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of remittances
in the CIS countries:
The case of Belarus*

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CARIM-East
Creating an Observatory of Migration East of Europe

Research Report

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**Development and side effects of remittances
in the CIS countries:
The case of Belarus**

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The project's two main themes are:

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(2) intraregional migration in the post-Soviet space.

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Abstract

The objective of the present paper is to evaluate the potential development impact and any possible side effects of remittances in Belarus.

Our main finding, based on VAR modeling, is that we cannot consider remittances as a driver of economic growth in Belarus: their positive influence on GDP growth is not statistically significant. In fact, in the next period GDP responds negatively to remittances growth (p-value is 0.005). To some extent this may be a result of a productivity decrease conditioned by possible brain-drain effects and high employee turnover.

Remittances appear to be strongly pro-cyclical with respect to Russian GDP and mildly pro-cyclical with respect to the GDP of Belarus. Analysis shows that negative influence of remittances on GDP is not caused by Dutch disease and inflation: neither exchange rate appreciation nor growth in consumer price is induced by remittances. Instead, lagged REER devaluation Granger causes growth in remittances inflow (Wald test p-value is 0.051): when in a crisis devaluation takes place in Belarus more people go abroad to support their families and more transfers come from abroad.

There are no reliable micro-data providing information on remittance receivers; nor are there any reliable data about the ways remittances are spent by receiving households in Belarus. Nevertheless, available statistics and surveys suggest that remittances have only a limited impact in terms of poverty reduction. Remittances are only invested in a limited extent, something in line with their relationship with GDP. At the same time we can conclude that due to remittances supporting household spending, employment remained nearly unchanged, despite an unfavourable economic climate. However, the underdeveloped capital market and lack of investments can result in the failure to modernize so that capacities can react, in a timely fashion, to demand fueled by remittances. Thus, there is a need for effective policies to channel remittances for investment purposes so that they support economic growth. Proposed policy recommendations follow.

Executive summary

Migration is a powerful economic force in CIS countries. In 2011 three CIS countries were among the world's top five remittance receivers (as a percentage of GDP): Tajikistan (47%), the Kyrgyz Republic (29%) and Moldova (23%). Belarus stands as an interesting CIS case: it is a member of the Union State with Russia. Citizens of both states have had the right to work and permanently settle in either country since 1999. Free movement of labour within the Common Economic Space with Kazakhstan and Russia, launched, 1 January 2012, makes Belarus even more interesting as a study of the impact of labour migration for the national economy.

Remittances play an increasingly significant role in the economies of many countries, as money inflows generated by labour migration. They contribute to economic growth and poverty reduction, helping to finance imports and service foreign debt, thus indirectly financing development. However, remittances may also impose unwanted costs on migrant-sending countries. They can cause domestic currency appreciation and they can ease pressure on governments to implement necessary reasons for correcting existing imbalances. Thus, remittances emerge as an important economic policy issue.

The objective of the present paper is to evaluate potential development impact and any possible side effects of remittances in Belarus. The paper contains the results of the first, to the best of our knowledge, extensive study directly addressing the impact of remittances on the Belarusian economy. Our results are based on an overview of the empirical literature focused on Belarus and other CIS countries and on an analysis of existing aggregate data using VAR methodology. The paper seeks to contribute to the existing literature on the CIS region and to push up remittance effects on the policy agenda in Belarus.

While considering the results of the present study one should take into account that data, both on labour migration volume and remittances flows in Belarus, are incomplete and consistently poor. To make the analysis more useful we give, whenever possible, our own estimates.

The main characteristics of remittance flows in Belarus

- According to Belarus balance of payments data the positive gap between inflow and outflow of remittances (defined as sum of compensation of employees and personal transfers in accordance with the BPM6) has steadily widened in the last ten years: in 2012 the inflows over outflows excess reached 1.3% of GDP, while the inflow share accounted for 1.5% of GDP. Statistics on personal transfers are based on official banking institution reports, while volume of compensation for employees is calculated based on an expert estimate of the number of migrants.

- The structure of remittances inflows and outflows differs significantly. With inflows there is above all employees' compensation, and its share equaled 60% in 2012. The opposite is true in the case of outflows. There workers' remittances prevail, though the share of employees' compensation has been growing since 2005, when it was only 0.6% (12.5% in 2012). The unexpectedly high workers' remittances outflow may be inflated by money transfers to intermediaries (physical persons) abroad who then organize goods purchase and send the same goods to Belarus (from the USA and China mainly).

- Until 2011, when Belarus faced an economic crisis, the country had not relied extensively on remittance inflows. National Bank data, unsurprisingly, show remittances growing at a rapid pace in 2011-2012. The 55% increase in remittances (in dollar terms) reported for Belarus in 2011 was to our knowledge the largest in the region.

- Given that 90.2% of labour migrants, according to the 2009 Census work in Russia, it is not surprising that Russia dominates in terms of remittance inflows structuring by countries –

more than 57% of remittances came from this country in 2011. Next comes France (6.9%), Latvia and the USA (5.3%), Sweden (3.7%) and Kazakhstan (2.4%). According to the data for 2012 migrants in Russia send over 75% of remittances.

- Russia prevails also as a destination country for remittances from Belarus: it absorbed 38.4% of the total remittance outflow in 2011, followed by the USA (9.8%), Germany (7.4%), China (4%), Belgium (3.8%), Spain (3.3%) and Lithuania (3%).

- According to the only available survey, conducted in 2003, labour migrants managed to resolve a number of their problems such as improvements in housing conditions and the purchase of durable consumption goods, good quality clothes and food. For half of the respondents labour migration is a way to find funds to invest in education and to pay for medical services. Less than one quarter of respondents mentioned helping relatives and business-related issues as their motive for migration. Finally, labour migration is a strategy for fighting poverty for only 15% of respondents.

- According to our estimates the number of labour migrants from Belarus working in Russia in 2011-2012 (130,000-180,000) is 2.5-3.5 times higher than that used by the NBRB for employees' compensation calculation (52,000). Taking into account Russia's share in total remittances inflows (57.2%) we estimate that average remittances inflows to Belarus from Russia are 1.9-2.4 times higher than those recorded in terms of balance of payments. Using this rough estimate we can approximately assess the size of the remittances inflow for Belarusian GDP in 2011-2012 at 2.8-3.6%.

Development and side effects of remittances

- Remittance inflows are strongly pro-cyclical with respect to Russian GDP. Remittances rise with the growing income of migrants and of temporary workers who increase in number when Russian GDP grows. Remittances appear to be slightly pro-cyclical with respect to Belarusian GDP. Macroeconomic shocks do not appear to have a persistent effect on remittances, which tend eventually to stabilize at their original levels. This may indicate that remittances *per se* are more a concomitant result of the economic system. This would reflect some fundamental characteristics of labour market institutions, rather than being a by-product of temporary economic crisis.

- Remittances are not a driver of economic growth in Belarus – they support GDP growth immediately after flowing in to the country (this relationship is not statistically significant, though). Possibly they do this by increasing private domestic consumption, but in two quarters GDP responds negatively to remittance-related growth. This may be explained by possible brain drain effects and decreasing productivity due to lower return in remaining labour resources.

- The negative influence of remittances on GDP is not caused by Dutch disease and inflation: neither are exchange rate appreciation, and growth in consumer price induced by remittances. Instead, lagged REER devaluation Granger causes growth in remittances inflow: when in crisis devaluation takes place in Belarus and more people go abroad to support their families and more transfers are made to the country.

- In 2011-2012, labour demand remained nearly unchanged in Belarus despite an unfavourable economy, at least, in part, thanks to remittance led consumption. While facilitating domestic consumption growth and in this way supporting the restructuring of the national economy, it is hard to designate remittances as an important driving force in investment. Their investment potential is not very high: in 2012 remittances made up 4.6% of gross capital formation. However, remittances may become an important source of personal fund investment in the economy: their volume stood at 75% of personal funds invested in 2012.

- The impact of remittances in reducing poverty is rather limited. External labour migration in Belarus is more an urban than a rural phenomenon. Rural migrants comprise only 18.3% of those working in Russia and 10.7% of labour migrants working in other countries. At the same time poverty is higher in rural areas: according to HBS the share of rural population with *per capita* disposable resources below subsistence level budget stood at11.5% in 2011 and 9.4% in 2012 (5.8% and 5.2% respectively for urban areas).

- There are some signs that a stream of excess labour force to Russia has let the government off the hook in terms of any reform of the unemployment social security system and the education system, which still do not match the labour market. So, in a sense, labour migration and remittances creates moral hazard for the government as remittances particularly take the pressure off governments. Negative demographic tendencies and a labour resources decrease were not addressed deeply until tensions, caused by massive skilled workers outflows to Russia, emerged.

Policy recommendations

- There is a need to capacity build institutions and human resources, while conducting research into the whole spectrum of remittances and labour migration issues in accordance with international standards. The collecting and use of disaggregated population data for the development of socio-economic policies and programmes is presently inadequate. Given the open borders between Belarus and Russia and the free movement of people it is necessary to conduct regular household and individual surveys on migration issues and the employment of the Belarusians abroad. Results of household and individual surveys on migration issues can supplement official sources based on the balance of payment statistics. They can provide important information on: who remits and who receives remittances; how much and through which channels remittances come; and how remittances are spent by receiving households.

- To increase remittances contributions to the economy it is important to keep remittances facilitation (namely low transaction costs, growing financial literacy and widening set of financial instruments for households) on the policy agenda in Belarus. Governments should try not to control remittances and their receivers, but rather they must let migrants remit without restraints. The free flow of remittances will allow these transfers to adjust to cyclical fluctuations in the Belarusian economy in a manner that has positive implications for economic stability. The best way for policy makers to encourage the productive investment of remittances is to pursue macroeconomic policies that allow a stable and propitious investment climate and to create specific institutions that make investments more attractive.

  To channel remittances for investment purposes the government could institutionalise a centralised remittance bureau, whose mandate would be to promote the use of remittances for economic development. For instance, this bureau could offer a tax concession for remitters investing in bond and stock markets and cheaper credits for business purposes. To qualify for these benefits, migrants or their families would have to submit proof of sending/receiving remittances. This mechanism might be a good point to start engaging in economic development, as the Diaspora's financial potential has been, to date, almost totally ignored.

- Government should design and implement a Migration Lens framework as part of macroeconomic and sectoral policies. While designing this approach it should recognize that there is a need for an agency empowered with significant influence among government organizations to implement and facilitate migration-focused policies. This agency should be in possession of evidence-based policy instruments, supported by expert knowledge and with sufficient data.

  Regardless of whether it has or does not have the status of the main mediator of the country's migration strategy, the Ministry of Labour and Social Protection together with Ministry of the

Economy should make significant efforts to improve labor market institutions in Belarus: comprehensive reforms of wage regulation, labour taxes and the pension system, unemployment security system and creation of the institutions of socially responsible restructuring are needed. The first step in this list should be continuation of the wage-setting liberalization started in 2011: the compressed grading pay system, which is still mandatory in the public sector, should be abolished together with changes in other regulations necessary to allow proper wage differentiation. This would allow remittances to boost economic growth.

1. Introduction

Recent increases in remittance flows, fostering further global economic interdependence, have attracted the attention of academics and policy makers internationally. According to the World Bank remittances totalled an estimated 501 billion USD in 2011, of which 372 billion USD went to developing countries. This involved nearly 192 million migrants or 3.0% of the world population. Remittance flows to the developing world are expected to exceed earlier estimates standing at 406 billion USD in 2012, an increase of 6.5 percent over the previous year[1].

Remittances are playing an increasingly significant role in the economies of many countries, contributing to economic growth and poverty reduction by providing a means of consumption for poor households. They are also a source of potential saving and investment in households, including investments in health and education. In addition remittance transfers promote access to financial services for the sender and for the recipient, thereby increasing financial and social inclusion. As a stable source of foreign exchange, they help to finance imports and to service foreign debt, thus indirectly financing development.

However, remittances bring with them not only potential benefits. They also have costs for migrant-sending countries. Remittances can cause domestic currency appreciation and remittances can ease pressure on governments to implement reforms and correct internal imbalances.

As for the policy dimension, remittances may be viewed from a variety of perspectives. The insights of development economists, rural micro-economists, business people, social development analysts, security specialists, and financial experts studying remittance flows tend to focus on one specific aspect. Remittances may be seen, depending on the viewer's perspective, as: household income; a hard-earned transnational family livelihood; a macroeconomic flow; potential dirty money; a source of development finance; or a business opportunity. Thus, remittances emerge as a different kind of issue in different policy areas (Betts, 2011).

The specific objective of the present paper is to evaluate development impact and the side effects of remittances in Belarus. While our attempt to assess the broad range of remittance impact in Belarus is interesting *per se* (it is, to the best of our knowledge, the first study with such a broad focus), there is another important reason for studying the Belarusian context. Belarus is the first case in the CIS where a lower income country has built an integrated labour market with its more prosperous neighbour, Russia. Reducing the monetary costs of migration leads to higher mobility and remittances, which can support the Belarusian economy and stabilise the same during a crisis. Our first hypothesis, thus, is that remittances to Belarus are strongly influenced by Russian economic growth. Second, we can hypothesise that, overall, as in most other countries, remittances are generally positive for the economic development of Belarus. Regarding the second hypothesis a lot depends on the comparative characteristics of labour markets in Russia and Belarus: these characteristics determine returns on human capital and, consequently on migrant selectivity. We will offer, following on from our findings, some recommendations for labour market policy and for remittances facilitation and utilization.

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[1] See http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1288990760745/Migration Development Brief19.pdf.

We are going to address research questions by analysing data and by assessing the development impact and side effects of remittances in Belarus at an aggregate level using VAR methodology.

The present paper is organized as follows. In Section 2 we set out the institutional context for labour migration in Belarus describing developments in the common labour market with Russia and Kazakhstan. Section 3 has statistical data on remittances, definition of remittances in Belarus and provides the estimated number of labour migrants. Section 4 presents a description of remittances profiles in Belarus, assessing the size of remittance flows to Belarus, their share in GDP compared to other CIS countries, the main remittance-sending countries and the patterns of remittances use. Section 5 addresses economic and other developmental impacts and side effects of remittances in Belarus. Finally, Section 6 presents our conclusions and summarizes the policy options for facilitating remittance use for development.

2. The Institutional context for labour migration: A developing common labour market with Russia and Kazakhstan

Common Economic Space (hereinafter CES) promises the three CIS countries – Belarus, Russia and Kazakhstan – both positive and uncertain consequences. Certainly, it stimulates migration processes, as it gives people freedom of movement within CES for citizens of the member states.

The Agreement for the legal status of migrant workers and their family members and the Agreement for cooperation in counteraction to illegal third-country states labour migration (both signed 19 November, 2010) stipulates freedom of movement. This means the abolition of any sort of discrimination between citizens of the three relevant states and the creation of unified legislation on job placement, remuneration, and other work and employment conditions.

The major strength of the second agreement is that labour migrants of the three countries do not need permits for labour activities in CES countries. Besides, in accordance with the separate regulations of direct action of the forementioned Agreement from 1 January, 2012 – labour-migrants – citizens of Russia and Kazakhstan carrying out their labour activities in the territory of Belarus, as well as citizens of Belarus in the territories of Russia and Kazakhstan, enjoy the following advantages and preferences:

the labour-migrant and their family members are relieved of registration (reporting themselves to the local employment body) for 30 days from their arrival date;

in the case of the early termination of an employment contract but after 90 days from the arrival date, the labour migrant has the right to enter into a new employment contract within 15 days. This includes a contract with another employer with the terms specified by the legislation.

Thereby, from 1 January, 2012 the conditions for realizing labour activities by the labour migrant of one of the three countries in any of the CES-member states are those of nationals. Even so, relations between the labour migrant and his or her employer are regulated by the legislation of the employer country.

It should be noted that the unified legal treatment of employment has been in effect for more than 10 years between Belarus and Russia within the scope of the Union State. Thus, in compliance with Article 7 of *The Treaty between the Republic of Belarus and the Russian Federation for Equal Rights of the Citizens* of 25 December, 1998, both countries provide arriving workers in the Union State with the employment, remuneration rights, and other social and legal guaranties. Thereby, from 1999 Russians have been working in Belarus like Belarusians provided that they are staying legally in the territory of the state and *vice versa*. Since January 2012 Kazakhstan has also joined this kind of regulation for temporary employment.

