European Centre of Expertise (ECE) in the field of labour law, employment and labour market policy

Labour Market Policy Thematic Review 2018: An in-depth analysis of the emigration of skilled labour

Hungary

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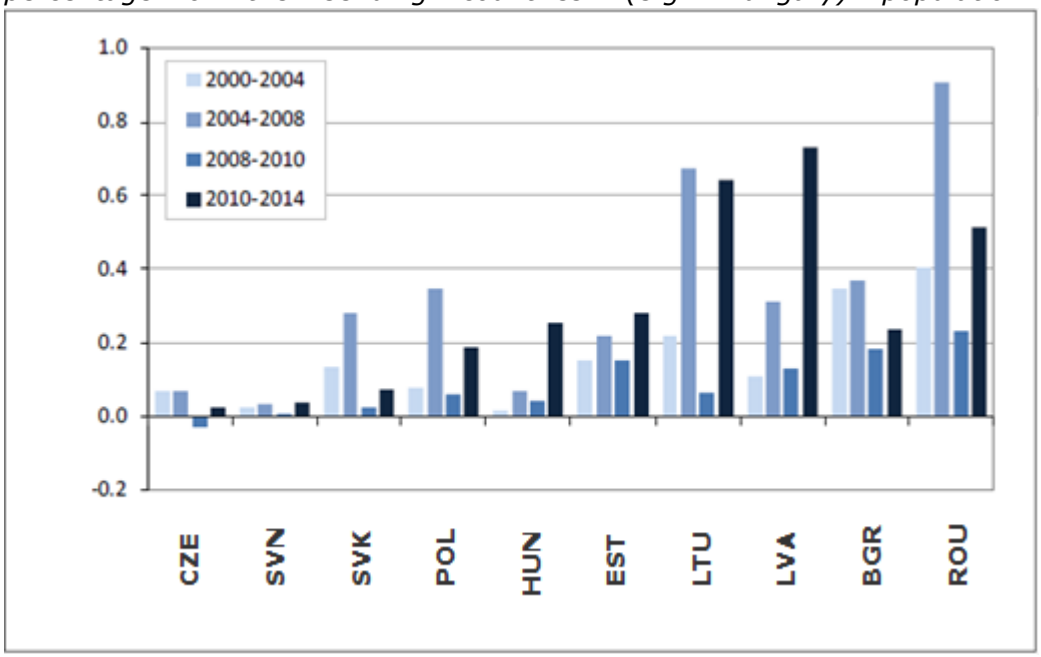
1 Introduction: the demographic and labour market situation in Hungary

According to data sources, approximately 300 000 to 400 000 Hungarian-born citizens lived outside Hungary in 2013.[1] Although more up-to-date data are not available, we know that the pace of emigration peaked in 2013, meaning this figure encapsulates the largest wave of migration. The main destination countries of Hungarian emigrants are Germany, Austria and the UK. Approximately 80 % of Hungarian ex-patriates live in these three countries. Hungary experienced a significantly smaller degree of emigration following the EU accession of 2004 than other new EU member states (see Figure 1 below). While the share of emigrants from Slovakia or Poland between 2004 and 2008 increased by 0.3 % of the total population each year, this share was smaller than 0.05 % in Hungary during the same period. But after 2010, emigration speeded up and was more than 0.2 % in Hungary. Until 2013, emigration flows steadily increased, and were not substantially influenced by the various push and pull factors (e.g.: EU accession, global financial crisis, austerity measures) assumed to be potentially driving or slowing down emigration.[2]

Figure 1. Changes in the share of EU8+2 citizens living in the EU15 states as a percentage of the sending countries' (e.g. Hungary) population.



Source: (Hárs, 2016, Figure 1.)

The most important characteristics of the Hungarian migrant population is that it is younger and more likely to have vocational/secondary or higher education than the average Hungarian person. Recently, though, the more educated have also become more likely to emigrate (which resembles the old Member States' corresponding trends). Although there is some return-migration to Hungary, it does not have the potential to outweigh the migrant flows.

[1] The figures are from i) the Hungarian Labour Force Survey (LFS), ii) statistics of destination countries (mirror statistics), iii) national census, and iv) from other ad-hoc data modules, surveys

[2] For the slow-down experienced in 2014 see Figure 2.

Up until recently, migration has not impacted massively on the Hungarian labour market and economy. In the past two years, however, labour shortages have become an increasing problem with more sectors reporting difficulties in recruiting workers. Although not yet documented by empirical studies, wage increases are likely to appear in the current and coming years due to the serious labour shortages and the increasing number of strikes. While labour shortages on their own may lead to an increase in wages, successful trade union negotiations and strikes have also become more frequent in the Hungarian private sector.

In the long-run, the current migration and brain drain can have a detrimental effect on the economy by taking away the highly educated population and thus harming the economy's innovation potential. But emigration is also an opportunity if the emigrants (or at least some of them) can be convinced to return to the home country with elevated skills. Even though migration stopped increasing in 2013, every year a significant number of individuals, and in particular young people, move abroad.

2 Emigration of skilled labour

This section provides an overview of migration flows in a country, focusing on the emigration of skilled labour.

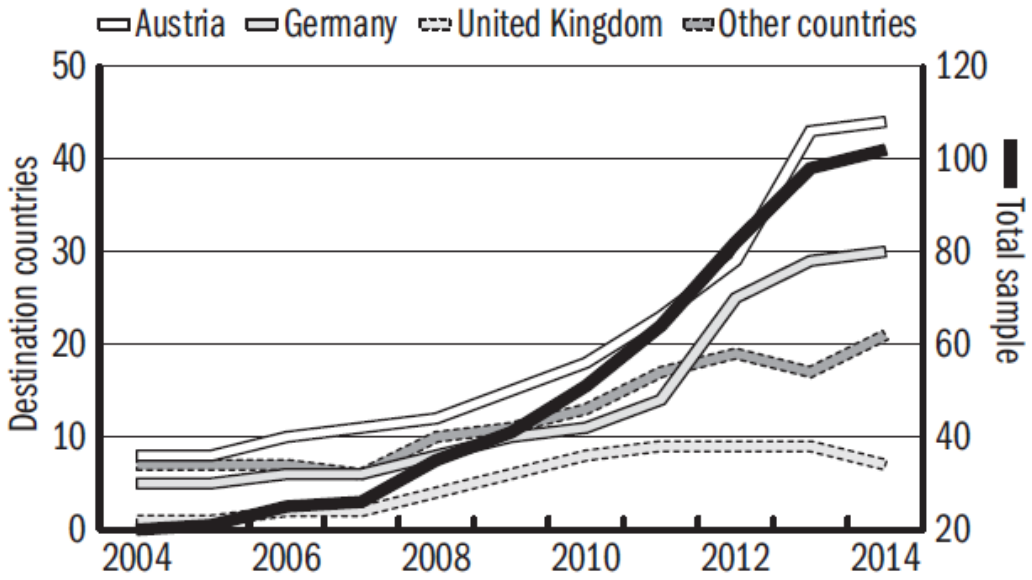
First we will outline the characteristics and patterns of the movement of skilled workers. Migration from Hungary has been the subject of a series of recent papers because migration flows speeded up significantly during the past 5-10 years. Research on migration is, however, limited by data availability and quality. The available data come from i) the Hungarian Labour Force Survey (LFS), ii) statistics of destination countries (mirror statistics – LFS or destination countries' census data), iii) national census, and iv) from other ad-hoc data modules, surveys. Mirror statistics only contain those migrants who live abroad for a longer period (at least a year) and are registered in the destination country. The Hungarian LFS captures only those migrants whose relatives still live in Hungary and who are themselves employed abroad. The LFS also contains the commuters (who, on the other hand, are difficult to separate from migrants who live and work permanently abroad). The national census contains not only those who are part of the labour market, although it does not provide any information on people whose entire household moved abroad. Ad-hoc surveys on migration tend to include only those who permanently moved abroad (and are not commuters).

