (37%)[6]. Given the large proportion of first residence permits granted on the grounds of work, we can assume that immigration from EU countries can partly be explained by economic factors (GDP per capita differentials, unemployment rate, employment rate, tax regime, etc.), but also by the presence of European and international institutions on Belgian territory and, as the case may be, by proximity with Belgium. Regarding non-EU citizens, the residence permits issued for family reunification represent 50% of permits granted, while permits granted for 'other reasons' also make up a significant proportion (more than 20% in 2013). In particular, this category includes recognised refugees[7] and the beneficiaries of subsidiary protection[8]. Together, the immigration of non-

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[4]   Perspectives démographiques 2014-2060, Population, ménages et quotients de mortalité prospectifs, Federal Planning Bureau and Statistics Belgium, March 2015.

[5]   Perspectives démographiques 2014-2060, Population, ménages et quotients de mortalité prospectifs, Federal Planning Bureau and Statistics Belgium, March 2015

[6]   Source: Federal Public Services – Home Affairs – Immigration Office.

[7]   According to the definition laid out in the Geneva convention, a refugee is someone who "owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it."

[8]   A beneficiary of subsidiary protection is a person who has been granted subsidiary protection status. This person is a foreigner who does not fulfil the requirements for obtaining refugee status but who faces the real risk of being subjected to serious harm if he/she returns to the country of origin.

EU citizens for reasons of 'family reunification' and for 'other reasons' represent close to 80% of the first residence permits. For these two reasons, the evolution of traditional economic variables as determinants of the evolution of immigration seems a priori less relevant.

11.   These statistics are based on the legal reason for authorising residence on Belgian territory. In fact, the reasons why a person migrates are often numerous and complex. There is considerable interaction between push and pull factors, which has led in particular to the development of many theories on international migration. Consequently, the statistics on residence permits based on the (legal) reason for issuing the permit should be considered as one of the indicators of the reason for migration and not as the only reason. The reality is much more complicated.

12.   To have a better understanding of the reasons for migration according to nationality[9], assumptions about the future evolution of international immigration of foreign people have been specified for several years in the population projections for three separate groups:

- the old Member States of the European Union (EU15 apart from Belgium);
- the new Member States of the European Union (EU13);
- third countries (or non-EU countries).

b.   *Immigration from the EU13*

13.   Over the period 1991-2013 (data available from the National Register), immigration from EU13 countries was mainly limited to three countries: Romania, Poland and Bulgaria. As illustration, in 2013, more than 85% of immigration from EU13 countries originated from Romania (39%), Poland (30%) and Bulgaria (16%).

14.   As concerns the evolution of migration flows from the EU13, immigration to Belgium has risen significantly from each of these countries since the European

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[9] The statistics by nationality included in this document are based on the individual's current nationality. It is therefore not the nationality of origin. The rest of the document often refers to immigration 'from'. Therefore, it refers to the current nationality of the individual (which could differ from the country of previous residence or of birth).

Union membership[10] in 2004 or 2007. The regularisation campaign launched in 1999 also had an (upward) effect on the immigration observed in 2001. In total, immigration from Poland, Romania and Bulgaria (in absolute terms) is ten times higher than that from the other EU13 countries together. This is partly due to the population size of these three countries, which represent the majority of the EU13 population: on average, over the period 1991-2013, the Polish, Romanian and Bulgarian populations respectively represented 35%, 19% and 7% of the EU13 population.

15.   However, some countries have a larger population than Bulgaria, but a lower immigration level to Belgium (the Czech Republic and Hungary, both of which have a share of around 9% of the EU13 population). Thus, the population size is not the only explanatory variable in the number of immigration flows from EU13, which is not surprising. This is confirmed by the analysis of the emigration rates from EU13 countries to Belgium: since their accession to the EU, the emigration rates of Bulgarians, Romanians and, to a lesser extent, Poles have been higher than those of the other EU13 countries.

16.   A data analysis of the relationship between emigration rates from the EU13 countries to Belgium and the ratio of (nominal) GDPs per capita between Belgium and the different EU13 countries has been executed. This exploratory analysis highlights that Bulgaria, Romania and, to a lesser extent, Poland have not only an emigration rate to Belgium which is higher than those of the other countries but also a relative attractiveness indicator. The difference is even more striking after their membership to the European Union. This data analysis suggests a relationship between the immigration level and the relative economic attractiveness of Belgium that is all the more significant since the regulatory barriers to intra-European immigration have been reduced. In particular, the relatively larger share of immigration from Bulgaria and Romania seems to be attributable, among other factors, to a relatively larger gap between the GDP per capita in Belgium and that of the country of origin.