After this kind of striking reduction in costs for labour migration what results can we expect for CES countries? Human-capital theory predicts that migration will flow from areas of relatively poor earnings to places where opportunities are better (Borjas, 1999). One aspect of the potential gains from migration that is uniquely important when analyzing international labor flows is the distribution of earnings in the sending as well as in the receiving country. The relative distribution of earnings can help predict which skill groups within a sending country are most likely to emigrate (Roy, 1951). In a country that offers a low rate of return to a worker's human capital the skilled do not earn much more than the unskilled. This situation generates incentives for the skilled to migrate to countries with more unequal distribution of earnings because they have the most to gain by moving. Such a country is the recipient of a "brain drain". Unskilled workers in countries with more equality of earnings are well paid compared with unskilled workers in countries with higher inequality. They thus have less incentive to move.

The key implication of the Roy model is that the relative payoff for skills across countries determines the skill composition of the immigrant flow. The Roy model implies that immigrants who originate in countries that offer a low rate of return to human capital will earn more than immigrants who originate in countries that offer a higher rate of return (Borjas, 1987).

A surprising implication of the Roy model is that neither the "base level" of income in the source country, nor the "base level" in the destination country determines the *type* of selection that generates the immigrant flow. Changes in these base income levels, however, do affect the *size* of the flow.

Human-capital theory clearly also predicts that, as migration costs fall, the flow of migrants will rise. Migration costs are mainly determined by distance and by the costs of obtaining permits and registration. The costs of moving increase with distance for two reasons. First, acquiring trustworthy information (often from friends or colleagues) on opportunities elsewhere is easier – especially for workers whose jobs are in "local" labor markets – when employment prospects are closer to home. Second, the time and money cost of a move and of trips back to see friends and relatives, and hence the psychic costs of the move, rise with distance (Ehrenberg and Smith, 2011).

The possible consequences of labour market integration and the subsequent reduction in costs of labour migration in CES on changes in migration flows in Belarus become clearer after comparing wage levels in CES countries. The average wages level in Russia and Kazakhstan was, in the middle of 2012, 1.7 and 1.5 times higher than in Belarus: respectively 834.2, 712 and 471.2 US dollars in July 2012[2].

Differences in GDP *per capita* between Belarus and Russia are even more impressive (Figure 1). While the income inequality ratio has remained relatively stable since 2005, differences in GDP *per capita* have increased sharply, especially in the last three years.

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[2] However, when comparing wages level on PPP bases, Belarus concedes only to Russia (see Table A1).

Figure 1.Differences between Russia and Belarus in GDP per capita and income distribution
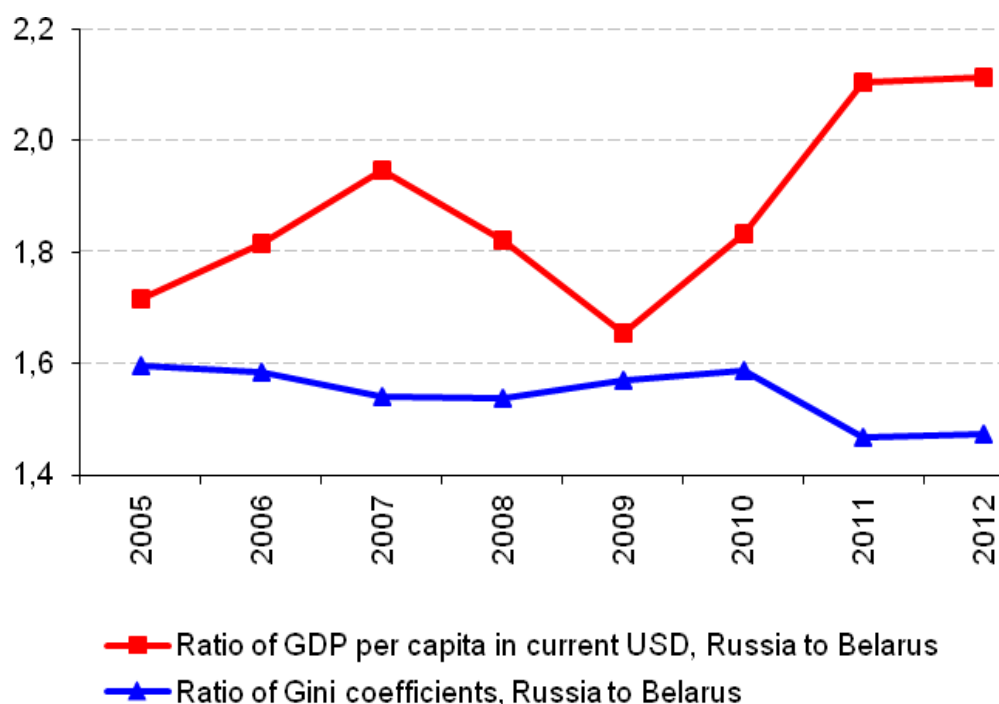
Source: World Development Indicators, Belstat, Rosstat (see data in Table A1, Appendix A).

Belarus has a more compressed earnings distribution than is found in Russia[3]. In Belarus the average earnings differential between skilled and unskilled workers is smaller. This implies that the returns on human capital investments are lower than in Russia (income inequality proxies for the rate of return to skills). Thus, skilled and professional workers from Belarus can gain from emigration to Russia. In theory immigrants to Russia from Belarus should be more skilled than the average non-emigrating Belarusian worker: we can expect positively selected immigrant flow according to the Roy model.

We might think that Russia will be a popular destination for migration from Belarus, not only for economic reasons and geographic proximity, but also because of the absence of linguistic and cultural barriers. Taking into account the fact that Russian labour resources are decreasing, the demand for labour migrants from Belarus is hardly reduced. Thus, according to the conservative scenario of Rosstat's recent forecast the working age population will go down from 86 million in 2012 to 77.3 million by 2031. In 2015-2017 the decrease is expected to be over 1 million people annually[4].

In the context of integrated labour market development in CES one should expect that the reduced monetary costs of migration will lead to a growth in remittances and the more significant impact of the latter on the Belarusian economy. However, if our proposition about positively selected migrant flows to Russia is true then a positive remittance impact can be reduced in consequence of possible brain drain effects.

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[3] Personal income taxes are at almost the same level in both countries: 12 % (Belarus) and 13% (Russia).

[4] See http://www.trud.ru/article/29-05-2013/1294333_za_8_let_trudosposobnoe_naselenie_rf_sokratitsja
_na_12_mln_chelovek.html.

3. Definition and statistical data on remittances in Belarus

a. Balance of payments data on remittances

In Belarus, the National Bank of the Republic of Belarus (NBRB hereafter) is responsible for monitoring and regulating remittances. The definition of remittances has been, since 2012, taken from the sixth edition of the Balance of Payments and International Investment Position Manual (BPM6, 2007).

The BPM6 is currently being implemented by countries around the world. As such remittances represent household income from foreign economies arising mainly from the temporary or permanent movement of people to those economies. Remittances include cash and non-cash items that flow via official channels, such as electronic wire or through informal channels, such as money or goods carried across borders. They consist largely of: funds and non-cash items sent or given by individuals who migrated to a new economy and become residents there; and the net compensation of border, seasonal, or other short-term workers who are employed in an economy in which they are not resident.

The methodological notes of the National Bank of the Republic of Belarus suggest that the two items in the balance of payments framework that substantially relate to remittances are "compensation of employees" and "personal transfers." Both of these standard components are recorded in the current account. *Compensation of employees* refers to the income of border, seasonal, and other short-term workers, who are employed in an economy where they are not resident, and to residents employed by non-resident entities. The compensation of employees represents "remuneration in return for the labor input to the production process contributed by an individual in an employer-employee relationship with the enterprise." The compensation of employees is recorded without reference to taxes and other expenses incurred in the economy where the work is performed.

Personal transfers consist of all current transfers in cash or in kind made or received by resident households to or from non-resident households. Personal transfers thus include all current transfers between resident and non-resident individuals. Therefore, personal transfers are a subset of current transfers. They cover all current transfers that are sent by individuals to individuals. "Personal transfers" replaces an item called "workers' remittances" in the standard BPM presentation. In Belarus personal transfers are currently presented by NBRB as consisting of two items: workers' remittances and other transfers between households.

Balance of payments data on remittances in Belarus starting from 2012 consist of the following standard components (Table 1).

Table 1. Components required for compiling remittance items and their source

Item	Source and description
1. **Compensation of employees**	Primary income account, standard component
2. **Personal transfers**	Secondary income account, standard component
3.Travel and transport related to employment of border, seasonal, and other short-term workers	Goods and services account, supplementary item
4.Taxes and social contributions related to employment of border, seasonal, and other short-term workers	Secondary income account, supplementary item
5. **"Net" compensation of employees**(Compensation of employees less expenses related to border, seasonal, and other short-term workers)	**Item 1 minus the sum of item 3 and item 4**
6. Capital transfers between households	Capital account, supplementary item
7. **Personal remittances**	**Item 2 plus item 5 plus item 6**
8. Social benefits	Secondary income account, supplementary item
9. **Total remittances**	**Item 7 plus item 8**

Source: National Bank of the Republic of Belarus.

Hereafter, if not otherwise noted, remittances equal the sum of compensation of employees' volume and workers' remittances volume as they are represented in the balance of payments. This is sole way to analyse remittances inflows and outflows in Belarus in a timely fashion.

Statistics on personal transfers, provided by the NBRB, is based on official banking institutions' reporting of financial transactions with non-Belarus residents and on money transferred through money-transfer operators.

Statistics on employee compensation is based on the NBRB estimations of money transferred through informal channels (family, friends, train conductors and drivers who carry money across borders etc.). It is an expert estimate agreed with the Central Bank of the Russian Federation.

The estimated number of Belarusian citizens engaged in the Russian economy is presented in Table 2. They are used for computing employees' compensation.

Table 2. The number of Belarusian citizens engaged in the Russian economy, recorded in the Republic of Belarus balance of payment in 2011-2012.

Indicator	2011				2012	
	1 Q	2 Q	3 Q	4 Q	1 Q	2 Q
Number of Belarusian citizens working in Russia under registered signed contracts	3 233	3 148	3 124	3 452	3 891	4 306
Number of Belarusian citizens considered in addition to the above in foreign employees' compensation accounts (estimate)	40 340	51 883	58 353	47 450	41 916	52 514
Total	43 573	55 031	61 477	50 902	45 807	56 820

Source: The National Bank of the Republic of Belarus.

The problem with the estimated number of Belarusian citizens considered in addition to those working under the registered signed contracts (52,500 in Q2 2012) is that it is based on a very rough estimate: it is calculated as the share of the number of Ukrainian labour migrants (illegal and having working permisions – 214,400 in Q2 2012). The share, in turn, is calculated as a quotient of Belarusians entries to Russia on private purposes to those of Ukrainians (24.5% in Q2 2012).There are at least two reasons why it is not possible to consider this approach as sound: first, labour migrants from Ukraine do not have such a privileged status as Belarusian ones; second, absence of border control between Belarus and Russia does not allow a real number of entries for private purposes.

Employee compensation is calculated by multiplying the estimated number of migrants by the average wage in the corresponding sector: the assumption is that half of Belarusians work in the Russian construction sector while the average wage in transport, wholesale and retail trade and extraction sector is used.

The NBRB approach for estimating remittances has serious limitation. But there has been no attempts to consider other sources of data and to evaluate the official data on remittances for Belarus.

More precise resource inflows that migrant workers may make to their households and national economy could be identified only through research based on surveys at household and individual levels. However, no nationwide survey has been conducted in Belarus devoted to immigration, never mind to labour migration issues.

Some existing sources of data, namely the Census, the Household Budgetary Survey and the Labour Force Survey, that could be used to make estimates of remittances volume more accurate, are described briefly in Appendix B. The most reliable of them, the LFS, is not, at present, designed to provide individual level information on remittances in Belarus. It is not actually possible at present to understand, using LFS and HBS, results who remits and who receives remittances; how much and through which channels; and how remittances are spent by receiving households. But it is possible to use these data sources to make some adjustment for the balance of payments estimate of remittances in Belarus which remains the only source of information on remittances. With this purpose in mind, we present below some statistics and characteristics of labour migration profile from the above mentioned sources and from other sources.

b. Estimated number of labour migrants

Migration statistics from Belarus are based on the rules of population registration by place of residence and place of stay, implemented in 2008. There are two categories of migrants: permanent (long-term) migrants, who are registered by place of residence, and temporary migrants, who are registered by place of stay. The term of registration by the place of stay is limited to 1 year. International temporary migration matches labour migration.

According to the Balance of labour resources, where LFS data were used in 2012, the number of citizens employed abroad equals 55,400 (Appendix C). It is 1.2% of the employed population.

Before the detailed LFS data is made available to the general public the census data remains the best source for understanding labour migrant profiles in Belarus (see Appendix D). According to the 2009 Census data, 41,783 people worked outside Belarus (Table 3), of whom 37,676 (90.2%) worked in Russia. CIS-countries absorb 91.3% of labour migrants.

The labour-migrants exchange between Belarus and Kazakhstan is not particularly significant in terms of volume**.** This is not surprising given the significant distance between the two countries (Lucas, 2001) and the rather small differences in wages.

It should be noted that compared to domestic labour migration, external migration is significantly lower: while internal labour migration amounts to 8.9% of total employment (of which 2.6% have work on the territory of different oblast), only 0.9% of the employed population works abroad.

Table 3.Employment of Belarusians by country of residence according Census 2009 (persons aged 15+ and employed abroad for less than 1 year)

Employed population, total	4 613 351	-
from which with workplace located in other country	41 783 (0.9%)	100
CIS country	38 141	91.3
Russia	37 676	90.2
Ukraine	364	0.9
Kazakhstan	49	0.1
Non-CIS country	3 440	8.2
Lithuania	724	1.7
Poland	643	1.5
USA	293	0.7
Germany	286	0.7
Italy	197	0.5
Latvia	118	0.3
Czech Republic	114	0.3

Source: Census 2009. See http://belstat.gov.by/homep/en/census/2009/pc_publications.php.

Census 2009 data show that the general level of education of labour migrants to Russia was lower than the educational level of the average member of the Belarusian work force (Appendix D). In 2009, people with higher education made up 16.1% of labour migrants to Russia, while the average share of people with tertiary education working in Belarus was 25.3%. The difference is similar when considering labour emigrants by skills needed to hold an occupation (Table D1). The share of highly-skilled workers was 14.1% among labour migrants to Russia and 25.7% among those employed in Belarus. However the share of skilled workers was higher among those who work in Russia (66.9% versus 61.7%).

Despite a rather optimistic picture from the above data we cannot unreservedly conclude that labour migrants from Belarus are not positively selected. First, neither formal education nor occupations are adequate measures for labour migrant skills. Rich individual level data are needed to control for numerous unobserved characteristics and differences among migrants and non-migrant workers. Until now the only official statistics for labour migrants in Belarus has been limited to those having registered labour contracts and does not even provide data on education[5]. Thus, according to CMD in 2012 the number of citizens who left Belarus to work abroad equals 6,534 (see Appendix E) and their main destination is Russia (5,369 people or 82.2%). As one can see from Table E1 only 4,200 of Belarusians were working abroad with signed contracts or agreements in 2009. And only 2,600 of them in Russia. This is almost 15 times less than the numbers reported in the 2009 Census.

Second, the 2009 Census statistics for labour migrants is not quite reliable. As Chubrik and Kazlou (2013) argue, census data might underestimate labour migration, given that (a) it was implemented in mid-autumn when the share of non seasonal workers is significant; (b) some labour migrants might not take part in the census because their work abroad was in progress; (c) some temporary migrants might not be working not because they did not have a job but because they were waiting for an answer from their employers or were preparing to start work. Indeed, census data show that another 46,900 working-aged Belarusians were waiting for the start of the working season, 31,200 awaited an answer from their

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[5] Statistics are provided by the Citizenship and Migration Department of the Ministry of Internal Affairs of the Republic of Belarus (CMD hereafter). It is necessary to note that the CMD data refers only to the people going abroad via agencies, who have a license from the Ministry of Internal Affairs for citizens' employment assistance. As for the end of 2012, 75 legal entities and individual entrepreneurs carry out this kind of business activity. Most Belarusians leave and become employed abroad unassisted exercising their right to freedom of movement. Independent job placement is provided for by Article 11 of the Law On Foreign Labour Migration.

employer, and yet another 6,300 were about to start working. This comprises additional labour migration capacity of more than 80,000 people.