Hárs & Simon (2015) used LFS data to study migration dynamics between 1999 and 2013. The analysis is divided into two main periods, 1999-2008 and 2008-13. They use logistic regressions to show how far individual, household and regional level factors contribute to the probability of migrating. In the following sections, the results of Hárs and Simon are described since their overview is the most detailed of the available analyses.

We can also rely on the findings of Blaskó & Gödri, (2014), who analyse a unique dataset, called 'Hungarians abroad dataset – SEEMIG survey', which contains information about 1 200 people who emigrated after 1989. It is important that this dataset contains information on people whose entire family emigrated, but not on the commuters (as opposed to the LFS). The SEEMIG survey was linked to the Hungarian LFS dataset. The authors use logarithmic regressions to analyse the impact of various explanatory factors on migration decisions. We also use the results of (Blaskó and Gödri 2016), who – in addition to their earlier study – use population census and mirror statistics to describe the composition of the migrant population.

Figure 2 shows the evolution of working migrants to the primary destination countries during the past 10 years based on EU LFS data. Migration speeded up in the 2007-14 period, although in 2014, there seems to have been a slowdown in the pace of migration. The graph is based on EU LFS statistics, which underestimates the actual number of Hungarian citizens living abroad.[3] However, the graph describes well the *dynamics* of migration to the main destination countries. The number of total migrants is estimated to lie in the range of 300 000 to 400 000 individuals (depending on the data source used), as described by Blaskó and Gödri (2014).

Figure 2. Labour migration to the main destination countries between 2004 and 2014



Source: Hárs & Simon, 2016 Figure 2.3.1

Individual level data on migration from Hungary

Gender

Looking at the raw statistics of the gender distribution of migrants, it is clear that men are overrepresented. Although the difference became less pronounced by the second period (2008 – 2013), the share of males in the migrant sample is three times that of the female subpopulation.

Table 1. Male and female migrants between 1999 and 2013

	1999 q1- 2007 q4	2008 q1-2013 q1	Entire period
Male	78.5 %	74.9 %	76.1 %
Female	21.5 %	25.1 %	23.9 %

Source: (Hárs and Simon 2015)

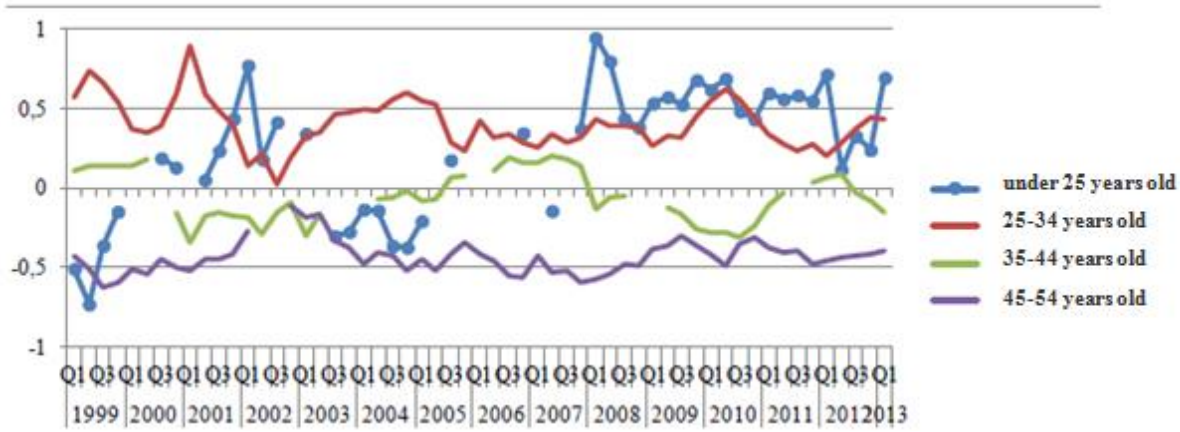
[3] Those identified by the LFS as working abroad only includes people who maintained a household in Hungary (and have some family members who can respond to the survey) and excludes those whose entire family moved abroad either recently or in the past (Hárs and Simon 2016).

The logarithmic regressions show that women's likelihood of migrating has stayed below that of the men in the entire observation period, although increased significantly towards the end of the period from 0.45 to 0.65. Blaskó and Gödri (2014) estimate that men are 17 % more likely to migrate than women. Blaskó and Gödri (2016) show similar results using census data.

Age

The following figure shows the migration selectivity index of the different age groups.[4] People younger than 35 are overrepresented in the migrant population compared to the total population in Hungary. People aged 45 and older are underrepresented in the migrant sample.

Figure 3. Selectivity index - migrants' age distribution



Source: Hárs and Simon, 2015, Figure 8.

People aged 35-44 participate in migration with more or less the same probabilities as the younger generations. The likelihood of people older than 45 to migrate, however, remains significantly lower than that of the younger (<30) age groups. The older generation's lag compared to the <30 age group shrinks from 40 % to 24 % by 2014.