17.   From that perspective, it seemed relevant to use an econometric approach in order to estimate the relationship between the relative economic attractiveness of Belgium and immigration from EU13 countries. The modelling exercise focused

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[10]   Their accession to the European Union was subject to temporary restrictions regarding the free movement of workers (advance application for a work permit), which did not prevent the rise in immigration to Belgium. These restrictions were in force until 2009 for countries that joined the EU in 2004 and until 1 January 2014 for Romania and Bulgaria. They still apply for Croatia.

on the three countries that show a high immigration level (Poland, Romania and Bulgaria).

18. The potential explanatory variables had to fulfil at least three conditions in order to be taken into account in an econometric model: observations available over a period that is long enough, availability for Belgium and the EU13 countries that were selected for the analysis (Poland, Romania, and Bulgaria) and availability in projection.

19. The selected specification of the equation allowing us to estimate immigration from country i_{eu13} includes as dependent variable the emigration rate to Belgium[11] ($IMMI_{ieu13}/POP_{ieu13}$) and as explanatory variables:
− Immigration in t-1
− The ratio of real GDPs per capita (GDP_{BE}/GDP_{ieu13})

− Dummy variables for specific (structural or temporary) events which have had an impact on immigration from UE13 countries (2001 - regularisation campaign started in 1999, *D_REGUL*; 2004 or 2007 - accession to the European Union, *D_ADH;* period of flow stabilisation several years after adherence, *D_STAB*).

$$\frac{IMMI_{FROM\ ieu13}(t)}{POP_{ieu13}(t)}$$
$$= \beta_1 * IMMI_{FROM\ ieu13}(t-1) + \beta_2 * \frac{PIB_{BE}}{PIB_{ieu13}} + \beta_3 * D_{REGUL} + \beta_4 * D_{ADH}$$

$$+\beta_5 * D\_STAB + \varepsilon_{ieu13}$$

20. Table 1 shows the estimation of equations for Poland, Bulgaria and Romania. All estimated coefficients have the expected sign. An increasing attractiveness (i.e. a rise of the real GDPs per capita ratio) leads to a higher emigration rate to Belgium (the inverse relationship is observed in the case of decreasing attractiveness). Immigration lagged by one year has a positive impact on emigration rates in the following period, which is partly due to a network effect and specific links between these countries and Belgium and also to family reunification representing a significant share of immigration from the EU13. Finally, "political events" also have an impact on immigration. In particular, the accession to the European Union is a key variable to *explain* the evolution of immigration from EU13 countries over the estimated period. For Poland, the

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[11]   Per 10 000

indicative variable aiming to take into account a certain stability of flows after the post-accession years has a negative coefficient. The fast-growing immigration from Poland as soon as it became member of the EU was indeed followed by a period of stability, if not a decrease in the flows. It is too early to estimate this impact on the flows from Romania and Bulgaria. In the model, the estimated effect for Poland is applied in projection to Romania and Bulgaria, which should indeed follow the same trend.

Table 1 Estimation of the regression parameters

| Explanatory variables	Poland Estimation (t-value)	Romania Estimation (t-value)	Bulgaria Estimation (t-value)
IMMI(t-1)	0.0002 (6.5)	0.0004 (6.5)	0.001(4.9)
Attractiveness	0.02(1.0)	0.02 (1.0)	0.03 (2.2)
D_REGUL	0.49 (2.3)	0.13 (0.3)	0.26 (0.6)
D_ADH	0.64(3.7)	1.37 (3.0)	3.22(6.9)
D_STAB	-0.17 (-0.92)	--	--
Durbin-Watson	2.6	1.52	1.97
Estimation period	1993-2013	1993-2013	1993-2013

21. This specification has been selected for the following reasons:

1. The signs of the coefficients are consistent.

2. The signs and the significance of coefficients are weakly sensitive to the choice of the economic attractiveness indicator: real or nominal GDP, GDPs' ratio or difference in level or in percentage.

3. The specification seems to be valid no matter which sample is selected:

– The significance of the variable linked to attractiveness becomes stronger when the estimation is limited to the period 2004-2013 (after the adhesion to UE).