Finally, one should take into account the fact that the census was taken in 2009 when Russia was suffering from the global economic crisis and its labour market was stagnant.

Apart from this, there is some mismatch with the 2009 Census figures concerning data for non-CIS countries. Thus, according to the Polish data on employers' declarations to employ foreigners the number of temporary workers from Belarus is much higher than suggested by the 2009 Census[6]. In 2011 Belarusians comprise 6% (2,600) of total inflows of foreigners into Poland, while 2001-2010 average was 7%[7]. The Polish Population Census identified a stock of 56,300 temporary immigrants in 2011, of which 78% were foreign citizens, mainly from Ukraine, Belarus, Germany, the Russian Federation, China, Bulgaria and Vietnam.

So it is no surprise that expert estimates on the number of labour migrants significantly differ from official data. The upper threshold for Belarus' labour emigrants' was provided by a World Bank assessment in 2005, according to which 400,000 Belarusians worked abroad in 2004 (IOM, 2006). A year later the Chief of the Citizenship and Migration Department of the Ministry of Internal Affairs of the Republic of Belarus said the number was 300,000[8]. According to one estimate, 300,000-700,000 Belarusians work in Russia and 60,000-70,000 in the EU. These send home, by the same estimate, 2-3 billion USD in remittances annually (Wilson and Popescu, 2009). Integration Research Center of the European Development Bank estimated the number of Belarusian migrants working in Russia in 2010 stood at 171,000, from which 67,300 work officially (see Appendix F). Recently, Luchenok and Kolesnikova (2011) estimated labour emigration at 150,000 a year.

A quantitative assessment of the number of labour migrants from Belarus is rather complicated (see Zagorets and Zagorets, 2011; Bobrova, Shakhotska and Shymanovich, 2012).

Bobrova, Shakhotska and Shymanovich (2012) take a rather extreme method to estimate the number of Belarusians working abroad. They calculate the difference between the total number of people of working age and the number of people employed in the national economy. This difference was 1,376,900 in 2011 and 1,452,900 in 2012 (Appendix C). It is not a good estimate because this figure includes among others: enrolled students not combining work with study; workers on maternity leave; and child-care leave until the age of three years; citizens receiving allowance for care for the elderly and disabled adults and children; citizens employed abroad; officially unemployed, citizens imprisoned and citizens retrained on assignment of agencies for labour, employment and social protection. Before 2012 (when LFS data on unemployment appeared in the balance) the item "Others" calculated in the national balance of labour resources as difference between labour resources and employed population and all the items listed above was a much better reference point for the numbers working abroad. This item equaled 110,500 in 2012. To this we can add at least part of the number of unemployed not registered officially – 211,100.

We propose to estimate the number of labour migrants based on the data gathered by Federal Migration Agency of the Russian Federation, which in the case of Belarusians collects data from arrival notices (Table 4). According to the legislation for all Belarusians arriving in Russia the receiving party should fill in this arrival notice and send to the territorial body of Federal Migration Agency.

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[6] Since 2006 a simplified procedure for employment without issuance of a work permit has led to increased inflow of foreign labour in Poland. Citizens of Belarus, Georgia, Moldova, Ukraine and the Russian Federation now only need a declaration of a Polish employer in order to work up to six months during twelve consecutive months. 2011 saw a 44% increase in such declarations, to almost 260 000. 92% of the declarations registered by Polish employers were for Ukrainians.

[7] See International Migration Outlook 2013, OECD 2013, pp. 284-285 (www.oecd.org/migration/imo).

[8] See http://naviny.by/rubrics/economic/2006/11/17/ic_articles_113_148705/.

Table 4. Statistics of the Federal Migration Agency of the Russian Federation on Belarusians registered by the place of stay and receiving permits on residence

From February 3rd 2009 to	Registered by place of stay	Permits on temporary residence		Residence permits		Residence permits (article 4)	
		Number of applications	approved by them	Number of applications	approved by them	Number of applications	approved by them
December 31st 2010	321 885 (160 943 per year)	1 602	1 487	601	482	2 063	1 479
December 31st 2011	518 668 (+196 783)	2 164	1 973	1 052	848	4 152	3 040
December 31st 2012	712 711 (+194 043)	2 784	2 595	1 522	1 269	10 312	7 741

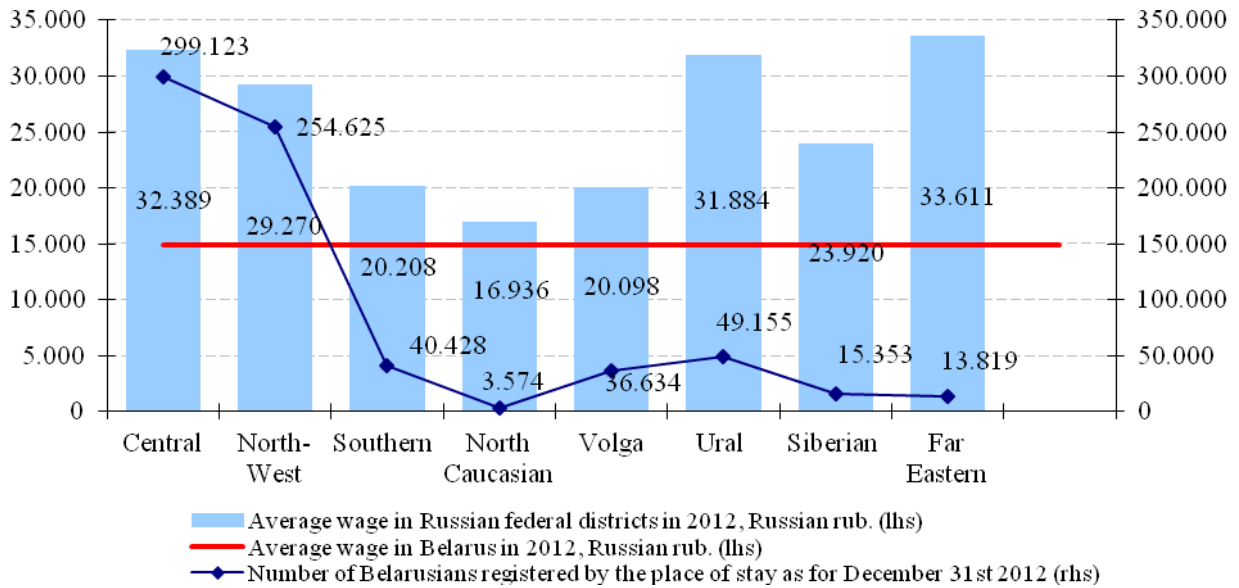Source: Federal Migration Agency of the Russian Federation

Figures in Table 4 show that in the last two years the average number of Belarusians registered in 2011 and 2012 by the place of stay in Russia was, respectively, 196,000 and 194,000 respectfully (it is 35,000 more than the average number for the previous two years). Suppose that only 20% of the registered were labour migrants (we do not count students, those registered by hotels, vacation houses etc.) and given that only 10% of labour migrants decide to fill in an arrival notice (in fact this share may be far less), 390,000 Belarusians visited Russia for work purposes. Taking into account that many of them are seasonal workers, we can estimate the number of labour migrants from Belarus working in Russia for a year (at any given moment of time) from 130,000 to 180,000 depending on the duration of stay for work[9].The highest number of migrant workers in our estimated range makes up 3% of labour resources and 3.9% of employed population in 2012.

According to the Federal Migration Agency of the Russian Federation nearly 80% of Belarusians are registered in two Federal Districts (Figure 2): the Central Federal District (42.0%) and the North-West Federal District (35.7%), both of which border Belarus and where the biggest Russian cities are located. This geographical distribution might as well prove correct for labour migrants: as one can see from Figure 2 these districts have wages twice as high as in Belarus.

The relative unpopularity among Belarusians of eastern Federal Districts with high average wages is explained as follows. There are higher costs of migration due to distance and due to the fact that a significant part of wage differentials in the Ural and Far Eastern districts is wage compensations for living in regions with a higher price level and worse non-pecuniary characteristics: e.g. air pollution, poor medical services and a colder climate. After adjusting for these regional characteristics, the relative ranking of regions in terms of average wages changes considerably. According to research findings (Oshchepkov, 2007), in Russia half of the interregional wage variation between workers with similar productive characteristics should be considered to be compensative.

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[9]According to CMD data in 2012 72.6 percent of official contracts for work abroad were signed for the term equal or less than six months. By our estimation the average term of signed contracts was near five and a half months in 2012. To take into account a possible shorter duration of illegal work we took the range from five and a half to four months for calculations.

**Figure 2.Average wage and number of Belarusians registered by
the place of stay in Russian Federal Districts**

Source: Rosstat, Federal Migration Agency of the Russian Federation

Our main conclusion based on the above estimates is that the Belarusian balance of payments for 2012 uses lower numbers of Belarusian citizens engaged in the economy of Russia as a basis for computing remittance inflows. We shall return to this difference in the next section, while discussing the scale of remittances.

As regards to the type of migrants' selection which is equally important for our study, one might expect it could be determined more precisely through 2012 LFS data. when this data is given over to the public. But again, comparison of the expert estimates of the migrants' number and the figure reported in the Balance of labour resources (55,400) throws up some preliminary concerns. One possible explanation of differences is that people may be unwilling to disclose information about their labour migration experience. Remember that in 2011 the authorities announced that those working abroad should pay 100% costs for public utilities and health care services.[10]

4. Characteristics of remittances in Belarus

a. Scale, trends of inflows and outflows of remittances

Labour migration revenues (the sum of employees' compensation and workers' remittances) have been growing in Belarus since 2002, with the exception of 2009 when remittances decreased as a result of the recession in Russia (Figure 3). It should be noted that the gap between inflow and outflow has steadily widened in the last ten years.

The picture is not the same when one looks at the remittance inflows relative to Belarusian GDP (Figure 4): in 2009 their volume was highest in the period 2005-2010. It may indicate remittances' counter-cyclical nature (they decrease relatively during an economic boom in the source country) on the one hand, and the availability of other sources of economic growth, on the other. The share of remittances inflow in GDP reached 1.5% in 2012.

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[10] In 2011 only 22-25% of public utilities costs were repaid by population (http://news.tut.by/economics/230929.html).

Figure 3.Inflows and outflows of remittances in Belarus in 1993-2012, mln USD
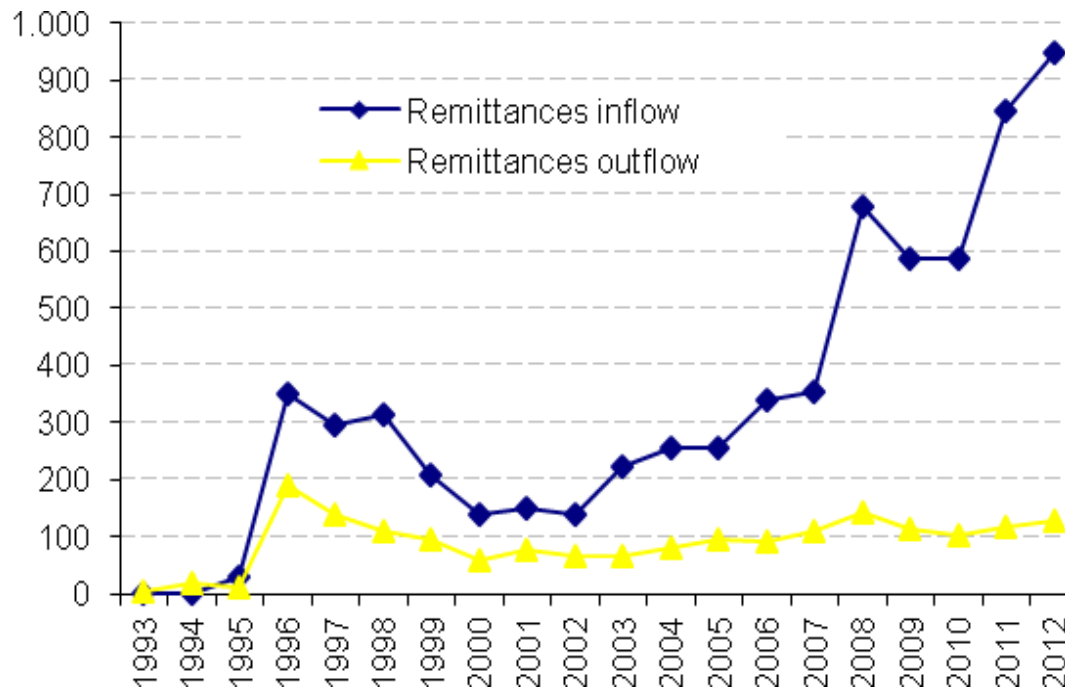
Source: World Development Indicators (based on IMF Balance of Payments Statistics Yearbook); NBRB data for 2011 and 2012.

Figure 4. Remittances inflows to Belarus as a percentage to GDP(%)
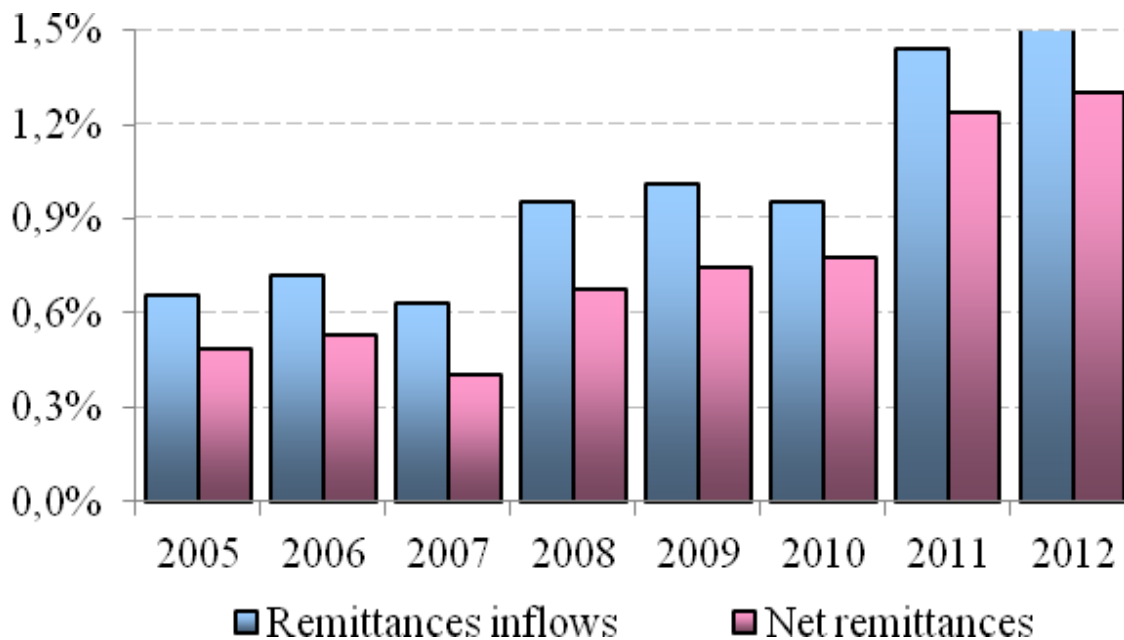
Source: Author's calculations based on IMF Balance of Payments Statistics Yearbook and NBRB data for 2011 and 2012.

The comparative dependence of Belarusian economy on remittances is shown in Figure 5, which represents shares of remittances in GDP in CIS-countries in 2010.