Marital status

Single people are 1.5 times more likely, and singles with children are more than 2 times more likely to emigrate than their married peers without children. While in the early 2000s, the likelihood of single parents moving abroad used to be much lower than that of married couples, they now have a higher probability to migrate than before**.** This might be explained by the worsening living conditions of single parent families in Hungary. Blaskó and Gödri (2014) estimate that the probability of moving abroad is twice as high for single people as for those who are married or divorced, in line with the above estimations. Blaskó and Gödri (2016) find similar results based on census data.

Education[5]

[4] Migration selectivity index measures the ratio of certain subgroups' share in the migrant population and their share in the entire population.

[5] Based on the European Qualifications Framework (EQF) levels, Internet: http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32008H0506%2801%29. For those Member States who have not yet referenced their National Qualification Systems (NQFs) to the EQF, the NQF levels should be used for data collection, which should

Regarding school attainment, those with primary education are underrepresented, while people with vocational and secondary vocational education and higher education are overrepresented in the migrant sample compared to the whole population.

Table 2. Educational attainment in the migrant and total working-age population between 1989 and 2009 (in %)

School type (ISCED level)	Individuals living in Hungary	Individuals living abroad, migrated after 1989	Individuals living abroad, migrated between 1989 and 2009	Individuals living abroad, migrated after 2009
Primary edu. (1-2)	**17**	6	5	8
Vocational edu. (3CV)	**27**	23	22	25
Secondary edu* (3AG, 3AV and 4CV)	**35**	34	31	38
College (5A)	**12**	20	22	18
University (5A)	**8**	13	17	11

Note: Secondary educational attainment also contains vocational school attainment with final examination.

Source: Blaskó and Gödri (2014)

Depending on the data source used, there is some variation in the degree of overrepresentation across the different educational levels. The SEEMIG data source does not contain cross-border commuters and thus is likely to understate the share of those with vocational education. Similarly, data sources that do have information about cross-border commuters tend to have less information on long-term migrants. It seems that graduates are more likely to plan on the long-run and stay for many years abroad, while skilled manual workers remain more attached to the Hungarian labour market and therefore their migration tends to be limited to the short-term.

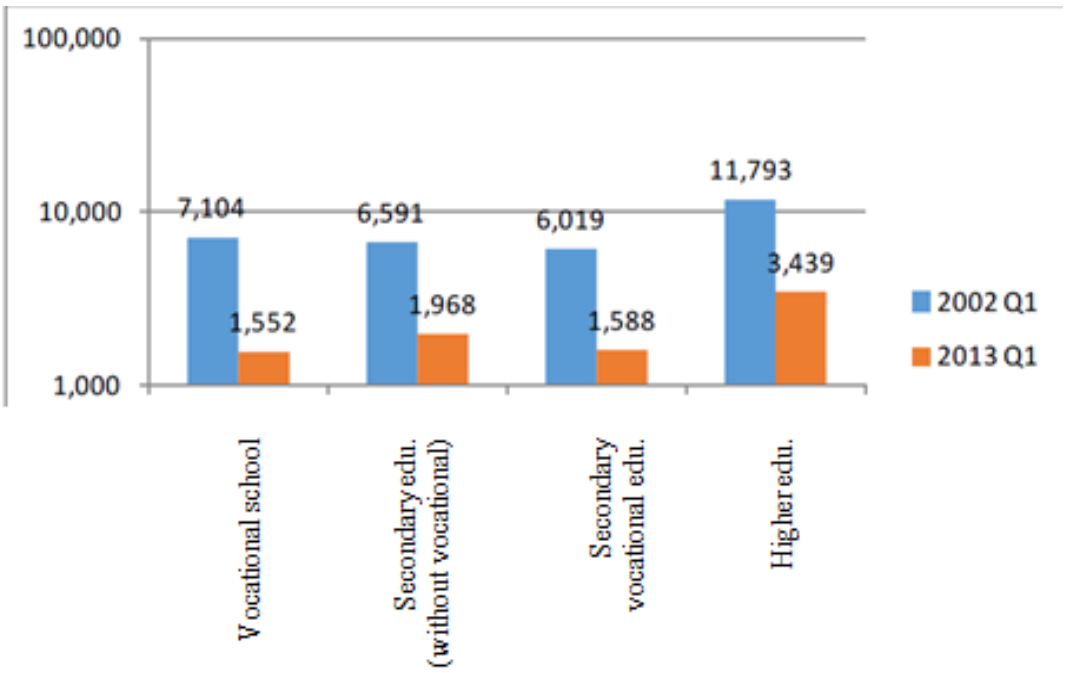
Disaggregated by target country, Germany and Austria receive a significantly larger share of people with vocational education and the share of those with a vocational degree is underrepresented in the sample of migrants to the UK. Instead, migrants with higher education degrees are overrepresented in the UK sample.

The regression analysis shows that in 2002, people with secondary education were 6-7 times more likely to migrate than those with primary education. Controlling for a set of explanatory variables shows that higher educational attainment increased the likelihood of migration as much as 12-fold compared to the likelihood of those with

later be translated into the EQF levels. In cases where the NQF level is not known, ISCED level one-digit codes Internet: (http://www.uis.unesco.org/Education/Documents/isced-2011-en.pdf) should be used for data collection, which can then be approximated to the EQF levels. And based on ISCED-F 2013, Internet: http://ec.europa.eu/dgs/education_culture/repository/education/tools/docs/isced-2013-fields-of-education_en.pdf

primary education only. The differences fell to 1.5-2 times greater probability for people with secondary education and 3.5 times larger probability for higher educational attainment compared to people with primary education by 2013. The reasons behind the declining differences are likely because of the increased participation of less highly educated individuals in migration.

Figure 4. Educational attainment and migration potential in 2002 and 2013



Source: Hárs Simon 2015, Figure 23.

These estimates are in line with the results of the logarithmic model of Blaskó and Gödri (2014). They find that those with vocational and secondary education degrees are 2.5 times more likely, and people with tertiary degrees are 4.5 times more likely to work abroad than their peers with primary education only.

Regional variation[i6]

Compared to the Central Hungarian region, all other regions have higher migration probabilities (mostly explained by the fact that Central Hungary is abundant in job opportunities). Western Transdanubia has a six-times higher migration probability due to its proximity to Austria and the large share of commuters, while the Northern Great Plain has a two-times higher probability in 2013.