– By deleting years at the beginning and/or at the end of the period, the estimated coefficients are stable and the immigration projection is barely modified.

22. The projections of immigration from Poland, Romania and Bulgaria, on the basis of the estimation of the equation regarding the emigration rate from these countries to Belgium, are shown in graph 1. As regards the other EU13 countries, the expected evolution is based on the projected evolution of Poland: except for Croatia, the countries which are not explicitly taken into account in the model joined the EU in 2004, like Poland. The immigration decline from EU13 countries expected in the long term is attributable to the expected decrease in the economic

attractiveness of Belgium (on the basis of the Ageing Working Group projections[12]) and of the population in the EU13 countries (on the basis of EUROSTAT's population projections[13]).

Graph 1 Projection of immigration from the EU13 and expected evolution of the relative economic attractiveness of Belgium
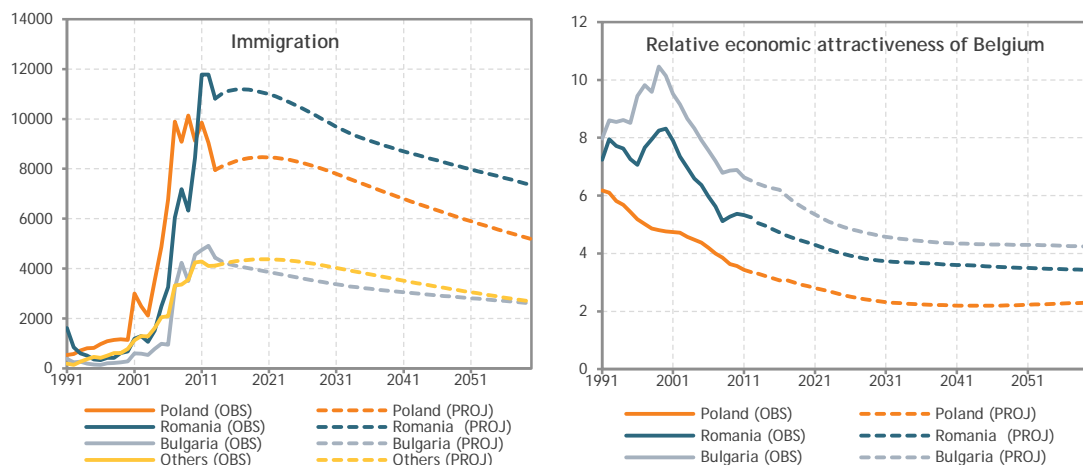
Sources: Immigration 1991-2013: NR-Statistics Belgium; 2014-260: Perspectives démographiques 2014-2060; economic variables: 1991-2015, DG ECFIN Autumn 2014; 2016-2060: Ageing Working Group

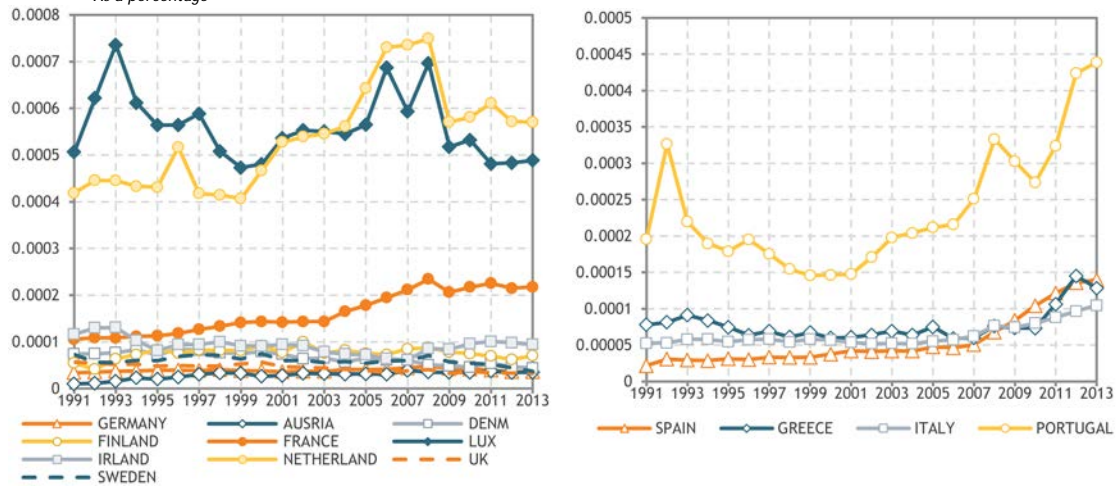c.   *Immigration from the EU15 (except Belgians)*

23.   Immigrants from the EU15 mainly originate from France (14 328 immigrants in 2013) and the Netherlands (9 568 immigrants in 2013), which represent 48% of immigration coming from the EU15 in 2013. And immigration from all four neighbouring countries (France, Germany, the Netherlands and Luxembourg) accounts for 60% of immigration from the EU15.