Figure 5. The share of remittance inflows in GDP of CIS-countries in 2010, %
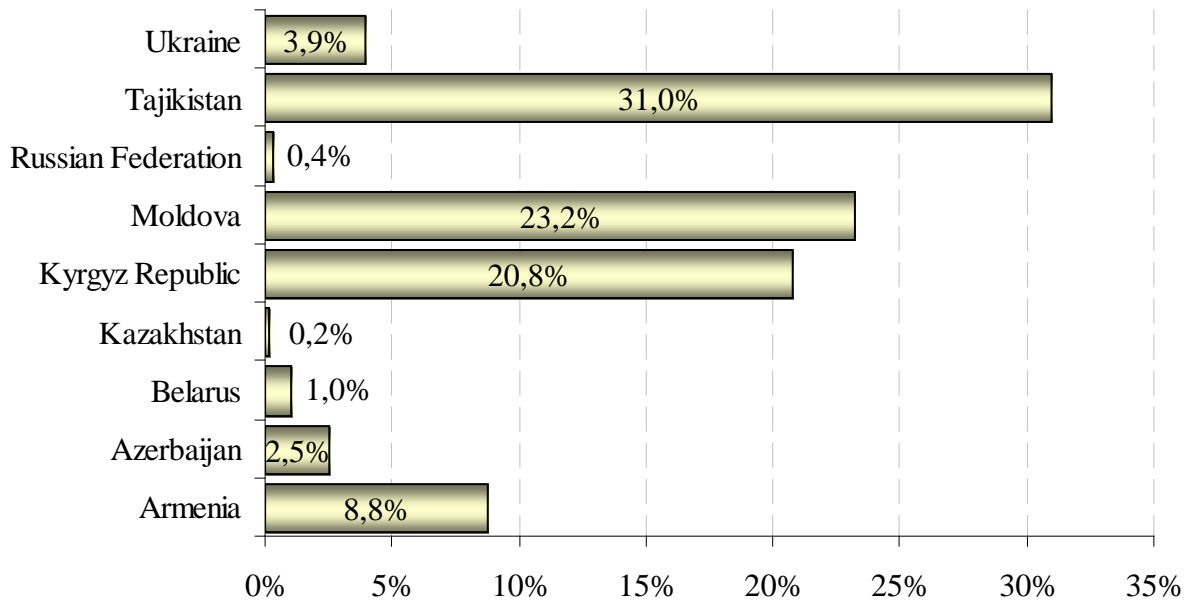
Source: World Development Indicators

It can be observed that more developed CIS countries are characterized by a smaller remittances quota in their GDP: in 2010 only Kazakhstan and Russia had smaller remittances inflows than Belarus.

At the same time the remittance share of Belarusian GDP was tightly connected with Russian economic development as it remains the main labour migrants' destination country. Belarusians had less incentive to work in Russia as the Russian ruble weakened 35% against the dollar from the onset of the crisis in August to January 2009. As Figure 6 demonstrates, the slow recovery of remittances began only in the last quarter of 2009.

Figure 6. Year-on-year growth in remittances inflows in Belarus (2009-2012, quarterly)
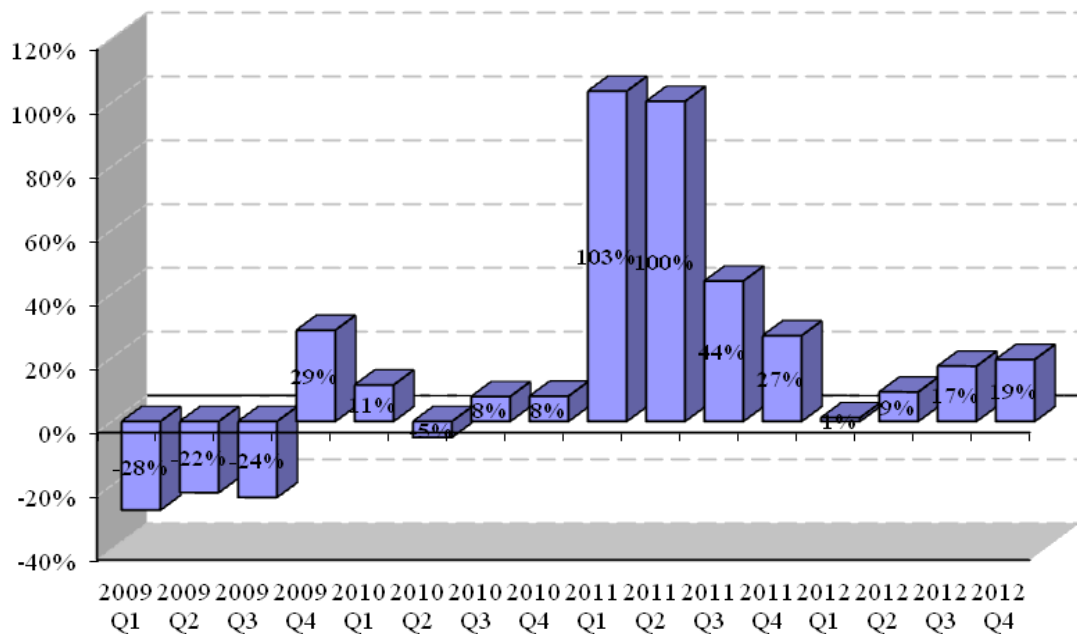
Source: Author's calculations based on NBRB Balance of Payments Statistics.

Until 2011, when Belarus faced a socio-economic crisis, the country has not relied extensively on remittance inflows. It is not surprising, that National Bank data now show remittances growing at a rapid pace in 2011. The 60% increase in remittances (in dollar terms) reported for Belarus in 2011 was, to the best of our knowledge, the largest in the region. This growth continued during all quarters of 2012 indicating that the recovery from 2011 crisis is still in progress.

b. Structure of remittances, main countries and channels

The structure of remittances inflows and outflows differs significantly (see Table 1 and Figure 5). In the case of inflows there is a domination of employees' compensation, and its share equaled 60% in 2012. The opposite is true in the case of outflows: the share of employees' compensation has been growing since 2005, when it was only 0.6% (12.5% in 2012).

Table 1.The structure of remittances in Belarus, 2005-2012, million USD

Indicator	2005	2006	2007	2008	2009	2010	2011	2012
Employees' compensation inflow	120.1	175.4	156.6	413.8	333.7	327.7	495.1	569.0
Workers' remittances inflow	78.5	90.1	128.3	164.0	165.2	198.8	350.4	379.5
Employees' compensation outflow	0.3	2.5	5.0	11.3	10.0	11.9	12.4	15.9
Workers' remittances outflow	51.9	67.8	96.6	156.9	120.8	86.5	106.4	110.9

Source: NBRB Balance of Payments Statistics.

Figure 5. The difference in remittances structure between inflows and outflows,2005-2012
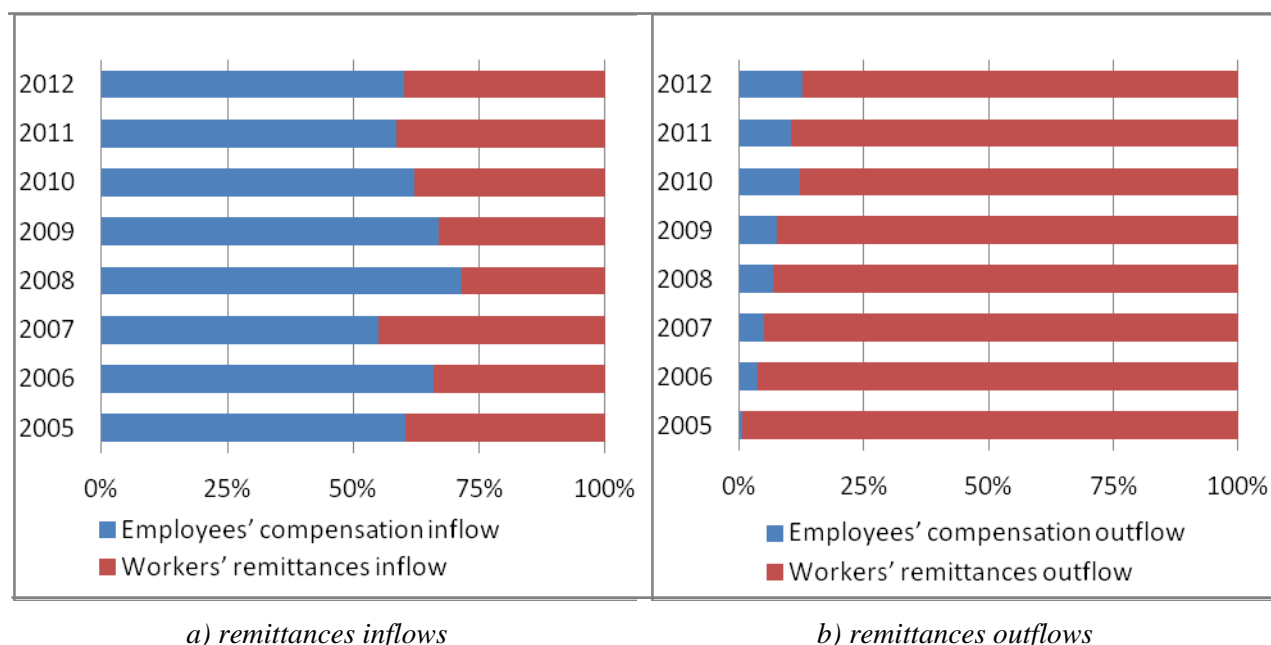
a) remittances inflows   b) remittances outflows

Source: Author's calculations based on NBRB Balance of Payments Statistics.

Given that 90.2% of labour migrants, according to Census data, work in Russia, it is not surprising that Russia dominates in remittances inflows. More than 57% of remittances came from this country in 2011 (Figure 6). Next comes France (6.9%), Latvia and the USA (5.3%), Sweden (3.7%) and Kazakhstan (2.4%).

Figure 6. Remittances inflows and outflows structure by countries in 2011[11]

| a) Inflows | b) Outflows |
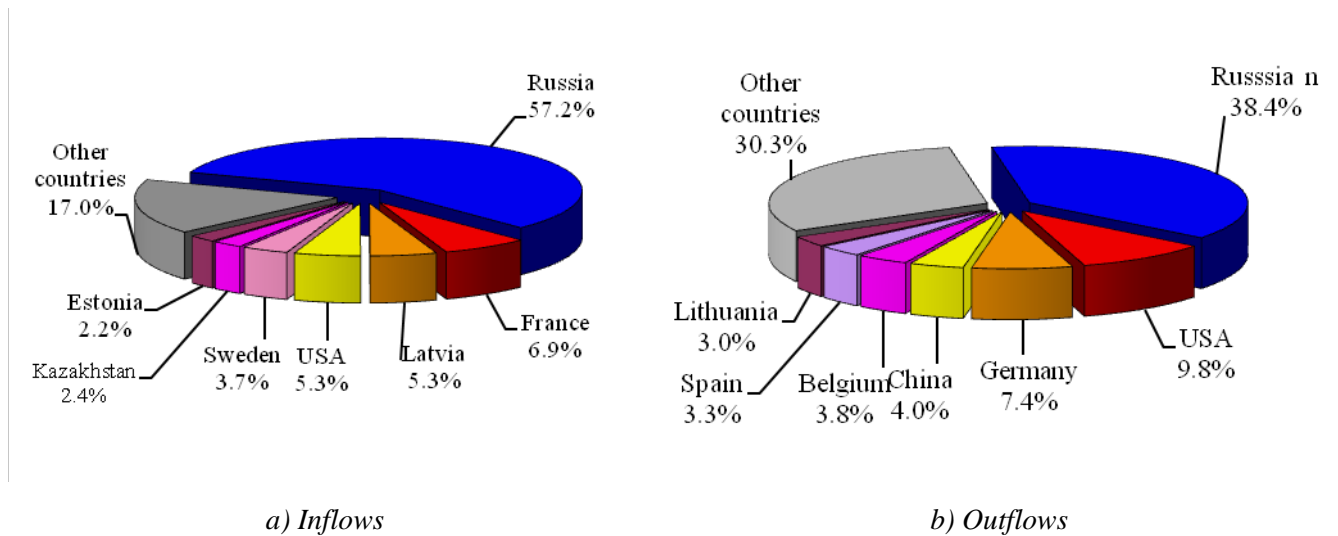
Source: NBRB Balance of Payments Statistics.

Russia prevails also in terms of remittances from Belarus: it absorbed 38.4% of total remittances outflow in 2011 followed by the USA (9.8%), Germany (7.4%), China (4%), Belgium (3.8%), Spain (3.3%) and Lithuania (3%).

Structure of only workers' remittances by countries for 2012 is presented in Figure 7 and Table G1 (Appendix G).

Figure7.Workers' remittances inflows and outflows structure by countries in 2012

| a) Inflows | b) Outflows |
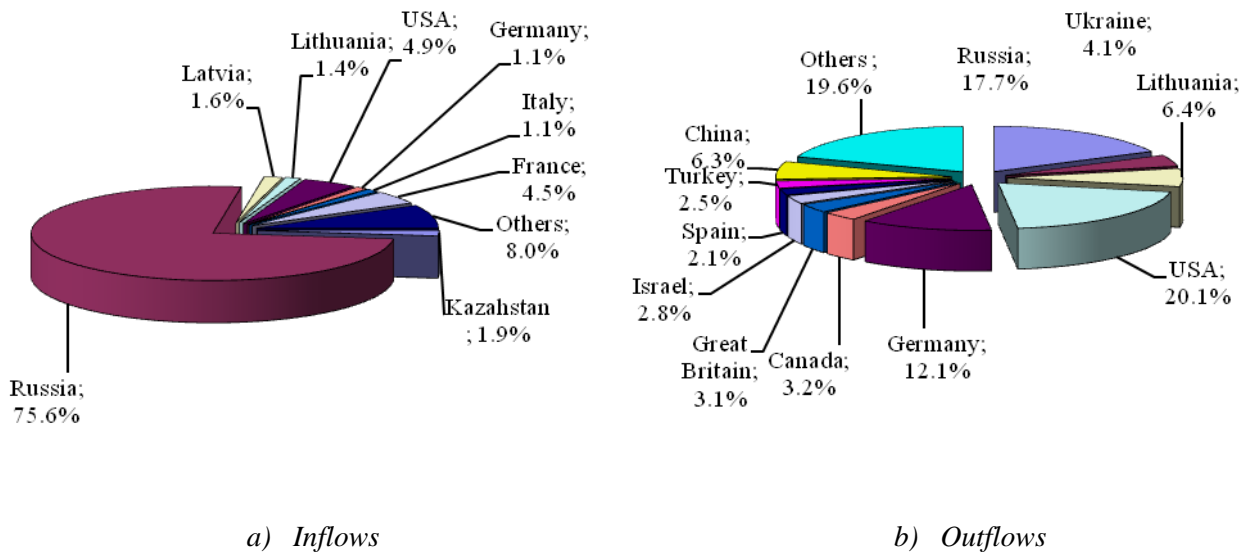
Source: NBRB Balance of Payments Statistics.

We can see that migrants send over 75% of workers' remittances from Russia. The unexpectedly high workers' remittances outflow may not only indicate the scale of immigration to Belarus- It may reflect too money transfers to intermediaries abroad who then organize goods purchase and send these

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[11]Data are from Balance of Payments for 2011 and NBRB does not give any details for the category "other countries".

on to Belarus. As such transfers are made between physical persons (households) it is not possible to separate it from workers' remittances.[12]

The structure of personal remittances volume (calculated according to the methodology represented in Table 1) gives some more information about the net amount of remittance inflow. The volume of income taxes and social contributions related to employment of border, seasonal, and other short-term workers is set out in Appendix H. According to NBRB it composes only 1.2% of employees' compensation. These figures confirm an intuitive conclusion that a lion's share of employees' compensation inflow is transferred through informal channels[13].

According to our rather modest estimate the number of labour migrants from Belarus working in Russia (130,000-180,000) is 2.5-3.5 times higher than that used by NBRB for employees' compensation calculation (52.000 on average). Based on this ratio and taking into account Russia's share in total remittances inflows (57.2%) we can estimate that in average remittances inflows to Belarus is 1.9-2.4 times higher than that recorded in balance of payments. Using this rough estimate we can approximately assess the size of remittances in Belarusian GDP in 2011-2012 at 2.8-3.6%. Some further corrections could be made, e.g. Poland, as we noted above, is obviously underestimated as a destination country.

c. Patterns of use of remittances

To the best of our knowledge, only one survey has been conducted on this topic (Shakhotska, 2003). The study is based on a "snowball approach" and is not fully representative. Problems that have been resolved with the help of labour migration revenues are presented in Table 2, comprised by using Shakhotska (2003).