Occupations[7]

Working in a position requiring a vocational qualification used to increase the likelihood of emigrating the most. The statistical model shows that people working in the manufacturing, the unskilled and machine operators have become significantly more likely to emigrate by 2013 than in 2002 and have a relatively strong likelihood of

[6] Based on the NUTS 2013/EU-28 - Nomenclature of territorial units for statistics, Internet: http://ec.europa.eu/eurostat/documents/3859598/6948381/KS-GQ-14-006-EN-N.pdf/b9ba3339-b121-4775-9991-d88e807628e3

[7] Based on the International Standard Classification of Occupations (ISCO), Internet: http://www.ilo.org/public/english/bureau/stat/isco/intro.htm

emigrating compared to other, non-manual tertiary and secondary positions. People in positions requiring higher education degrees were 1.5 times more likely to migrate than people in other, non-manual positions in 2007, but by 2012, this difference vanished, likely the result of the latter group's increased probability of migrating.

Seasonality

People in seasonal jobs were five times more likely to emigrate than those in regular employment in 2002, while by 2013 this ratio reversed, those in regular employment were four times more likely to emigrate. This might be explained by the falling share of seasonal jobs in the target countries.

Blaskó and Gödri (2016) look at the labour market status of migrants as compared to the total population: 86 % of those aged 15–64 years, and 91 % of 25–64-year-olds were employed (while the same figures in Hungary were 57 and 64 %). The employment rate of men aged 25–64 was particularly high (96 %). Women in the same age group were also most likely to be employed (80 %), but a significant share (11 %) of dependents were also present here.

The key push and pull factors for movement of skilled labour

Hárs and Simon (2015) test the assumption that there have been three important phases with specific push and pull factors affecting the evolution of migration since 1989 in Hungary. First, a strong pull factor might have been the EU accession (2004). Second, the push effect of i) the austerity measures implemented in 2007 and ii) the economic slowdown following the global crisis in 2008. Another strong push factor is associated with the widely unpopular measures of the new government that took office in 2010. Most other studies (e.g. (Hárs 2016; Kahanec, Zaiceva, and Zimmermann 2009) focusing on migration identify similar major phases and push and pull factors.

Hárs and Simon (2015), however, also test their assumptions in a macro model, which shows that migration in Hungary is currently in its initial, take-off phase and that migration follows an exponential pattern driven by internal, automatic (self-perpetuating) processes. That means that the pull and push factors listed above are not key determinants/or are not on their own responsible for the migration patterns.

Varga (2016) examines the migration of physicians and dentists using a competing risks model and finds that the opening up of the labour market of Austria and Germany was a strong pull factor, resulting in a four- to sevenfold increase in the migration of physicians and dentists (except for the older age groups).

Atoyan et al. (2016) also stress the importance of institutions (for the skilled migrants) and welfare benefits (for the unskilled) in both the sending and the receiving countries being key push and pull factors.

Emigration versus internal migration

Labour mobility is traditionally very low in Hungary. Bálint & Gödri, (2015) examines the internal migration in Hungary up until 2014 and finds that the degree of internal migration is very low even compared to Austria, or the Czech Republic (the Slovak internal migration rates are even lower). But the number of permanent internal migrants, and the migration rate per thousand population increased significantly in 2014 – following years of steady decline between 2007 and 2013. The number of permanent migrants increased from 192 000 to 215 000 (exceeding the level of permanent migrants in 2009). Still, migration predominantly occurs between settlements in a given county (NUTS3 region), and is less widespread across counties

or regions, which is not comparable with international migration, given the short geographical distances.

The region of Central Hungary and particularly Budapest have been the main destinations of internal migration since the turn of the millennium. The greatest population shift was seen in 2007: the central region registered a migration gain of 11 000 people from the Eastern part of the country and 4 000 from the West of Hungary. In recent years only Western Transdanubia had a positive migration balance; Central Transdanubia lost its previous moderate migration gain after 2009. The largest internal migration losses have been suffered by the regions of Northern Hungary and the Northern Great Plain (Bálint & Gödri, 2015).

The relationship between wage increases abroad and over-qualification of job takers

There is very little literature available on how much wage increase is necessary to motivate mobility into a job for which one is overqualified. But there is available research on the factors explaining the intention of doctors to migrate. Approximately 12 % of Hungarian doctors work abroad. Hárs & Simon, (2016a) conducted a survey among 1 000 doctors, asking them about their perception of the most important factors influencing migration decisions. Seventeen conditions were included and doctors could pick the most important. The three most important factors – with very similar weights – are wages, infrastructure of hospitals and clinics, and the working conditions. Another finding of the survey results is that doctors estimate the potential real net wage gain of working abroad as six-fold, while in reality it only reaches an approximate two-fold wage gain. This implies that it would be worthwhile to consider implementing awareness raising campaigns to inform doctors about the real gains associated with working abroad.

Based on the logarithmic regression model of Hárs & Simon (2016a), any additional wage gain increases the probability of migrating, and at the current wage level, the probability still increases at a fast, though diminishing rate. The probability of moving abroad induced by the expected wage gain converges to 90 % at approx. EUR 11 700 per month (HUF 3.5 million).

According to Varga (2016), labour income is a decisive factor in migration. A 1 % increase in relative labour income (income compared to the national average) decreased the probability of emigration by 6 %. Varga also shows that among doctors younger than 30 and between 31 and 40, migration is more likely for those whose wages fall behind the average wage in Hungary. On the other hand, among doctors aged 51-60, those who earn more than their peers (similar in their objective characteristics) are likely to leave Hungary and move abroad. Varga points out that among the younger doctors, general practitioners are 2.5 times more likely to migrate than specialists, while this ratio is reversed for those older than 51, who are 32 % less likely to migrate if they have a general orientation than their specialist peers.

Other factors affecting the movement of skilled labour

Sik & Szeitl, (2016) examines the migration potential based on individual level survey data.[8] Their results for the usual explanatory factors (age, marital status, region, etc.)

[8] When measuring migration potential, respondents answered three questions separately (Are you planning to go abroad to work for a few weeks? Are you planning to go abroad to work for a few months/years? Are you planning to emigrate?) The

are in line with those described above, but they also estimate the impact of further factors on migration potential. Roma ethnicity significantly increases migration potential, and political affiliation also matters when it comes to migration intentions. Voters for the current governing party are less likely to plan to emigrate than do voters for the opposition parties. Internet users are also significantly more likely to emigrate (potential proxy for education level).

The influence of education and training on skilled labour flows – student stay rates: we have no information on the share of students wishing to stay abroad. We know from Blaskó-Gödri (2014), that approximately 3 % of Hungarian migrants are students.

Return migration and other inflows

Blaskó and Gödri (2014) attempt to provide an estimate about the intentions of return-migration. Only in 10 % of cases could the respondents (relatives living in Hungary of those who migrated abroad) give a rough estimate of when their relative was planning to move back home. 25 % reported that their relative is not planning to return at all, while 37 % said that the person abroad does not have any specific plans as to when to come home. The longer the person has been away, the smaller the probability that he/she still plans to return. However, 51 % of people who migrated after 2009 are rather uncertain about their long-term plans. Only 10 % said that under no conditions would they return to Hungary. Older migrants and migrants to the US are less likely to have return-plans at all. Among the younger migrants aged below 30, 14 % definitely want to return and 14 % have also decided not to return.