24.   Albeit relatively stable during the 1990s, total immigration from the EU15 has been increasing considerably since the beginning of the 2000s. However, the historical evolution of the emigration rates from UE15 to Belgium is not as strong or is stable (graph 2, left-hand side). The immigration rise (started in 2009-2010) from Spain, Italy, Portugal and Greece, explained notably by the economic and financial crisis, is shown in Graph 2 (right-hand side).

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[12]   European Commission, The 2015 Ageing Report, Underlying Assumptions and Projection Methodology, European Economy 8/2014.
[13]   EUROPOP2013.

Graph 1   Emigration rates from EU15 countries to Belgium
           As a percentage

Sources: NR-Statistics Belgium, FPB calculations

25.   At least two elements argue for an in-depth analysis of the link between the relative economic attractiveness of Belgium and immigration from the EU15:

-    The increase in immigration in Belgium as a result of the economic and financial crisis, which hit some EU15 countries more than others, in particular as regards the unemployment rate.

-    The relatively significant share of first residence permits that are in connection with paid work.

26.   Nevertheless, migrants coming from the EU15 – except perhaps the four countries that were particularly hit by the crisis – do not migrate to have a better well-being or better economic conditions, which could be more the case for the EU13 countries or the rest of the world. The attractiveness of Belgium for other EU15 countries is due to a larger extent to other factors, such as the presence of European and international institutions or the differences between tax regimes. Moreover, immigration from the EU15 mainly concerns neighbouring countries for which the housing market or the tax system could be more attractive in Belgium.

27.   Given the observations and arguments mentioned above, a projection of immigration from EU15 countries on the basis of constant emigration rates seems more suitable than on the basis of an absolute number of immigrants per year (as done in the past).

28.   However, for the EU15 countries that have been hard hit by the crisis, it seems in the short term that there is a link with economic determinants, and in particular with the unemployment rate. But in the long term and assuming unchanged policy and societal

organisation, international institutions predict a gradual exit from the crisis; emigration rates would then return to pre-crisis levels. Moreover, given the importance of population projections in the short/medium-term projections, it seems necessary to apply a specific short-term assumption for immigration from those countries, all the more so since immigration especially affects the working-age population, which is a key determinant of the labour market situation.

29.   For UE15 countries in crisis, an econometric model has been estimated in order to measure the impact of economic determinants (employment rate, unemployment rate and GDP) on immigration from these countries. The unemployment rate (UR) seems to be the most relevant indicator to explain the immigration rise from these countries as a result of the economic and financial crisis. The dependent variable has been defined as the ratio between the number of immigrants (IMMI) and the population (POP) of the sending country, i.e. the emigration rate to Belgium. The equation is thus defined in a rather simple way:

$$\frac{IMMI_{FROM\ ieu15crise}}{POP_{ieu15crise}} = \beta_1 + \beta_2 * UR_{ieu15crise} + \varepsilon_{ieu15crise}$$

30.   By estimating this equation over the period 1991-2013, we get a rather poor specification even when other available explanatory variables (GDP, employment rate) are integrated in the estimation. These results confirm what is mentioned above, i.e. that immigration from those countries in the pre-crisis period was more attributable to other factors than purely economic determinants such as employment, GDP differential or unemployment. By estimating the equation over the period 2005-2012, we have an acceptable specification[14]. The effect of the economic and financial crisis on the immigration of the last years seems to be well captured by the unemployment rate.