Table 2. Problems resolved by migrants due to labour migration

Problems that have been resolved	% of responses
Improving of housing conditions and facilities	86.3
Purchase of durables	70.9
Purchase of good clothes	58.5
Education-related issues	52.1
Health care and recreation	52.1
Allow good quality food	48.7
Car purchase	33.3
Help to relatives	22.2
Business-related issues	21.4
Subsistence	15.0
Other reasons	2.1

Note. Multiple choices were possible.

Source: Shakhotska (2003).

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[12]Additional research is needed to study this issue but we can assume that at least a part of outflows to China and USA are inflated by this import scheme. Analysis of postal service turnover between countries can help to make some adjustment to workers' remittances outflow.

[13]As for the main channels of personal transfers, they come mainly through financial institutions. At present on Belarusian market then remitters can use the services of 17 international transfer systems such as Western Union, Money Gram, Юнистрим, Contact, Лидер, Anelik, Быстрая почта, MIGOM, Interexpress, Золотая корона, BLIZKO, Аллюр, Блиц, FASTER, Caspian Money Transfer, Coinstar, PrivatMoney. But there are also quite significant in cash transfers from long-term migrants which can be estimated as at least 25% of the total value of personal transfers.

The study shows that labour migrants managed to resolve a number of major issues. These include improvement of housing conditions and facilities (most respondents had housing-related problems), purchasing durable consumption goods, good quality clothes and food. For 52.1% of respondents labour migration was a way to find funds to invest in education and recreation as well as for paying for medical services. Fewer than one quarter of respondents mentioned helping relatives and business-related issues as their motive for migration. Finally, labour migration was a strategy for fighting poverty for only 15% of respondents.

Again, data availability is a problem in analysing remittance patterns in Belarus. The structure of migrant workers' expenditure is unknown. This makes it difficult to come to any sound conclusions about their impact on households and on the national economy overall.

5. Development impact and side effects of remittances in Belarus

It should be noted that most early articles on the effect of immigration on the source economy found unambiguous negative effects. For example, Grubel and Scott (1966), Bhagwati and Hamada (1974) concluded that the source economy suffers a loss in income when natives immigrate to other countries. The more recent literature offers more ambiguous conclusions. During the last two decades or so, the economic analysis of remittances has experienced a significant renewal. It has been understood that source countries need not suffer economic decline from the departure of nationals. This has been done by linking immigration to human capital formation, introducing real world complications such as return migration and network effects, and technology flows between countries.

The microeconomics of remittances has focused, since the early 1980s, on the role of information and social interactions in explaining transfer behavior. Familial and strategic motives are increasingly acknowledged by economists as determinants of remittances[14] (Lucas and Stark, 1985). From a macroeconomic perspective, new growth theories have also altered a very great deal the directions of research into migration and remittances. While previous research in the 1970s and 1980s was centered on the short-term effects of international transfers within the framework of static trade models, the focus gradually shifted to long-run considerations, notably the role of remittances in the dynamics of inequality and development (Stark, Taylor and Yitzhaki, 1988). In a recent survey of Rapoport and Docquier (2006) evidence on the growth effects of remittances is demonstrated through their influence on inequality and human capital formation, entrepreneurship, productivity growth and rural development. It is shown that migration and associated remittances tend to have an overall positive effect on origin countries' long-run economic performance.

Here the multidimensional impact of remittances on the social and economic situation of the receiving country must be borne in mind. In the empirical part of the paper we will focus on their influence on economic growth, foreign exchange, inflation, investment and financial development, employment, human capital formation, poverty and income inequality in Belarus. Possible channels of public moral hazard will be discussed as well. Where possible some recent results of empirical studies looking at development and the side effects of remittances in the CIS countries will be provided.

Before entering the empirical part of the paper it is worth noting that one of the reasons for a lack of consensus about the impact of migrants' remittances in the literature may lie in the different approaches used. For instance, Chami *et al*. (2008) identify three differences in their studies on the impact of remittances on economic growth: (i) the measure of remittances used; (ii) the sample period;

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[14]Lucas and Stark (1985) developed a theory that views remittances as part of an inter-temporal, mutually beneficial contractual arrangement between the migrant and the household in the country of origin. These contractual arrangements are based on investment and risk. In the case of investment the family bears the cost of educating the migrant worker who is expected to repay the investment in the form of remittances. This motive not only predicts that remittances could be higher for better educated workers, but also that remittances from the children of the head of the household would be higher than from in-laws and even spouses.

(iii) the variables included in the model; and (iv) the instrument used for remittances to deal with endogeneity. To this list, Sugiyarto and Vargas-Silva (Asian Development Bank, 2012) add (v) the selection of countries included in the estimate, given that some studies are regional (e.g., Mundaca 2009 and Vargas-Silva et al. 2009); and (vi) the actual equation estimates, given that it is common to include a square term for remittances or interactions between remittances and other terms (e.g., Giuliano and Ruiz-Arranz 2009).

a. Remittances and economic growth

Remittances can exert a positive impact on economic growth. Cross-country regressions indicate that remittances can have a positive, though relatively mild, impact on long-term growth (Mansoor and Quillin, 2007). The main channels of influence are investment in physical and human capital and consumption growth. Within the CIS, there is a strong regional differentiation in remittances impact on economic growth. For the low-income and small economies (Tajikistan, Kirgizstan, Moldova, Armenia), remittances have become one of the main drivers of economic growth, while for larger and higher income economies (Ukraine, Belarus) this impact is not as important (Kupets, 2012). After 2000, the growth of GDP in CIS countries coincided with the growth of remittances from the Russian Federation. The strong dependency between CIS countries growth and the growth of the Russian economy is explained, at least partially, by the large volume of remittances sent from Russia (Alturki, *et. al*., 2009). Remittances have a direct effect on consumption: the strong positive effect of consumption driven by remittances is noticed in food and light industries as well as services (Atamanov, *et. al,* 2009).

At the same time, however, Chami, Fullenkamp and Jahjah (2003) build on the idea that remittances take place under asymmetric information and are likely to generate moral hazard problems. They argue that remittances can have a negative effect on economic growth in receiving countries. They test this prediction using aggregated panel data for 113 countries. They apply various econometric techniques. They find a negative effect of remittances on growth after controlling for the investment/GDP ratio, regional dummies and other control variables. But the authors disregard the possibility that, due to liquidity constraints, remittances could affect investments (thus making the investment/GDP ratio endogenous) and human capital formation, the latter variable being completely absent from their analysis.

The positive sides of remittances for the CIS states are their low volatility and neutral impact on foreign debt (Schrooten, 2006). On the other hand, high levels of remittances may cause the dollarization of the national economy and the quick growth of import (Havrylyshyn and Beddies, 2003). In four of the CIS countries the volume of remittances exceeds volume of FDI: in 2003, the ratio was 7.9 for Moldova, Kyrgyzstan, 5.9 for Tajikistan and 1.3 for Armenia (Schrooten, 2006). For Belarus, this indicator has been rather volatile – in 2003 it was about 1.3, in 2011 – 0.2 and increased to 0.7 in 2012 (Table 3).

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Table 3.Remittances inflow to Belarus in relation to GDP and selected balance of payments inflows, 1993-2011

Year	Remittances inflow as percentage of					
	GDP	Net ODA	Net FDI	Net private capital flows	Exports of goods, services and income	Goods exports
1993	0.002	0.2	2.3	2.3	0.02	0.02
1994	0.002	0.3	3.8	3.8	0.01	0.02
1995	0.2	12.8	193.9	193.9	0.54	0.59
1996	2.1	458.9	335.4	389.4	5.2	6.1
1997	1.8	536.6	84.3	89.3	3.7	4.3
1998	1.8	808.6	156.9	146.3	4.4	5.1
1999	1.5	545.1	47.0	49.3	3.2	3.7
2000	0.9	403.6	117.4	85.4	1.8	2.1
2001	1.0	378.2	156.2	197.4	1.8	2.0
2002	0.8	357.2	31.0	31.6	1.5	1.8
2003	1.1	459.2	130.6	126.1	1.9	2.2
2004	1.0	517.6	158.0	113.9	1.6	1.8
2005	0.8	440.4	84.2	97.5	1.4	1.6
2006	0.9	444.1	96.8	104.7	1.5	1.7
2007	0.7	422.9	19.8	20.2	1.3	1.5
2008	1.1	617.0	31.6	31.5	1.8	2.1
2009	1.1	603.5	33.0	32.7	2.3	2.8
2010	1.0	427.2	43.6	23.2	1.9	2.3
2011	1.4	663.1	20.7	17.0	1.7	2.0
2012	1.5	-*	70.6	82.3	1.7	2.1
1995-1999 average	1.5	472.4	163.5	173.6	3.4	3.9
2000-2007 average	0.9	427.9	99.2	97.1	1.6	1.8
2008-2012 average	1.2	577.7**	40.1	37.5	1.9	2.3

* Not available; **Average for 2008-2011

Note: Remittances inflows include compensation of employees and workers' remittances. Net ODA refers to net official development assistance and official aid received. Net FDI refers to the net inflows of foreign investment. Net private capital flows consist of net foreign direct investment and portfolio investment.

Source: Author's calculations, World Development Indicators (based on IMF Balance of Payments Statistics Yearbook and data files), NBRB data for 2012.

It is worth noting that remittances can be strongly pro-cyclical, which means that remittances decrease (increase) after downturns (upturns) in the home economy. In this case, receiving countries may have to deal with an additional impact (i.e. amplification effect) of upturns or downturns in the receiving economy. Alternatively, remittances can be strongly counter-cyclical, which means that remittances increase significantly when the home economy is in a downturn. Remittances may then work as macroeconomic stabilisers that boost the recipient economy during downturns and cool off the economy during upturns. In this case receiving countries could use these flows as a part of broader stabilisation policies.

Vargas Silva (2012) concludes that the cyclical nature of remittances tends to be country specific and suggests that for some corridors remittances are counter-cyclical[15], while for others remittances are pro-cyclical.

The impact of remittances on economic growth in Belarus has not been studied in detail yet. According to a study by the International Fund for Agricultural Development (IFAD, 2008) the size of remittances in Belarus was estimated at 6.3% of GDP in 2006. In their study in 2011 Luchenok and Kolesnikova, based on Ratha and Shaw's (2007) approach, estimated that remittances made up about 2% of GDP and 2.6% of gross external debt in 2010. They considered remittances as a substantial support for the national economy (Luchenok and Kolesnikova, 2011). The volume of remittances sent to Belarus had been seriously hit by the crisis in the Russian economy in 2009, though there was no change in its share in national GDP (between 0.7 and 1%) due to devaluation of the Belarusian currency. In 2009 the largest part of Belarusian labour migrants worked in the Russian Federation – about 82% of the remittances sent to Belarus came from Russia (comparing to 63% in Georgia, 84% – Armenia and 42% – Moldova (O'Hara, Ivlevs and Gentile, 2009).

The data in the Table 3 show that the share of remittances in GDP and main balance of payments inflows is not high, especially compared to some transition countries (e.g. Tajikistan, Kyrgyzstan and Moldova). In 1990 their share was substantively higher in relation to net FDI and private capital flows, as well as to exports of goods, services and income. The only exception is net official development assistance and official aid received.

However, as the 2008-2012 average share illustrates, the significance of remittances has grown since the 2000-2007 period. Their importance may be even higher taking into account that remittances' inflow has been underestimated in Belarus for the last two years.

In the case of Belarus we suggest that during last years remittances were counter-cyclical in nature (Figure 8).

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[15] The counter-cyclical nature of remittances may also affect the selection of an exchange rate regime by receiving countries. Remittances mitigate the costs of losing domestic monetary policy autonomy (i.e. losing the ability to respond to economic shocks) by serving as a risk-sharing mechanism. After a negative shock in output, there is an increase in emigration from the country and an increase in remittances from both previous and new migrants. Frankel (2011) argues that this suggests that remittances should join trade, labour mobility, and other transfers between countries, on the list of Optimum Currency Area criteria.

Figure 8.Remittances inflow compared to net FDI, 1993-2011
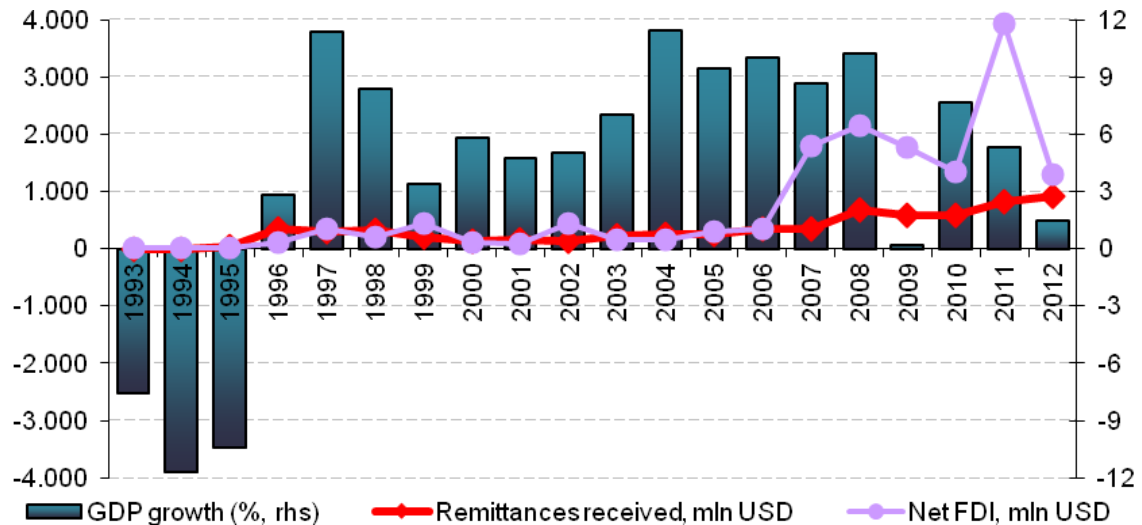
In 2011-2012 remittances worked as a macroeconomic stabilizer, supporting the national economy during an economic crisis. It is a smaller but more stable source of development than private FDI flows. Thus, in 2012, while GDP has grown by 1.5% remittances have increased by 12.2%. The growth rate of personal remittances was even more significant, by 15.2% (Appendix H).

To reveal the effect of remittances on the Belarusian economy we apply the methodology of vector autoregression (VAR) model in reduced form as one of the most flexible for the analysis of the multivariate time series. The VAR model, which is often seen as an alternative approach to the simultaneous equation approach, has proven to be especially useful in describing the dynamic behavior of the economic and financial time series.

We use data for 2005Q1-2013Q1, since quarterly data on remittances are available only from 2005 (see Appendix I Table I1 and Table I2 for the description of variables). Tests of non-stationarity show that all time series have to be transformed to their stationary values (Table I3).

We start first with an analysis of remittance impact on economic growth. An analysis of seasonally adjusted Belarusian GDP and remittances dynamics (2005=100) shows that both time series have a stochastic trend: see Figure I1; first autocorrelation coefficients are 0.91 and 0.90 respectfully. The first differencing eliminates the problem of stochastic trending.

The pair-wise correlations (Table I4 and Table I5) indicate that remittances appear to be pro-cyclical with respect both to Belarusian and Russian GDP. However, the bi-variate nature of pair-wise correlations makes it difficult to control for additional factors. We must seek for stronger confirmation of that conclusion by estimating the VAR model and conducting Granger causality tests.

The Bayesian information criterion (and well as LR, AIC and HQIC criterions) shows that the number of lags needed is 2 (see Table I6). So the preferable model in differences in the remittances and GDP series is VAR(2)[16].

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[16] White's heteroskedasticity test attests to the validity of the specifications as well as the unbiasedness and the efficiency of the estimates. Additionally, the LM serial correlation test and the correlograms lead us to believe that the residuals are serially uncorrelated. The AR roots graph indicated that all the variables in VAR were stationary as all the characteristic roots are less than unity, that is, they lie inside the unit circle.

The tests for the joint significance of the VAR coefficients show that they are strongly jointly significant at the 1% level. When tested separately coefficients at both lags in the GDP equation are significant at the 1% level: the p-value is 0.000 and 0.004 respectfully.