Martin & Radu, (2012), and Zaiceva & Zimmermann, (2016) found that return migrants in the CEE countries were positively selected in terms of education compared to the non-migrant and non-returning migrant population. Most returnees were male and single.

The net-migration to Hungary turned into negative figures following the 2008 crisis, despite that the share of Hungarian return-migrants increased between 2005 and 2011. Although it is difficult to provide an exact number for the share of return-migrants, it is suggested that in the post-crisis years, the share was between 25 % and 42 %. Gödri, (2015) estimates the share of return migrants based on mirror statistics of Germany and Austria. Mirror statistics not only contain the return migrants but also show the number of Hungarians who left the destination country, and those who left to move to another foreign country. The numbers indicate that apart from a shorter period following the global financial crisis, the share of return migrants has declined in recent years.

Table 3. Share of Hungarian migrants leaving Germany and Austria (%)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Share leaving Germany	93.4	84.4	80.6	76.4	85.3	87.6	69.9	58.9	51.6	57.2
Share leaving Austria	68.7	69.4	70.8	60.4	61.4	66.4	66.3	57.4	49.4	43.4

Source: (Gödri 2016) through Destatis (2015) and Statistik Austria (2015)

cumulated migration potential is based on the proportion of those who answered at least one of these questions with 'yes'.

According to Martin and Radu (2012), the main reason for returning to Hungary was separation from friends and family.

Emigration of skilled labour as part of the political and/or media debate: Only in the past few years has migration regularly been discussed in the Hungarian news, which frequently reports and speculates about the number of actual migrants and the number of those planning to leave. Migration used to be less of an important issue in Hungary than in other Eastern European countries following EU accession - it is a relatively new phenomenon in Hungary that shocks the public.

Immigration from the EU and other third countries to Hungary

Immigration from the EU and other third countries to Hungary is relatively low, but displays an increasing trend. While in 2011 an approximate share of 0.3 % (immigrants to population ratio) moved to Hungary, this had almost doubled by 2015.

Table 4. Immigration from the EU and other third countries to Hungary (Eurostat)

	2011	2012	2013	2014	2015
EU			10 448	10 537	10 549
Non EU			10 802	15 451	15 221
Reporting country			17 718	28 577	32 557
Total	28 018	33 702	38 968	54 581	58 344

Overall, while net migration had been positive in Hungary since 2010, emigration increased to such a large extent, that the net migration rate was close to 0 in 2013 and hit even negative figures in 2016 (Source: Eurostat).

3 Emigration of skilled labour and its impact on domestic economies beyond the labour market

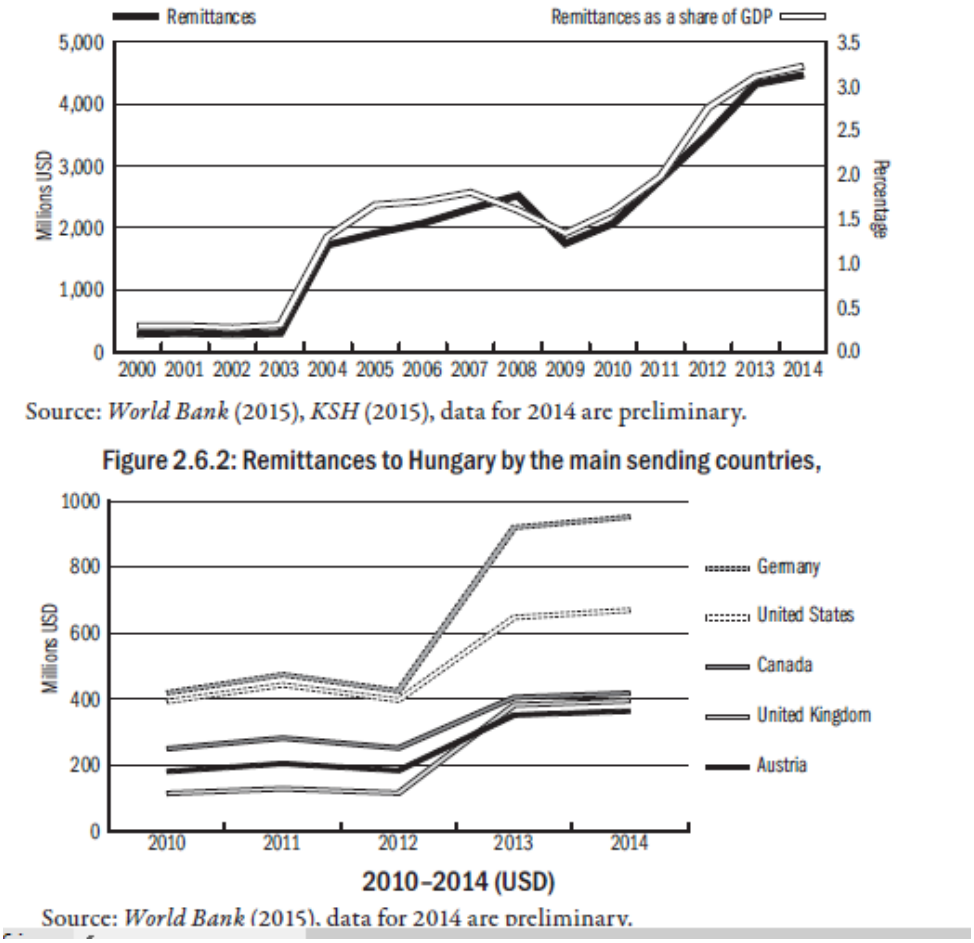
There is relatively limited literature available on the impact of migration on the general economy. An IMF (2016) report does discuss the consequences of migration in the broader Eastern European region, by and large, the results also apply to Hungary. They find that the emigration and the drain of young and high-skilled individuals tended to harm labour productivity, increased wages, harmed private sector activity and competitiveness and increased the level of government spending in the region. Since migration is more pronounced among the young, aging population and the ensuing additional governmental expenditures become another burden of migration. 'Emigration during 1990–2012 has been linked to an average increase of overall government spending relative to GDP in CESEE by 6.2 percentage point.' Overall, migration is likely to have slowed down growth and economic convergence.