31.   On that basis, it seems relevant to use the results of these estimations to determine the short-term evolution (the next three years) of immigration from the countries that have been particularly hit by the economic and financial crisis. In the long term (2025-2060), immigration from those countries follows the principle defined for the other EU15 countries, using a constant average emigration rate. For countries in crisis, this rate is defined on the basis of the most recent pre-crisis years. The period covering the years 2017 to 2025 has to be seen as a transition period back to a balanced economic situation of the countries in crisis. The return to balance in 2025 is based among other factors on the medium-term projections of the European Commission[15] that predict an output gap

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[14] The coefficient relating to the unemployment rate is significant and has the appropriate sign and the value of the Durbin-Watson test is near two (except for Italy).
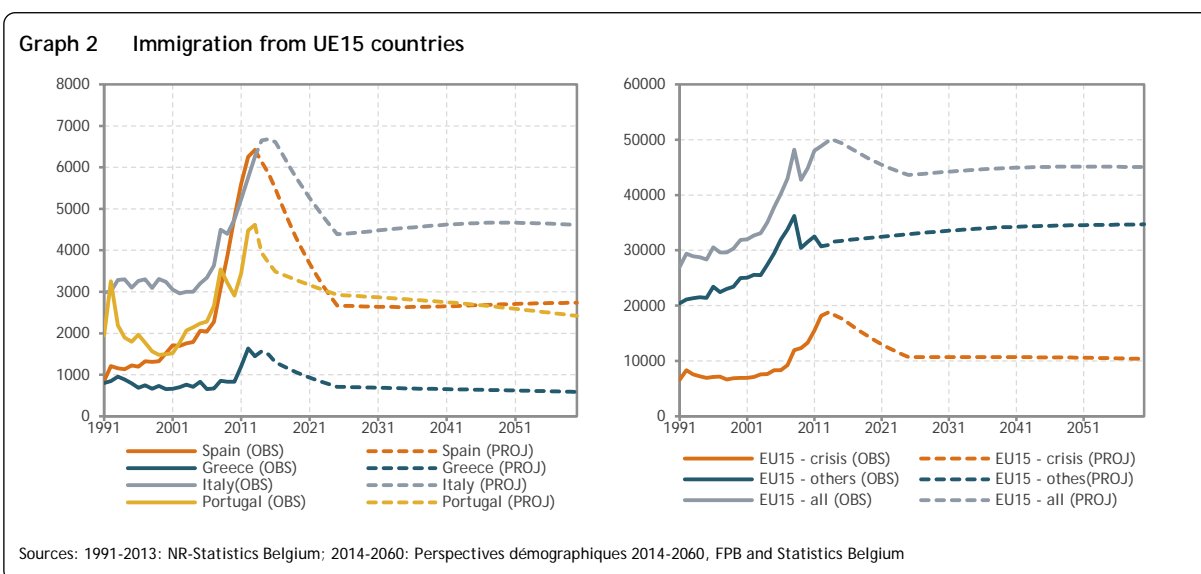
[15] Working papers of the European Commission that are not published.

closure [16] as from 2019, but also on a further decrease in the unemployment rates over the period 2020-2024 for some countries currently in crisis.

32. As concerns the other EU15 countries, it is assumed that the emigration rate is constant until 2060. The emigration rate to Belgium by country is obtained by calculating the average of the emigration rates over the last three years observed (2010-2012).

33. In order to obtain the future immigration from the EU15 countries, the projected emigration rate per country is multiplied by the projected population in the country of origin (based on Eurostat's population projections[17]).

34. The projections of immigration from the UE15 countries are presented in graph 3. The number of immigrants from the "other countries" of the EU15 increases until 2060, but at a markedly slower pace than the increase of the last ten years. This is particularly due to the expected evolution of the population in these countries, which in the long term would grow slower than in the past or even decrease in some countries. Moreover, the emigration rates of some countries (France and the Netherlands) were also relatively high between 2005 and 2008. Immigration from the countries hit by the crisis is going to decrease in the short term, based on the hypothesis of a progressive economic recovery.