Granger causality Wald tests indicate that lagged remittances growth can be used to predict the growth of Belarusian GDP (p-value is 0.021) but not *vice versa*. As signs of the VAR model's coefficients show, starting from lag 2 remittances growth negatively affects GDP. These coefficients are used to graph Impulse Response Functions (IRF) showing the effects of shocks on the adjustment path of the variables (depicted in Figure I2[17]).

Examining of the IRF indicates that remittance inflows are strongly autoregressive over the forecast horizon. Series are stationary and therefore shocks are not persistent; their effects almost disappear by the eighth quarter. Quadrant 2 (northeast) of the IRF displays the response of the cyclical components of remittances to a one standard deviation shock of the cyclical components of Belarusian GDP. It is positive during two quarters and then dies out, indicating mild, though not statistically significant, pro-cyclicality of remittances and GDP. Quadrant 1 (northwest) is of most interest for us – we can see that shocks to the remittances create a smaller, but statistically significant response in GDP. This part of Figure I2 shows that GDP responds negatively to shocks to remittances in the second and subsequent quarters. GDP recovers from the shocks to remittances, but only reach its initial level (value before the shock) after about 8 quarters.

As expected, remittances responded by immediately spiking, then dropping sharply after two quarters, and settling at the initial level by the end of forecast horizon (see Quadrant 3 in the Figure I2). This could indicate that remittances have their own built-in force that drives their growth.

The forecast error variance decompositions (FEVD) presented in the Figure I3, measure the contribution of each type of shock to the forecast error variance. Table I7 shows the variance decomposition of remittances over eight quarters. The results indicated that remittances accounted for most of the variability in itself – from 98.9% in the second quarter to 82% in the eighth. GDP accounted for, on average, 12.5% of the innovations in remittances. This result confirmed the findings of other authors (e.g. Vargas-Silva and Huang, 2006), who indicated that host country determinants are more important in explaining remittance flows.

The last conclusion remains unchanged after adding Russian GDP as a third variable in the VAR model[18] (Table I8). However, then Russian economic growth becomes the factor, explaining most of the remaining variability of remittances inflow to Belarus: on average, 9.5%, compared to 0.9% of the innovations in remittances explained by Belarusian GDP (see Table I9 and Figure I4). The rise in remittances due to shocks to Russian GDP is larger than the increase experienced by remittances caused by positive shocks to Belarusian one.

Overall, having analyzed VAR results we can come to the following conclusions addressing our main hypotheses. First, the fact that remittances respond positively to the shock in Russian GDP confirms our expectations. That is, remittances should increase with the increasing income of migrants and of temporary workers, who increase in number when Russian GDP grows. Equally, a reduction in the income generating potential of migrants would lead to a reduction in remittances to Belarus. It is not surprising, then, that the inflow of remittances is strongly pro-cyclical with respect to Russian GDP.

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[17] We do not interpret the magnitudes of the VAR coefficients, as coefficients on successive lags tend to oscillate and complicated cross equation feedback may exist (Sims, 1980). Figure consists of a solid line in the gray area, representing a 95 percent confidence interval. The time horizon is 8 quarters.

[18] VAR(2) coefficients are jointly significant at the 1% level. Sign of the coefficient before remittances again shows that at lag 2 remittances growth negatively effects Belarusian GDP (p-value is 0.013). Granger causality Wald tests indicate that lagged remittances growth helps predict growth of Belarusian GDP (p-value is 0.040) as well as Russian GDP (p-value is 0.009); Russian GDP Granger-causes Belarusian GDP (p-value is 0.027). The lagrange-multiplier test shows the absence of autocorrelation at lag order 2.

Second, contrary to our observation based on annual data, an analysis of quarterly data shows more variation in the series and remittances appear to be slightly pro-cyclical with respect to Belarusian GDP. In any case, remittances tend to eventually stabilize at their original levels: in this respect, macroeconomic shocks do not appear to have a persistent effect. This may indicate that remittances *per se* are more a concomitant result of economic system, reflecting some fundamental characteristics of labour market institutions, rather than a by-product of temporary economic crisises. Third, we cannot consider remittances as a decisive driver of economic growth in Belarus. Remittances support GDP growth immediately after flowing into the country, possibly by increasing domestic private consumption. But after two quarters GDP responds negatively to their growth. This may be explained by possible brain drain effects and decreasing productivity due to lower return on remaining human capital. The reason economic activity declines in response to remittances could also be explained by the loss in external competitiveness due to Dutch Disease effects (see the next section).

b. Remittances and foreign exchange

Remittances have become an important source of foreign exchange and financing for many developing countries (Vargas Silva, 2012). The impact of remittances on the foreign exchange in the CIS is very high due to the large quantity of labour migrants (up to 30 million in the region) (Canagarajah and Kholmatov, 2010). For a number of low-income states such as Tajikistan, Kyrgyzstan and Moldova, remittances are the largest source of foreign exchange, helping these countries to reduce their account deficit and to pay for imports (Kupets, 2012).

It is worth mentioning that the balance of payments model holds that a foreign exchange rate must be at its equilibrium level - the rate which produces a stable current account balance. A nation with a trade deficit will experience a reduction in its foreign exchange reserves, which ultimately lowers (depreciates) the value of its currency. A large inflow of remittances can compensate for the trade deficit and contributes to an appreciation of the national currency.

In the balance of payments of the Republic of Belarus for 2012, the net inflow of remittances totaled 821.7 million USD (1.3% GDP), gross revenue volume made up 948.5 million USD (1,5% GDP). Table 4 shows that the remittances share in the current account balance varies significantly: they range from 7.1 % to 23.5 % of country's deficit, 2006-2011. In 2012 remittances share in Belarusian current account deficit reached 52.1%, the maximum recorded since 2012.

We have previously estimated that the real volume of remittances is twofold higher than figures provided by balance of payments. This can be additionally confirmed by examining the balance of cash foreign exchange by households, which has been persistently positive since the end of 2011. As one can see from the Figure 9, this is a first in the 2005-2012 period.

It is interesting to note that remittances inflows, according to the balance of payments statistics, comprise only 14.3% on average in relation to total foreign currencies sales by households in 2012 (Appendix J). This shows the level of the dollarization of the Belarusian economy but, at the same time, at least part of this gap can be sourced by unrecorded inflows of remittances. Even in the second and third quarters of 2011, when a sharp deficit of foreign currency had occurred, households sold 2.5 times more foreign currency than the volume of remittances inflows. This took place in spite of the fact that the official exchange rate was 2-3 times lower than the market one.

Table 4. Selected indicators of current account and foreign exchange, 2005-2011

Indicator	2005	2006	2007	2008	2009	2010	2011	2012
Current account balance (mln. current USD)	435.5	-1448.4	-3039.7	-4988.1	-6177.8	-8277.7	-5026.2	-1819.3
Net trade in goods and services (mln. current USD)	341.8	-1531.5	-2799.0	-4608.3	-5568.5	-7454.6	-1181.0	2936.1
Net trade in goods (mln. current USD)	-637.6	-2269.0	-4041.8	-6236.8	-6957.0	-9077.6	-3466.8	497.5
Goods exports (mln. current USD)	16108.8	19834.7	24361.7	32804.7	21360.7	25405.1	40927.6	45506.3
Goods imports (mln. current USD)	16746.4	22103.7	28403.5	39041.5	28317.7	34482.7	44394.4	45008.8
Consumer price index (2005 = 100)	100.0	107.0	116.0	133.3	150.5	162.2	248.5	397.1
Real effective exchange rate index (2005 = 100)	100.0	97.0	91.4	90.3	88.7	83.7	72.5	73.5
Official exchange rate (BYR per USD, period average)	2153.8	2144.6	2146.1	2136.4	2793.0	2978.5	4 975	8 336
Remittances inflow (mln. current USD)	254.6	339.8	354.2	679.8	588.8	589.2	845.5	948.5
Remittances as a share of current account balance, %	58.5	-23.5	-11.7	-13.6	-9.5	-7.1	-16.8	-52.1
Remittances as a share of goods imports, %	1.5	1.5	1.2	1.7	2.1	1.7	1.9	2.1

Source: NBRB data, author's calculations.

Figure 9. Remittances inflows and balance of cash foreign exchange by households in 2005-2012, mln. USD
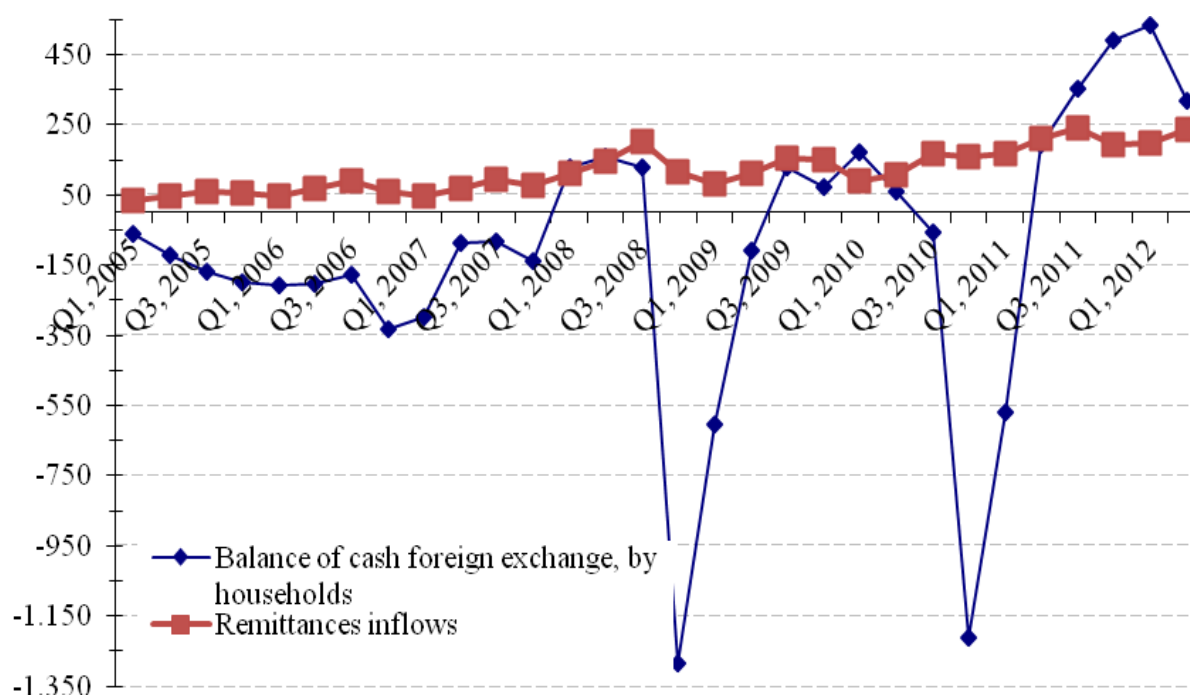
Source: NBRB data

When a country is strongly dependent on remittances, it is possible that with remittances growing there will be serious appreciation in the national currency exchange rate (Dutch disease). This might have a negative impact on the economy development (Rao and Hasan, 2012). While it most often refers to natural resource discovery and a subsequent large inflow of foreign currency, the mechanism of Dutch disease is the same in case of remittances. An increase in revenues from labour migration makes national currency stronger compared to that of other nations (manifest in an exchange rate), resulting in the nation's other exports becoming more expensive for other countries to buy, making, in turn, the exporting sectors less competitive[19].

In a recent study, using disaggregated sectorial data for developing and transition countries, Lartey, Mandelman and Acosta (2012) reveal two characteristics of the phenomenon known as "Dutch disease" activated by remittances inflows. They show that rising levels of remittances have spending effects that may lead to real exchange rate appreciation, and resource movement effects that favor the non-tradable sector at the expense of tradable goods production. In general, this disease is found in low-income and relatively closed economies that are highly dependent on remittances. Some symptoms of the Dutch disease have been found in Moldova and Armenia, but not in Tajikistan (Roberts and Banaian, 2004).

Observation of the annual data allows us to hypothesize that in Belarus there are no symptoms of the Dutch disease, conditioned by the growth in remittances sent to the country. One sign, which demonstrates this is that the share of the service sector in GDP (its growth often serves as an indicator of the "Dutch disease") has been quite stable over the last 20 years (Appendix K).

Analysis of the VAR(2) model describing relations between remittances and REER attests that coefficients are jointly significant at the 5% level. Results of the regressions show that growing volume of money sent home by migrant workers and migrant transfers is associated with the depreciation of Belarusian national currency: the coefficient at lag 2 is negative (p-value is 0.074)[20]. One possible explanation is that, in fact, remittances do not compensate the trade deficit. It is not only because these are not large amounts, but also because most recipients of remittances may use these resources for consumption, buying mainly imported goods: this is implicitly confirmed by a negative correlation between remittances inflow and REER starting at lag 2. This leads to a further decrease in the real effective exchange rate of the national currency. However this explanation does not clarify causal relationships.

Granger causality Wald tests indicate that remittance inflows cannot be used to predict real effective exchange rate, but instead lagged REER helps predict growth of remittances inflow (p-value is 0.077). In short, when devaluation takes place in Belarus more people go abroad to support their families and more transfers from abroad come in. Indeed, IRF shows that an exchange rate shock leads to an increase in remittances inflow in the next quarter (Figure I5). Shocks are not persistent; their effects decrease in a quarter and disappear within a year.

Thus, we can further argue that this is high inflation (Table 4) that causes depreciation in national currency in relation to the currencies of Belarus' trading partners. Inflation as a result of an unbalanced economic policy in case of highly opened Belarusian economy automatically leads to devaluation (see next section). The cheaper currency makes Belarusian exports including labour resources more affordable on the global market, while making imports more expensive. Toughening budget constraints and international competition do not allow exporting sectors to absorb the unemployed as before and labour migration increases.

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[19] It will be recalled that the interpretation of the effective exchange rate is that if the index increases, the purchasing power of that currency is higher (the currency strengthened against those of the country's trading partners). A lower index means that the currency depreciated (devaluation) so that you need more of that currency to pay for imports.

[20] The coefficient at lag 1 is positive but statistically not significant.

c. Remittances and inflation

Modeling the influence of remittances on consumer prices is problematic in technical terms. CPI seems to be non-stationary (see Figure I1) and if this is the case conventional hypothesis tests, confidence interval and forecasts can be unreliable. Indeed, the Dickey-Fuller test statistic shows that the inflation series have a unit root. Taking the first difference in the variable does not help to eliminate non-stationarity: the CPI series is stationary only in third differences. This allows us to grasp the presence of a deterministic trend in the series which is a non-random function of time. In the case of quarterly inflation in Belarus, 2005-2012, this trend seems to be nonlinear, so that inflation rises *per* quarter by several percentage points and this grows over time. The presence of a deterministic trend in the inflation series in Belarus supports our conclusion about a strong connection between rising prices and economic policies.

The EG-ADF test suggested by Engle and Granger (1987) shows that inflation and remittances series do not share a stochastic trend. Apart from a deterministic trend which means the modeling of inflation is not quite appropriate we can detect in the inflation series a second type of nonstationarity: regression function changes over the course of the sample indicating the strong influence of changes (breaks) in economic policy. The p-value of the Chow test is < 0.001 and we can reject the null hypothesis in favor of the alternative that there is a break[21]. A short description of this break's influence follows.

In December 2010 the average wage in Belarus was 530 USD. The policy of printing money, which is a permanent feature of the economic cycle driven by the execution of administrative economic targets in Belarus, resulted in an inflation rate of 108% in 2011 and the devaluation of the Belarusian ruble by more than 189% (Table 4). In November 2011, according to official statistics, the average wage was just 280 USD (Appendix L Figure L1). Outside Minsk and other big cities wages were even lower.

In these circumstances low income workers were the primary target of economic support. Given comparatively low income differentiation and wage leveling (the Gini coefficient was 0.284 in 2011) qualified workers and high level specialists felt their income position became worse than average. In a sense this is an inherent characteristic of existing economic institutions in Belarus – to trigger mechanism of indexation of minimum consumer budget and minimum wage as a form of social support: for example, in 2010-2011 the minimum wage increased from 20% to 37% of average wage in the economy (see Figure L2). It is important part of the welfare system but during economic crises it works as a factor that pushes labour migration of highly-skilled workers rather than low skilled factory and farm workers who feel more protected. Even those who work in the prestigious banking sector, in enterprise management or in the media realize that they lack opportunities for professional development and cannot afford a good lifestyle. The lack of career opportunities leads to a brain drain of talented youth and this increases the opportunity costs of labour migration.