The 300 000-400 000 migrants who live abroad after 2013 are primarily people under 40. The share of migrants with higher educational degrees or secondary education is much higher than in the total population. Based on this information, the impact of migration on the domestic economy is most probably negative, since the economy loses its highly-educated, young workforce. This holds true even if we consider the significant share of return migrants, because they still fall significantly behind the

outward migration numbers. Outmigration of young and skilled labour does potentially harm innovation potential of the country (albeit weak anyway). [9]

Using World Bank and Central Statistical Office data, Kajdi (2016) shows the evolution of remittances to Hungary over the past 15 years. It appears that, apart from a remarkable increase immediately following the EU accession, since 2009 remittances have risen again. This trend seems to follow migration trends. In absolute numbers this means that EUR 300 million (USD 280 million) was sent to Hungary in 2000, which grew 16-fold by 2014, reaching almost USD 4 500 million. Between 2009 and 2014, remittances almost doubled, from 1.5 % to 3.0 % of the GDP. Germany is the main sending country with almost 25 % of the total remittances, followed by the US, Canada, the UK and Austria. This corresponds to the results of Blaskó and Gödri (2014) who show that 32 % of the total migrant population does transfer money to Hungary, with those living in Germany having the highest share of people regularly sending money home (40 % of the migrant population in Germany). An interesting finding by the IMF (2016), though, is that remittances can significantly appreciate the real effective exchange rate, causing competitiveness to decline.

Figure 5. Remittances to Hungary and their share of the GDP



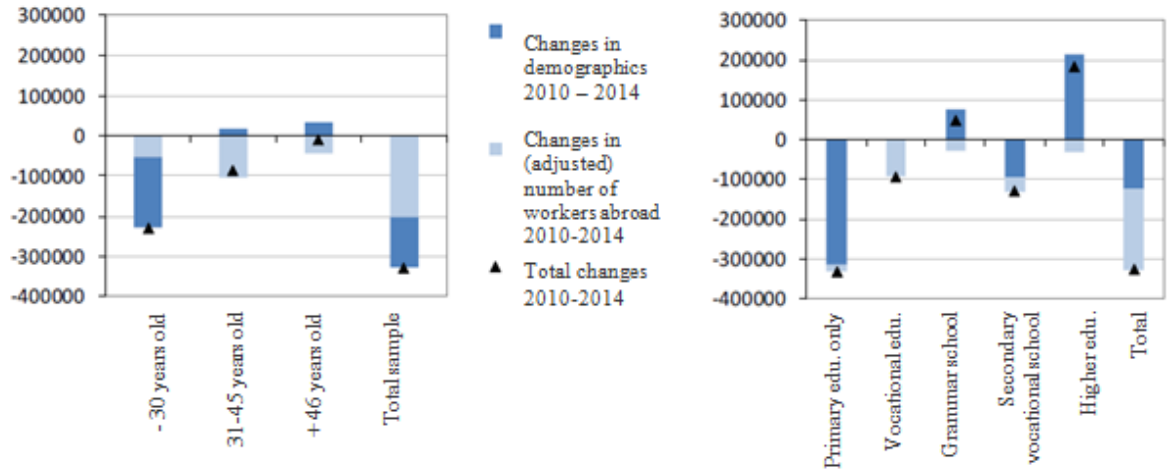
Source: Kajdi, 2016 in The Hungarian Labour Market, Figure 2.6.1-2.

[9] Hungary falls behind the EU average in terms of innovation potential: Internet: http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en

4 Emigration of skilled labour and its impact on labour market conditions

Hárs (2016) examines the impact of migration on the Hungarian labour market using the Hungarian LFS dataset. First, she shows how far changes in the size of the active population can be explained by demographic changes and how much by migration. The author simply deducts the estimated emigrant sample from the Hungarian population statistics. The statistics of the adjusted sample show that migration significantly intensifies the effects of demographic decline (its effect on population decline is twice as large as the demographic change), however, its impact varies from one specific subgroup of the population to the other. Migration has a strong impact on the size of the economically active population, particularly on the 31-45 age group and those with a vocational education (ISCED 3CV = 'szakiskola') degree.

Figure 6. Changes in the size of the active population driven by demographic decline and migration.



Source: Hárs (2016), Figure 3

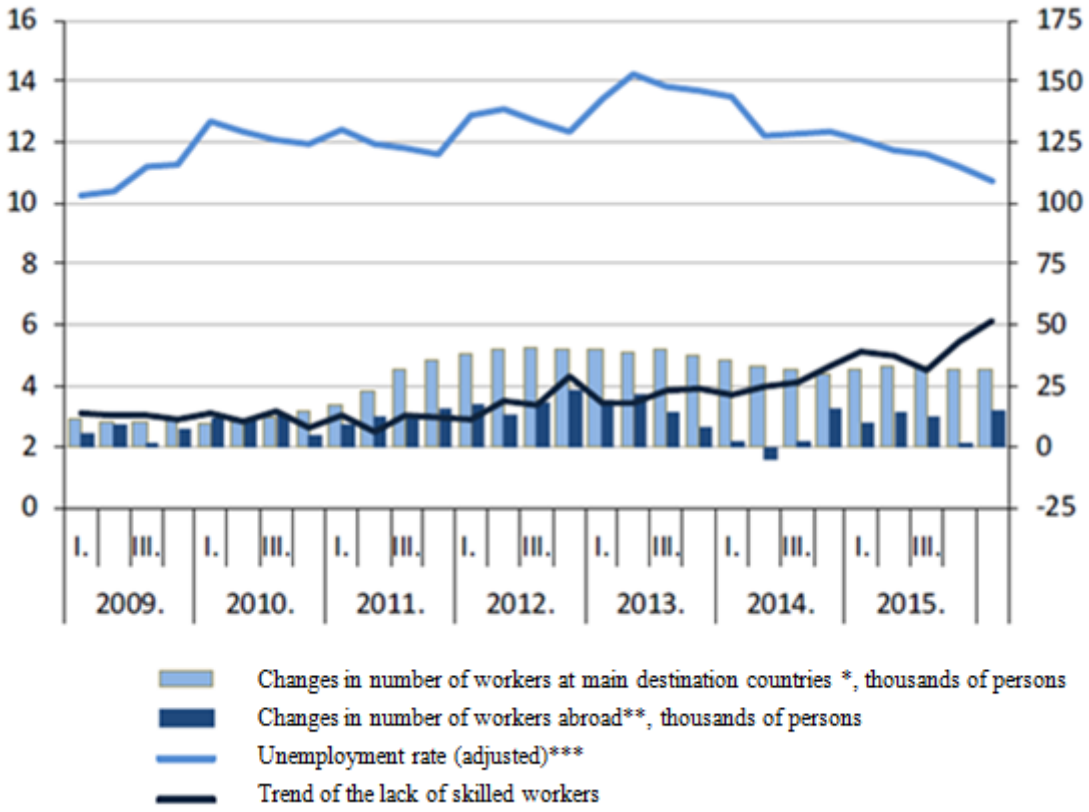
Economic activity increased by almost five percentage points between 2011 and 2015[10]. It is important to note that to provide a clearer picture of the domestic labour market processes, Hárs (2016) also adjusted the employment statistics for the sizeable government-financed public works programme. Calculated with the population statistics adjusted for the number of migrants, Hárs finds that between 2010 and 2014, as a result of migration, the employment rate of the 31-45 and younger than 30 year-olds increased by 2.8 and 1 percentage points, respectively (see Figure 6). The employment rate of those with primary education has not changed due to migration, while the employment rate of those with vocational education, higher education, and secondary vocational education increased by 2, 1.2 and 1 percentage points, respectively.