Graph 2   Immigration from UE15 countries

Sources: 1991-2013: NR-Statistics Belgium; 2014-2060: Perspectives démographiques 2014-2060, FPB and Statistics Belgium

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[16] The output gap is defined as the gap between the real GDP level and its potential level.
[17] EUROPOP2013.

d. *Immigration from the third countries*

35. We certainly cannot deny that migrants from third countries partly seek higher 'well-being', which is to some extent expressed by the relative position of Belgium's GDP, but this concept of well-being is much more comprehensive than relative economic attractiveness. Moreover, one can assume that the disparities in GDP are so great in some cases that a small narrowing should not influence significantly the immigration levels. Finally, several studies[18] have already demonstrated that the relationship between economic development and migration flows is not linear but shows an inverted "U" curve. First, for low-income countries, increased income will lead to more emigration. Indeed, in order to migrate, individuals have to be able to pay the various travelling costs. It is only when a certain degree of wealth is achieved that an increase in income in the country of origin (or a decline in the relative economic attractiveness) will slow down emigration to more developed countries.
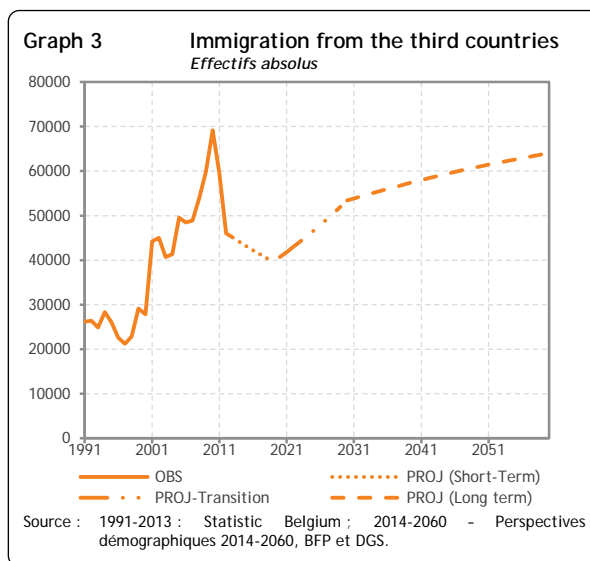
36. Family reunification, the primary legal reason for immigration for citizens from third countries, can be explained in particular by the number of immigrants on the Belgian territory and by the conditions for access to family reunification. The second category for which first residence permits are delivered (immigration reasons that are not related to family reunification, work or studies) includes the recognised refugees and the beneficiaries of subsidiary protection. Immigration for these two reasons depends on the (political, healthcare and economic) conditions in the countries of origin, and again, on the conditions for access (and procedures) to these statuses in Belgium.

37. Determining the future path of immigration from third countries on the basis of a past trend and by possibly integrating economic determinants does not seem easy nor relevant. An alternative might be to determine a long-term immigration level that would be reached progressively. This level would be defined by an average calculated over the whole available observation period. Taking into account the longest available observation period allows integration of the various "unpredictable" elements that influence in particular immigration from third countries (geopolitical context, which impacts asylum applications; migratory policies, which influence family reunifications; etc.) and that would affect this immigration in the future. When and to what extent these elements will impact the expected evolution of long-term immigration is unpredictable. Using an average based on previous observations may thus be justified.

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[18] See DE HAAS, H., 2010, "Migration transitions: a theoretical and empirical inquiry into the developmental drivers of international migration", Working Paper 24, International Migration Institute, University of Oxford.

38.   This level could be defined on the basis of an average number of migrants or average emigration rate from the third countries to Belgium. To be consistent with the assumptions on immigration from EU countries, the approach used is based on a long-term emigration rate to Belgium. The average emigration rate over that period is 0.7 per 100 000. Selecting the emigration rate to Belgium (although defined for all non-EU countries) allows – to some extent and implicitly –specific networks and links between Belgium and some non-EU countries to be taken into account (the level of rates is partly due to these close links). We then assume that these specific profiles/networks are unchanged over the projection period. Finally, determining a long-term constant emigration rate to Belgium (rather than a constant number of immigrants) also makes it possible to take into account the long-term expected evolution of the population of third countries.

39.   Therefore, the long-term immigration level from third countries corresponds to the long-term projected non-EU population (World Population Prospects 2012[19]), multiplied by the long-term average emigration rate (to Belgium). This level is applied as from 2030. In the short term (2013-2019[20]), the immigration evolution takes into account the recent developments, influenced in particular by the policies that are currently being implemented or by specific migration flows (such as asylum seekers). Note that the restrictive migration policy could lead in the medium term to diversion strategies in order to be granted the right of residence on another ground, or could foster illegal immigration[21]. The long-term level is progressively reached during the 2020-2029 transitory period (Graph 4).

Graph 3   Immigration from the third countries
Effectifs absolus

Source : 1991-2013 : Statistic Belgium ; 2014-2060 – Perspectives démographiques 2014-2060, BFP et DGS.