Adding CPI in third differences into the VAR(2) model of remittances and REER makes the conclusion that lagged REER Granger cause growth of remittances even stronger (p-value is 0.051)[22]. Wald tests also indicate that lagged remittances help predict CPI change, though at only a marginal level (p-value is 0.077). In the equation for CPI as a dependent variable (see Table I10) the sign of the coefficient before remittances at lag 1 is positive but not statistically significant; the sign at lag 2 is, surprisingly, negative (p-value is 0.024) which means that remittances growth leads to a decrease in CPI. We can interpret this in two ways. First, during the crisis private consumption freezes and this leads to price level stabilization. Growing remittances are simply used to compensate a decrease in

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[21] We examine whether a particular date (2nd quarter of 2011 when high inflation has started) causes a break in the regression coefficients.

[22] VAR(2) coefficients are jointly significant at the 1% level. Lagrange-multiplier test shows the absence of autocorrelation at chosen lag order.

living standards. The second explanation is based on the assumption that remittance-receiving households have a high propensity to import: growing imports compete with domestic goods and producers are forced to reduce prices. Both explanations, taking into account the deterministic trend in inflation, may mirror the inflationary nature of GDP growth in Belarus.

According to a research by the World Bank, a large volume of the remittances sent into a country may dramatically increase prices for non-tradable goods, such as real estate and land (Orozco, 2012). We can expect the same in Belarus, especially in the housing market, taking into account that 86.3% of respondents claim that labour migration improves housing conditions (Shakhotska, 2003).

The price index on the housing market is calculated in Belarus starting from 2010 and this does not allow us to make any well-grounded conclusions about its dependence on remittances inflows. The comparison of the price index of the housing market and the CPI shows that growth in the housing market from 2009 was less significant (Figure 10).

Figure 10. Price index on housing market (per square meter of total floor space of flats) and CPI, 2009=100
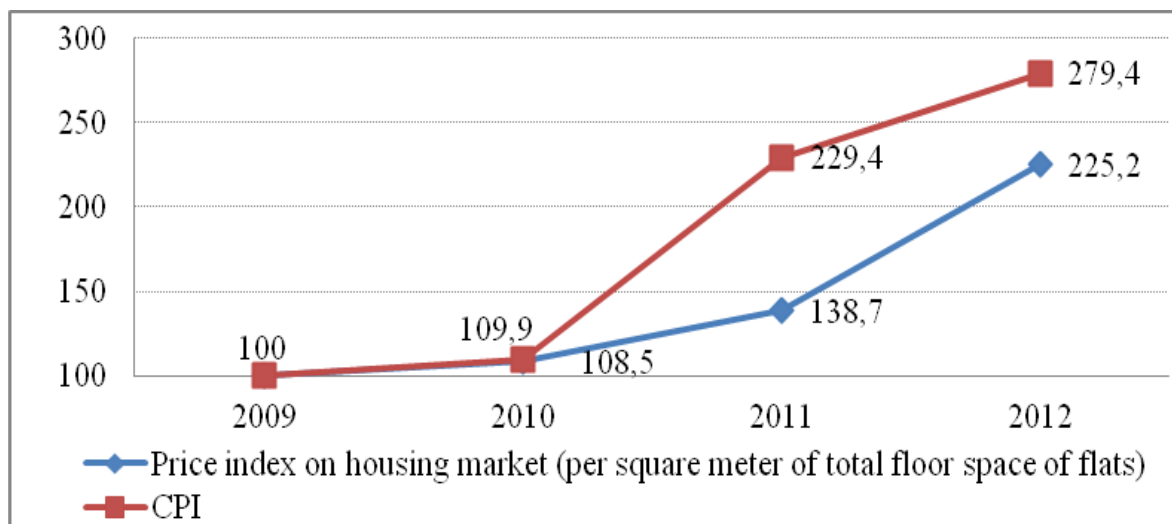
Source: authors' calculation based on Belstat data

The data on the number of individuals (families) show that improving of housing conditions does not demonstrate a perfect correlation with remittances volume, though the trend of both is ascending (Appendix M Figure M1). At the same time the dynamics of remittances and housing stock are well matched (Figure M2). However, it is hard to designate remittances as the important driving force of demand on housing construction in Belarus. Research shows that at present in this sector a "pushing out" model is dominating when the volume and structure of additional housing construction is determined by government plans (Siniak, Valetka and Rusiyanov, 2010). In total during 2009-2012 housing construction has absorbed 15-20% of national investments[23]. Evidently, large-scale priority allocation of resources in housing construction is taking place at the expense of other economic

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[23] It is worth noting that, for the first time, in 2010, the share of banking credits (53.3% against 44.3% in 2009) in total sources of housing construction exceeded the share of households funds (38.6% against 46.5% in 2009). In 2011-2012 96-97% of housing credits were issued by state-controlled banks on preferential terms. Yet another 4.7% of total investment in housing stock construction is covered from expenditures of the consolidated budget. It is not surprising thus, that econometric analysis reveals a strong positive influence in inflation dynamics on housing construction that indicates the inflationary character of housing construction funding (Valetka, 2011). The detected negative influence of wages dynamics as the driver of households' demand on the housing construction output can be explained as follows: increase in money emission is a common source of a government-led growth of wages and of investments' acceleration in housing construction. For example, while real growth of wages in 2012 reached 121.9%, the growth rate of housing stock decreased to 81.8% of 2011 level.

activities; not least commercial credits for private businesses become more expensive. So there is a risk that the national economy's diversification will slow and that existing imbalances will grow. Similar concerns are expressed in IMF (2011). Taking these side effects into account, it is suggested that a "pulling out" model would diversify risks and reduce alternative costs to residential investments: by a "pulling out" model we refer to one where the real estate market will play a proper role and supply will be guided by demand (Valetka, 2011). In this situation remittances could play a more significant role as a source of housing construction investment.

Individual private ownership of land in Belarus has been possible since 2009, this direction of remittances use seems not to be popular. According to State Land Cadastre data, as of 1 January 2012, the total area of land in the country amounted to 207,598 sq km. Of this, land in private ownership of households represents about 0.4% of the total area of land in the country, and it is currently possible to transfer another 8% of the total area of land to private ownership[24]. Given the restricted supply of land for privatising and increasing demand for individual housing, in the near future we can expect land prices to appreciate, not least because of growing demand driven by remittances.

d. Remittances, investment and financial development

In CIS countries most remittances are directed at everyday consumption rather than being invested in business. This tendency is observed all over the world (Cruz Zuniga, 2011). In case of the countries of Central Asia, a large portion of remittances are directed at the organization of weddings and other social costs (Thieme, 2012).

Atamanov *et al.* (2009) suggest that poor investment and business climate countries is not conducive to the investment of remittances in most CIS countries. This reduces the potential contribution of remittances to the national economy investments, which would otherwise be very noticeable. In the CIS countries, most remittance recipients do not have a long-term strategy for their financial situation improvement by developing their own businesses – they try rather to overcome the existing social challenges and to improve living standards. A large part of the short- and long-term migrants seek primarily financial stabilization for their families, and only well-established permanent migrants have considerable financial resources that can be invested in their country (Roberts and Banaian, 2004). Given conditions in CIS countries, consumed remittances have an indirect positive impact on investments – they help to stabilize macro-economic development of the state, improving a number of indicators, important for foreign investors. Additionally, remittances have a positive impact on the accumulation of private capital (Orozco, 2012).

The financial development of many CIS countries is seriously influenced by remittances: it is one of the most stable sources of revenues, coming from outside, which helps to finance imports and service foreign debt (Canagarajah and Kholmatov, 2010). Also, remittances are a less volatile source of external income and these have a strong impact on the reduction of the risk of financial crisis in the country (Shelburne and Palacin, 2007). On the micro-level, the inflow of financial resources from outside the country helps people to overcome the lack of cheap credit, meaning loans can be made within their family or community (EBRD, 2006). In less-developed countries of the CIS, first of all in Central Asia, remittances promote financial literacy among the local population and positively influence the spread of the banking system in the country.

The investment potential of remittances in Belarus is not very high, but it has grown over last two years (Table 5). In 2012 remittances comprised 2.6% of final household consumption expenditure and 4.6% of gross capital formation.

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[24] In a referendum held 24 November 1996, citizens decided that the mineral, water and forest resources of the Republic of Belarus would be under exclusive domain and control of the State. Agricultural land is also publicly owned (see UNECE (2008)). Thus, over 90 per cent of land in the country is not in the market. The majority of legal entities hold the right to permanent, perpetual use of land.

There is no evidence that spending resources coming to Belarus in form of remittances is different from the common CIS pattern – these resources are likely to be directed at everyday consumption rather than being invested. In 2012 personal funds amount only to 6.8% (1260.4 mln USD) in the total structure of investments in Belarus (5.9% in 2011). We can assume that remittances make up an even lower share of this indicator, whereas their volume comprises over 75% of personal funds invested in 2012.

Table 5. Household final consumption expenditure and gross capital formation compared to remittances volume, 2005-2012

Indicator	2005	2006	2007	2008	2009	2010	2011	2012
Household final consumption expenditure (mln. current USD)	15705.6	19026.3	23457.8	31571.0	27303.0	30436.7	33881.7	35886.4
Gross capital formation (mln. current USD)	8597.9	11895.9	15435.4	22872.4	18365.5	22229.6	22761.5	20782.7
Remittances inflow (mln. current USD)	254.6	339.8	354.2	679.8	588.8	589.2	845.5	948.5
Remittances as a share of household final consumption expenditure, %	1.6%	1.8%	1.5%	2.2%	2.2%	1.9%	2.5%	2.6%
Remittances as a share of gross capital formation, %	3.0%	2.9%	2.3%	3.0%	3.2%	2.7%	3.7%	4.6%

At the same time as one can see from Figure 11 remittances again became comparable to the FDI in 2012,[25] as it was before 2007 (Figure 12). It is also worth noting that remittances surpass the increase in net external borrowing in the banking sector planned by the government for 2013 (900 mln. USD).

Despite substantial reforms one of the key reasons for the low rate of investments from remittances seems to be the comparatively unfavorable business climate in Belarus. Research shows that the need to find financial resources for business-related issues is declared by 21.4% of respondents (Shakhotska, 2003) and that share is decreasing: in 2010 only 16% of potential labour migrants saw migration as a source of investment in their own business in future (Artiuchin and Pushkevich, 2011). So remittances have limited power to act as an investment source for entrepreneurial activity.

Figure 11. FDI and remittances inflow in 2004-2012, mln current USD
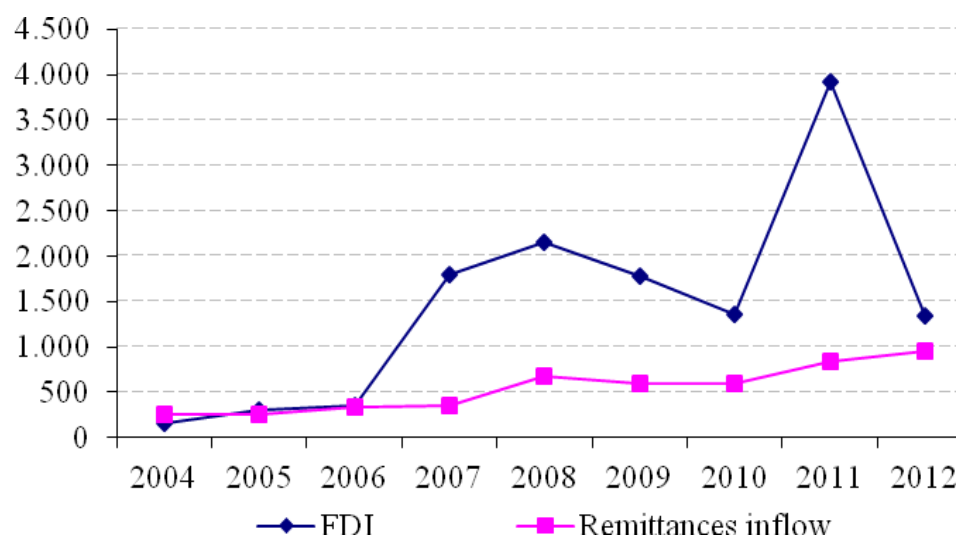
[25] The 2011 peak is explained by the 2.5 bln USD deal with "Beltransgas" shares bought by Russian "Gazprom".

At the same time remittances may enlarge households' savings and they may indirectly serve as a source of investment[26]. The growing gap between households' savings in foreign and national currency (Appendix N Figure N1)[27] supports this assumption. The underlying cause for this widening gap can only partially be explained by national currency devaluation in 2011, when foreign accounts inflated as measured in the national currency. Thus, the increase of deposits in foreign currencies totaled 2065 million USD in 2012 (Figure N2).

At least partially we can address significant growth of households' savings in foreign currency to NBRB policy. Further promoting saving accounts in foreign currency and cross-national banking would contribute to a substantial reduction in the level of transaction costs in sending remittances[28].

Our conclusion that remittances are invested only to a limited extent is in line with their weak influence on GDP. Thus, there is a need for effective policies to be implemented to channel remittances for investment purposes to support economic growth. However, the decreasing return on investment in Belarus (Lemeshevki, 2010) may reflect systemic imbalances in the capital market preventing the effective use of investment resources.

e. Remittances and employment

Almost all the countries of the CIS region have been facing a problem of high unemployment: the broad migration of excessive labour resources to richer countries has partially helped to alleviate this problem (Makaryan, 2011). The principal positive effect of large-scale migration on the employment situation in the region consists in the fact that the leaving workers decrease the pressure on the labour market. Average wages shoot up and migrants pass their jobs on to less skilled individuals (Canagarajah and Kholmatov, 2010; Orozco, 2012). Given persistent unemployment, the loss of labour resources has rather low opportunity cost for the country (Shelburne and Palacin, 2007).

Although most remittances sent within the CIS are consumed and not invested, there is a direct positive impact of remittances on job creation in the region. Local consumption, driven by remittances, induces the growth of retail trade, construction and services. For example, in the case of the rural areas of Western Ukraine, remittances led to the quick development of local businesses and services (Kupets, 2012).

At the same time, research (Thieme, 2012) shows that large-scale labour migration may seriously challenge the employment situation in many CIS countries, causing massive brain drain and for a chronic lack of skilled and unskilled labour. Then, in some countries, such as Moldova and Armenia, there is a direct relation between the growth of the volume of remittances and labour effort, which is caused by moral hazard (Hristev *et al.*, 2009). Those regularly receiving remittances have less incentive to work for relatively small amount of money. Moral hazard seriously aggravates the lack of labour resources in the countries, where there is a substantial difference between the average wage and the size of remittances.

Unlike the other transition countries, Belarus has, since 2005, never reported its official unemployment rate higher than 1.5%. At the end of 2012 the figure was only 0.5%. In reality, this rate

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[26] This does not gurantee the effective use of credits as the banking sector in Belarus is state dominated and a good deal of capital is redistributed via financing of state programs and privileged access to capital for state owned companies.

[27] To some extent this growing gap can indicate the underestimates in remittance inflows as well.

[28] Globally, sending remittances costs an average of 8.96% of the amount sent (see http://remittanceprices. worldbank.org). In some extreme cases, transaction costs on remittances have been estimated at 45% of the amounts remitted (direct fees for wire-transfers or money orders plus cost of currency exchange). According to the World Bank total average cost of transfers of money to Belarus from Russia in the third quarter of 2012 was 2.23 percent having grown from 2.19 percent in the first quarter. The cost is not high compared to the average world costs but it is one of the highest in CIS: higher costs are to be found in money transfers to Georgia (2.40%) and Kazakhstan (2.65%)).

has been higher, taking into consideration the hidden characteristics of Belarusian unemployment. The unemployment rate was 6.1% according to the last Census and 5.3% in 2012 according to the LFS (see Appendix C).

After the new wave of labour migration of 2011-2012, the Belarusian economy faced a serious challenge in terms of the outflow of labour resources and a strong deficit of skilled workers. The most affected industries were construction, transport and health care. The growing gap between the average wages in Belarus and Russia has accelerated the outflow of labour resources from the country. At present, the deficit of labour resources in Belarus is starting to be a serious threat for economic growth.