The changes in the domestic labour market processes are depicted in the following figure. The increasing number of people working abroad was complemented with an increasing (adjusted, increased by the number of public works participants)

[10] The improvement in LFS employment and unemployment is considerably smaller if the figures are adjusted for the number of emigrants and participants in public works (Scharle 2016).

unemployment rate. 2013 was the starting point for an improving trend – the unemployment rate began to decline and the employment rate to rise. At the same time, the incidence of companies quoting a shortage of skilled labour as a problem markedly increased. Migration intentions seem to follow quite dynamically the changes in labour market prospects: until 2012 migration intentions were clearly strengthening, while after 2013 intentions to migrate were no longer as deliberate (Sik-Szeitl 2016).

Figure 7. Changes in the labour market and the number of Hungarian migrants abroad.



Source: Hárs (2016), Figure 1

Labour shortage

Labour shortage used to be a problem specific to the health care sector until 2015, when a significant share of employers began to indicate the increasing problem of finding employees (Central Statistical Office 2017). Based on the Central Statistical Office's data on open vacancies, the sectors most affected are hotel and catering, commerce and, less acutely, industry and construction. Western Hungary is most affected by the problem. As regards the evolution of the number of vacancies from 2010 through 2016, the largest increase was in the manufacturing industry. With respect to professions, skilled labour, drivers, engineers, financial and IT experts are those most in demand.

Return migration is not strong enough to counterbalance outward migration - as described in the previous chapter.

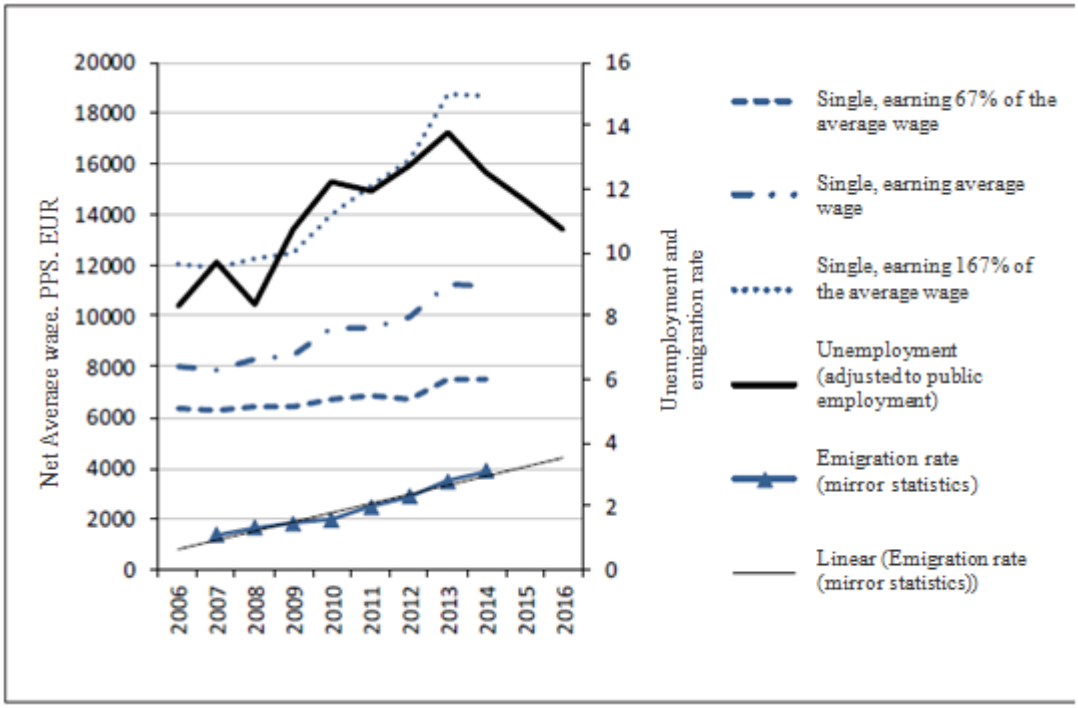
Many experts claim that reducing the public works programme and investing more in training and coaching measures by the public employment services would also alleviate the labour shortage problem.

Wages

Based on the literature available on the regional processes, average wages do not seem to react instantly to increasing migration, but certain subpopulations particularly affected by migration might experience a significant wage increase. Based on the calculations of Hárs (2016) (see the following figures) migration did not seem to impact either wages or wage costs (note that their observation period ends in 2014). In recent years, among the EU10 Member States, Hungary experienced the smallest change in wage costs, the fourth lowest in the entire EU after Romania, Bulgaria and Lithuania.[11]

Hárs, however, finds exactly the opposite to what one would expect based on the findings of international literature: a small wage increase could be seen exactly among those who did not experience substantial migration, those who earn more than the average wage (which might potentially be attributed to the flat-tax rate in 2013).[12] Subgroups that are largely affected by migration have experienced no or only a slight wage increase until 2014.