[19]   United Nations, Department of Economic and Social Affairs, Population Division (2013). World Population Prospects: The 2012 Revision.
[20]   The short-term period for international immigration from third countries takes a whole legislative term into account, assuming that migratory policies remain unchanged during this legislative term.
[21]   See the overview article published recently, Cris Beauchemin, 2014, Entraver les migrations : Pour qui, comment et pour quels résultats ?, Documents de Travail 211, Institut National d'Études Démographiques.

40.   This method allows the following elements to be taken into account in the long term:

–   The growth in the world population (in third countries) up to 2060 and therefore a growth in the number of potential migrants;

–   Globalisation and mobility, which foster international migration flows.

41.   This method also yields more stable long-term projections: the annual revisions of long-term immigration should be less dependent on short-term fluctuations in immigration (which was the case for the method used in the population projections published before 2015).

III.   Emigration of foreigners

42.   Up to the population projection published in 2014 by the FPB and Statistics Belgium, the expected evolution of emigration from Belgium was based on exit rates to other countries (by age, sex, nationality and district) estimated on the basis of the average of the last years observed. They were kept constant over the whole projection period. As regards nationality, for this assumption, the model only makes a distinction between Belgians and foreigners.

43.   Emigration of foreigners from Belgium is shown in graph 3 (left-hand side) for the period 1991-2013. It is going upward in both absolute terms and rates. Given the recent trends, using a constant emigration rate tends consequently to underestimate the expected evolution of emigration.

Graph 4   Emigration of foreigners
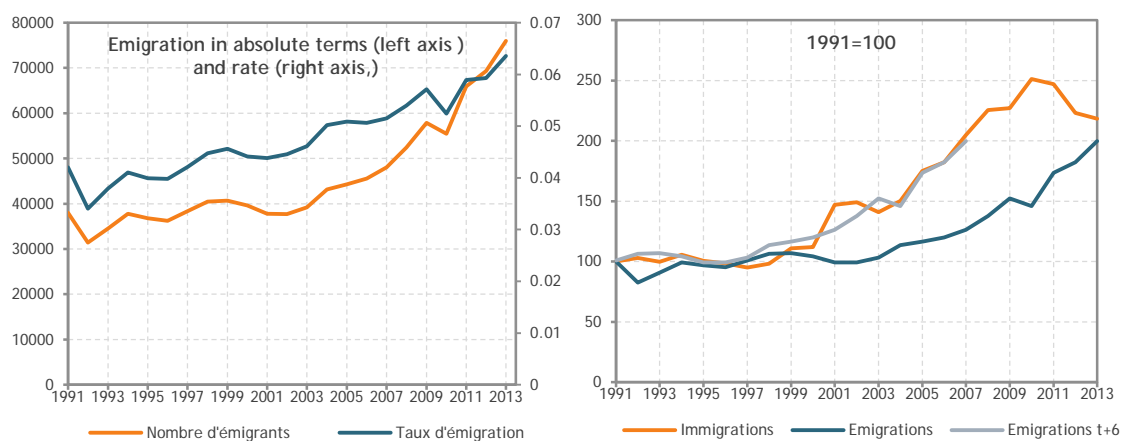
Sources: 1991-2013: NR-Statistics Belgium; 2014-2060: Perspectives démographiques 2014-2060, FPB and Statistics Belgium

44. Graph 3 (right-hand side) compares the evolutions of immigration and emigration of foreigners. Their paths are quite similar with a 6-year lag between the evolution of immigration and that of emigration (Emigration t+6 in graph 6).