Figure 8. Evolution of average wage



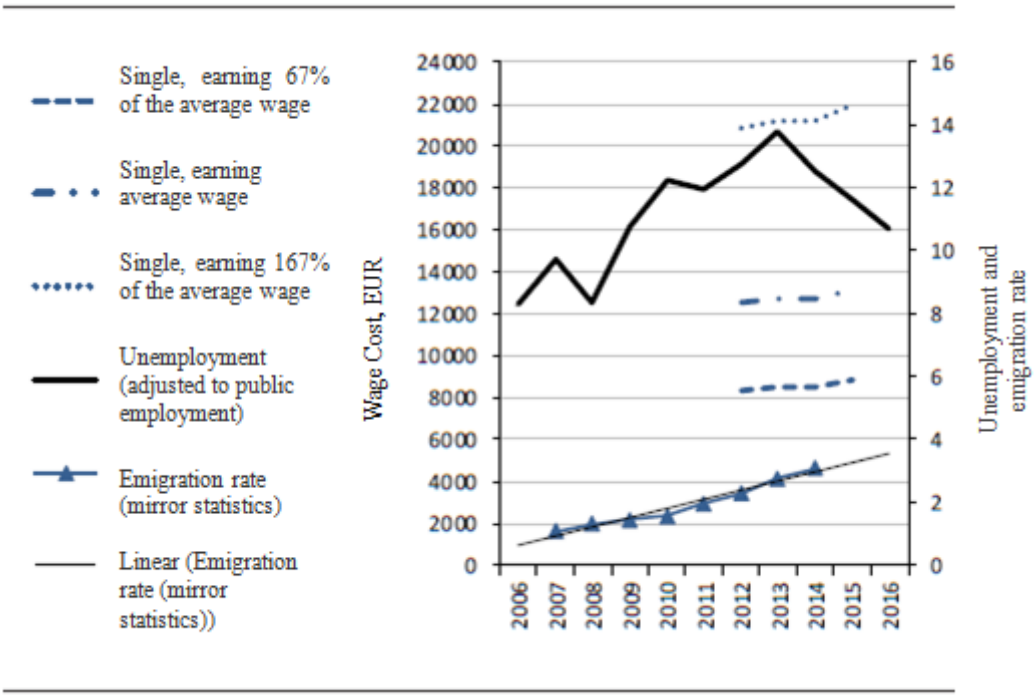
Source: Hárs, 2016, Figure 5.a

[11] According to the Eurostat data there was a slight increase in the Hungarian labour costs in 2016. (source: Labour cost levels by NACE Rev. 2 activity, Eurostat)

[12] Based on IMF (2016), the cumulative real labour productivity growth in Eastern Europe would have been about 6 percentage points higher in the absence of emigration during
1995–2012.

Although the answer to this puzzle needs further research, the most plausible explanation is that labour shortages became an acute problem after 2013-14 and therefore wage increases are likely to have occurred only very recently. A corporate survey undertaken by Korn-Ferry Hay Group in early 2017[13] seems to reinforce this assumption. It reports that 67 % of the enterprises experience large-scale labour shortage in certain positions. They have reported that the situation became unsustainable in 2016 first and that might explain why wage increase is a relatively new phenomenon. Korn-Ferry, (2017) reports that an average wage increase of 5.1 % could be expected in 2017. The sectors predicted to be the most affected by wage increases are the retail trade and the automotive industry. Another sign of potential future wage increases is a recent wave of – otherwise quite passive - trade union claims. For example, in July 2017, the Trade Union for Tourism demanded a 33 % minimum wage increase for the hotel and catering industry from 2018. There were also several strikes in the retail and automotive sector in recent months, resulting in salary increases.[14]

Figure 9. Evolution of wage costs



Source: Hárs, 2016, Figure 5.b

[13] The survey contained 575 Hungarian enterprises, responsible for more than 330 000 employees.

[14] Strike at Volkswagen in June, 2017 : Internet: http://index.hu/gazdasag/2017/06/20/550_ezer_forintos_atlagfizetessel_sztrajkolnak_a_vw_pozsonyi_alkalmazottai/
Strike at Tesco in September, 2017. Internet: http://24.hu/fn/gazdasag/2017/09/04/megvan-a-tesco-sztrajk-idopontja/

5 Actions undertaken by Member States to address the outflows of skilled labour

Kálmán, (2016) summarises government initiatives aimed at increasing return-migration to Hungary. The results are described in the following table.

Table 5. Initiatives enhancing return migration to Hungary

Name	Programme type	Main objective	Duration	Instruments/ Outcomes	Evaluation
Hungarian Academy of Science Momentum (Lendület) Programme	Return, reemployment, retention	Encouraging the return and retention of outstanding Hungarian researchers and young talent from abroad, as well as attracting young researchers from abroad	2009 -	Funding for researchers and research groups, initiation of quality research infrastructure in Hungary. 100+ research projects received funding before 2015, increasing resources – currently EUR 2 million (HUF 600 m)/year budget	
SROP Albert Szent-Györgyi Repatriation Scholarship	Return, reemployment, retention	Encouraging the return of talented Hungarian researchers in the areas of natural, technical and life sciences, as well as mathematics	2013-14	Funding of research centres and research groups for more experienced researchers.	N/A
Markusovszky Scholarship (Károly Than Scholarship)	Retention	Preventing the emigration of doctors and pharmacists 2011–	2011 -	Gradually increasing resources EUR 2.73 m (HUF 840 m) budget in 2016), fellowships for graduated resident specialists and pharmacists, a net grant EUR 325	N/A

				(HUF 100 000) per month, eligibility criteria apply.	
"Come Home Youth" (Gyere haza fiatal!)	Return, reemployment, retention	Encouraging the return of young Hungarians working in the United Kingdom	2015-16	EUR 0.325 million (HUF 100 m), website, telephone hotline, information campaign, counselling, training, job brokerage, housing assistance	N/A but the programme was closed in 2016 due to the low number (a couple hundred) applicants

Source: Kálmán (2016) p 119 Table 2.7.1.2 with minor adjustments

6 Conclusions

Migration from Hungary only recently became a concern. Migration from Hungary to the EU and other parts of the world following EU accession was very low compared to other countries in the region - the outflow of workers began to increase in 2007 and, by 2013, the number of Hungarians living abroad reached 300 000 to 400 000 people. The younger, the higher skilled and those with vocational educational attainment and men are more likely to migrate than others. However, by 2013, with major differences across subgroups (especially with respect to educational attainment and occupations), the pace of emigration probability slowed down significantly.

The magnitude of the challenge is represented by the fact that migration decreases the total and active population by twice as much as demographic decline. The first tangible symptoms of the problem appeared as labour shortages (i.e. a sizeable share of unfilled vacancies), strikes and trade union negotiations and, finally, strong signals of wage increase in the private sector coming soon.

The effects of migration on the general economy have not yet been estimated, but reports dealing with migration in the Eastern European region suggest that migration significantly harms the competitiveness of sending countries. It may also cause problems in the public sector, particularly in health care, which calls for an adjustment of salaries and working conditions.

Although the negative impact of migration in Hungary is currently likely to be relatively small, current tendencies have the potential to escalate and are therefore probably worthwhile mentioning in the Country report of the European semester.

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