45. Given these observations and in the absence of in-depth studies concerning return migration flows, the assumption on the emigration rates of foreigners from the Belgian territory has been adjusted by taking into account the historical increase in emigration rates and the relationship between immigration and emigration. For the sake of consistency with the historical evolution, it seems logical to project an evolution of the emigration of foreigners that is consistent with the future evolution of immigration. More specifically, the observed emigration rates of foreigners follow, in projection, the future evolution of the immigration of foreigners, with a 6-year lag.
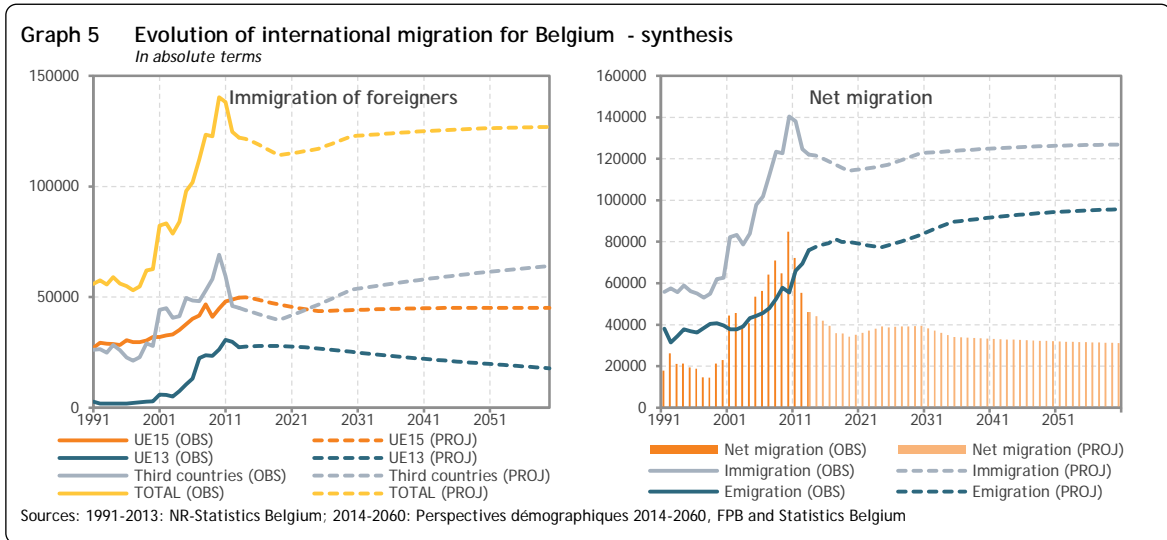
IV. Projection of international migration: synthesis

46. The projection of immigration from EU15 countries is based on constant emigration rates from the EU15 countries to Belgium. Nevertheless, for the EU15 countries that have been particularly hit by the economic and financial crisis, there seems to be a link in the short term with economic determinants, in particular with the unemployment rate. This link is estimated using an econometric approach and is only taken into account in the short-term projections. In the long term, international organisations expect, assuming no change in policy and societal organisation, a gradual exit from the crisis.

47. The assumption on immigration from EU13 countries takes into account a relative economic attractiveness index of Belgium compared to the EU13 countries. This index is based on the GDP differential per capita between Belgium and the EU13 countries. An econometric model has been specified to estimate the relationship between relative economic attractiveness and emigration rates from the EU15 countries. Modelling efforts focused on three countries: Romania, Bulgaria and Poland. Indeed, immigration from EU13 countries to Belgium mainly comes from these three countries.

48. Concerning non-EU countries, the emigration rate form these countries is defined by an average calculated over the whole available observation period. Taking into account the longest available observation period allows us to capture the average combined impact during the projection period of the different "unpredictable" elements that particularly influence immigration from third countries (geopolitical context, which impacts asylum applications; migratory policies, which influence family reunifications; etc.) and that should affect this immigration in the future. When and to what extent these elements will impact the expected evolution of long-term immigration is unpredictable. Using an average based on previous observations thus seems to be justified.

49.   The projection of immigration of foreigners (Graph 5) in then obtained by multiplying the projected emigration rates by the respective projected population in the country of origin ((based on Eurostat's population projections for EU13 and EU15 and on the United Nations Eurostat's population projections for the third countries).

Graph 5   Evolution of international migration for Belgium - synthesis
In absolute terms

Sources: 1991-2013: NR-Statistics Belgium ; 2014-2060: Perspectives démographiques 2014-2060, FPB and Statistics Belgium

50.   On the ground of growing mobility and globalisation and on the basis of the historical evolution of the emigration rates from Belgium to foreign countries, the emigrations are expected to increase in the long term future.

51.   During the year 2015, Belgium, as many European countries, had to face substantial increase in asylum seekers, which has consequence in the population projection in the short term. This impact has been integrated in the population projection for Belgium published in March 2016[22]. The presented methodology is indeed suitable to introduce specific short-term shock as concerns international migration, without substantial impact on the long term evolution of migration.

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[22]   For more details: Federal Planning Bureau and Statistics Belgium, Perspectives démographiques 2015-2060, Population, ménages et quotients de mortalité, mars 2016.