At first glance the socio-economic influence of labour migration on employment can be evaluated as being relatively positive. The possibility of working abroad begins to deal with the problem of excess employment in Belarus, especially in state owned companies. Thus, employers may have a chance to concentrate their minds on the increasing effectiveness of production which will increase labour productivity, wages and which will lead to higher employment levels in the future. At the same time, the government facilitates measures (lowering wage administration, encouraging flexible systems for labour remuneration, etc.) directed at helping companies keep their best employees.

In the case of proper conditions, as we can understand from the labour supply model of immigration (Appendix O), remittances can shift income, and thus labour demand, from Russia as a main destination country to Belarus as a source country. When labour migrants in Russia remit a substantial portion of their higher incomes to home, then total demand for labour in Belarus might actually increase even though people leave the country. The demand curve for labour (see Figure O2) might, then, on balance shift upward rather than downward.

In Belarus the second scenario is more credible, as, at least partially due to remittances, labour demand remains nearly unchanged despite the unfavorable situation in the economy. But it is hard to say to what extent the wages might rise (see Figure L1) without wages increasing in the public sector with a certain wage target. To some extent government interventions were a reaction to growing labour migration and a deficit of skilled specialists, especially in construction.

At the same time, the pressure of wages on production costs can significantly undermine profits as an investment source. As the ratio between productivity growth rate and real wage growth rate depicts (Figure 12), this is a real challenge for policy to attain a balance between productivity growth and wages growth. Otherwise, it is hard to expect that employment growth rate will be positive over the mid term.

Figure 12. Employment growth and the ratio between productivity and real wage growth in 2010-2012, cumulative total
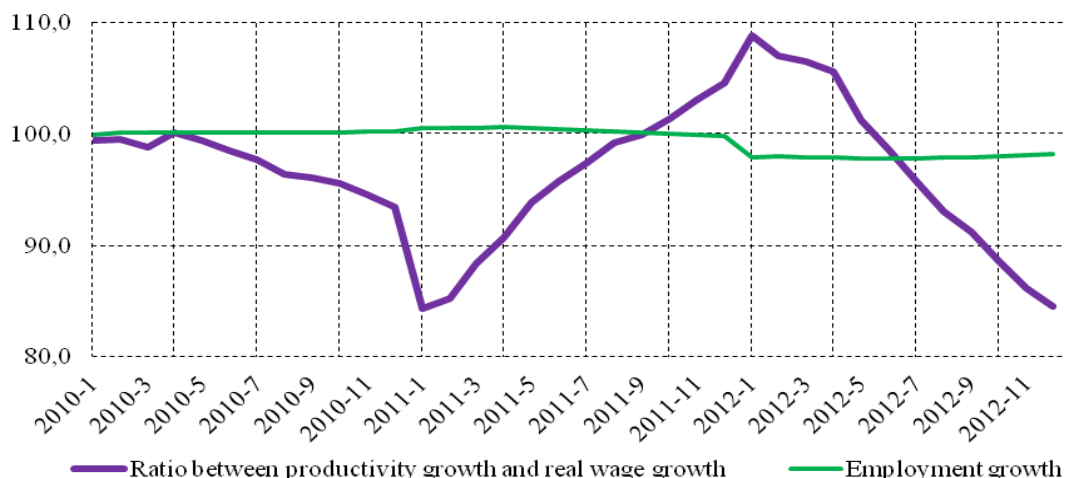
Source: author's elaboration and calculations based on Belstat monthly data.

The lack of investment resources can result in the inability to restructure or modernize capacities to react, in a timely fashion, to growing demand fueled by a remittances-led increase in disposable income. Thus, even if the fraction of income remitted back to Belarus is high, it is not assured that additional demand will be successfully met by domestic production, especially taking into account a relatively significant marginal propensity to import on the part of remittance receiving households.

This is in line with VAR results indicating that remittances cannot be considered as a driver of economic growth in Belarus. Lower productivity may be explained by a decrease in those employed in more productive ages (Figure 13). For instance, the number of 40-49 years old employees has decreased since the end of 2010 by 82,000 (8.2%). At the same time the tendency of personnel to age is accelerating: the 55+ category has been the only category to grow since then. By the end of 2012 the share of working pensioners (retirement age in Belarus is 55 for women and 60 for men) had exceeded 10% (Figure 14).

Figure 13. Change in number of employed by age group in 2012 to 2010, end of year
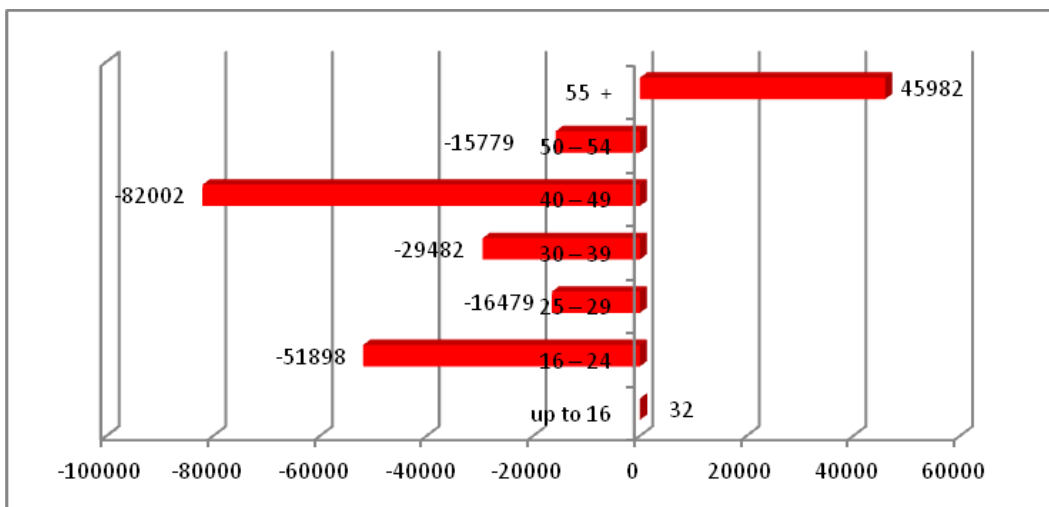
Source: author's elaboration based on "Size, structure and occupational training of personnel" bulletin (Belstat).

Figure 14. Employees' average age and shares of aged employees in 2000-2012, end of year
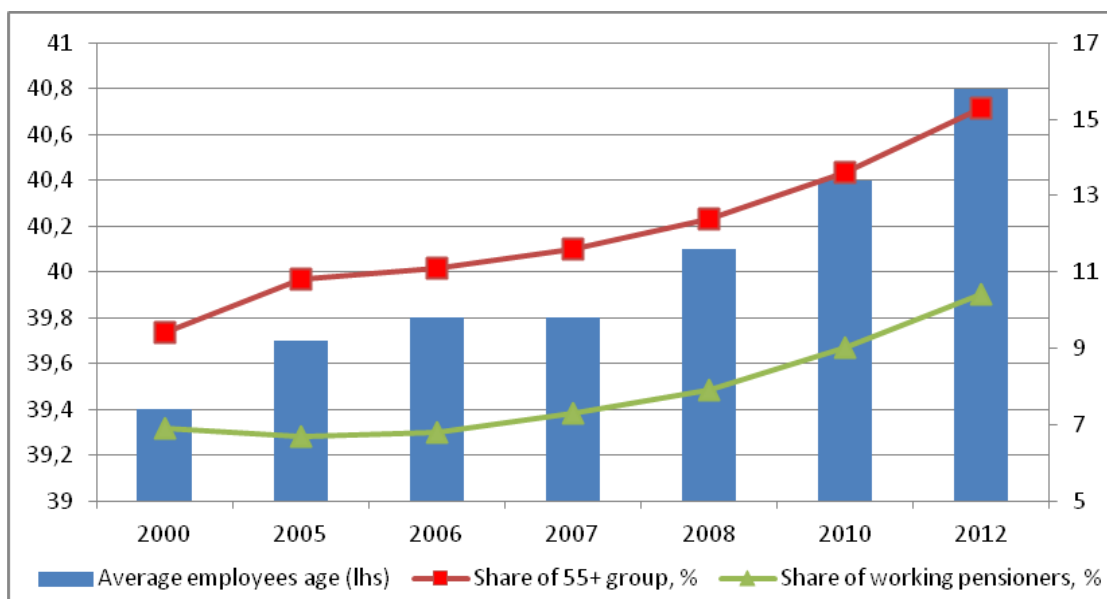
Source: author's elaboration based on "Size, structure and occupational training of personnel" bulletin (Belstat).

Existing wage regulation is one of the reasons resulting in the depletion of skilled personnel and high employee turnover. In July 2011, as a result of wage-setting liberalization the single pay grading system ceased to be mandatory and was merely recommended. However, the single pay grading system is in force in the public sector where near 20% of all those employed in the economy are localized. Moreover, the pay system has recently become even more compressed due to imposition of adjusting coefficients to support workers in the lowest grades. This leads to voluntary termination of employment contracts by most valuable workers who may join the ranks of labour migrants or become self-employed. High employee turnover (the rate of labour turnover in Belarus has reached 27.3 per cent in 2012 being near or above 25 per cent over the last decade) has a negative impact on productivity, especially on state owned enterprises.

According to World development report team's estimates based on the 2010 Life in Transitions Survey, Belarus is among countries in the region with the highest preferences for self-employment. If, on average, about one-quarter of adults from 35 countries in Eastern Europe and Central Asia prefer self-employment, then, in Belarus, the share is surprisingly higher – 43% (World Bank, 2012). This indicates not so much the inability to find salaried employment as a readiness to leave current jobs because of insufficient wage conditions. To some extent the figure may mirror a potential for labour migration as well.

High labour taxes in Belarus (the highest among CES countries) may also reduce labor demand and intensify the exit of workers from the labor market. This in turn limits economic growth in the face of reducing labour supply due to demographic reasons.

f. Remittances and human capital formation

The impact of remittances on human capital formation in the CIS region is in general rather favorable. Poor and middle income remittance-receiving families have more financial possibilities for providing quality education and medical care for their children. At the most fundamental level, remittances seriously improve the nutrition of children, especially in the poorest countries of the region: for example, in Tajikistan, see Azarri and Zezza, 2011. However, as some authors note, though remittance-receiving families are able to invest more in education, they tend to over-spend on the consumption of imported goods (Hristev et al., 2009).

In general, remittances have positive impact on the financial literacy of the recipients, the level of education and medical service provided for children as well as the transfer of useful skills and experience to children (Orozco, 2012; Shelburne and Palacin, 2007). However, some studies of the relationship between remittances and education of children in the CIS region give different results. In the case of Tajikistan, one study showed a clear positive impact of remittances on school attendance, while another study claimed that there is positive relation between remittances and school absenteeism (Brown et al., 2008, Nakamuro, 2010). This contradiction proves that it is quite difficult to estimate the real impact of remittances on various social issues.

In the case of Belarus there is some evidence that remittance receivers may direct a part of these resources to pay for education. Health care and recreation issues as important forms of human capital development are also important for a significant share of respondents (Table 2). Education-related issues as goals of labour migration were indicated by 52.1% of respondents (Shakhotska, 2003). This tendency is confirmed by the relatively high share of young people receiving a university degree in Belarus and the limited amount of full-tuitions: the share of students in public higher educational institutions who pay fees is substantial. Fee-paying students are heavily concentrated in fields of study such as management, economics and the humanities.

In a recent study the wish to provide good education for children was declared by 31% of potential labour migrants from Belarus (Artiuchin and Pushkevich, 2011). This may indicate the worsening quality of education, especially in case of correspondence students, and its poor matching to the labour

market. Indeed, the quality of the educational system in Belarus is generally agreed to be questionable (see Chubrik and Kazlou, 2013).

The growing share of employees with university degrees, accompanied by decreasing productivity, may imply over supply of graduates with higher education. For instance, since the end of 2010, the share of employees with university degrees has increased from 25.4% to 27.4% (Figure 15). It appears that higher education does not correspond to skills level: according to a recent survey, a typical potential labour migrant from Belarus is a man aged 30-49 with secondary or vocational education (Artiuchin and Pushkevich, 2011).

Figure 15. Structure of employed by formal education level, end of year
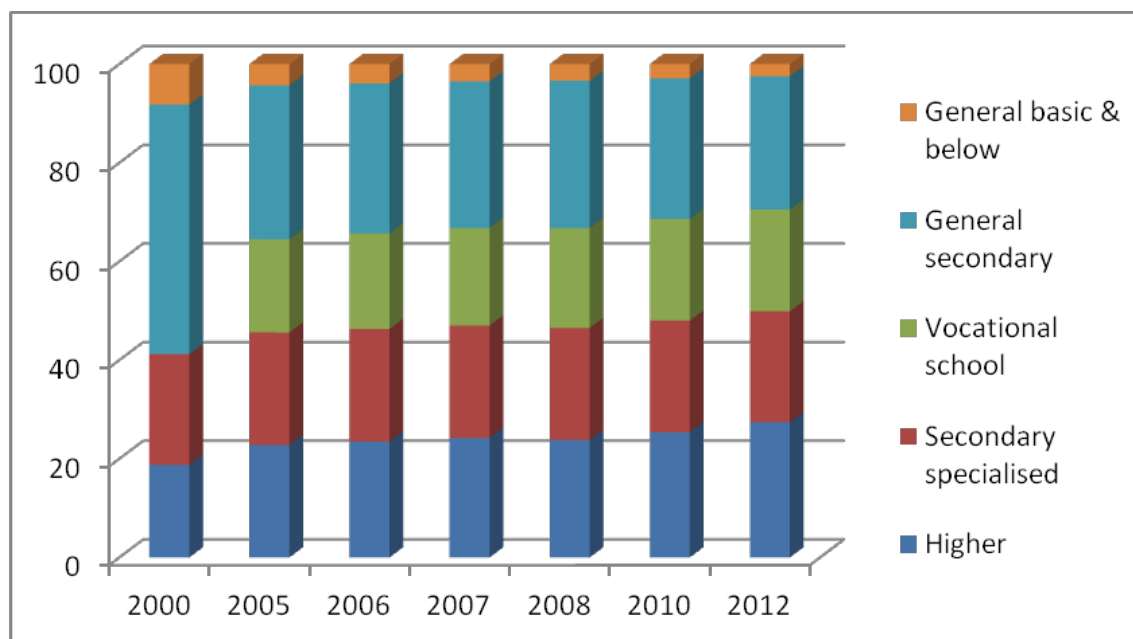
Source: author's elaboration based on "Size, structure and occupational training of personnel" bulletin (Belstat).

The flip side of remittances sending by temporary migrants would be social capital destruction, which in turn can negatively affect human capital formation. But, to our knowledge, there are no studies in Belarus indicating the aggravation of social problems, loss of social capital or deterioration in family ties as a consequence of labour migration. Instead, we can assume the presence of some kind of intentional specialization when a man working abroad raises family income that allows couple to provide for another child[29].

Of course, an analysis of micro-data based on migrants' surveys is needed to allow us to draw the cause and effect conclusions concerning the influence of remittances on human capital development. Without such surveys we can only suppose that the influence of remittances on human capital in Belarus is rather positive. The general conclusion in the literature seems to be true for Belarus as well: remittances foster human capital formation, though, without substantial economic and social progress in these countries, children of temporary immigrants will have to migrate as their parents did.

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[29] Aggregate level data provide some support for the hypothesis on the positive influence of remittances on fertility. Thus, an analysis for the 1996-2011 period shows that, while controlling for GDP, an increase in remittances inflow by 10% leads to total fertility rate increase of 2%. An increase in remittances has a negative impact at a divorce rate; however this relationship is not statistically significant.

g. Remittances, poverty and income inequality

In general, remittances directly contribute to the reduction of poverty, providing financial resources for everyday consumption, education and medical service (Canagarajah and Kholmatov, 2010). Temporary labour migration of the head of the family is the quickest way to improve financial well-being among those with a low-income in the CIS region. Having a migrant abroad, a poor-income family receives not only a sTable source of financial help, but also a type of social insurance, protecting them during the economic crisis in their country (Shelburne and Palacin, 2007). Household budget surveys indicate that remittances constitute over 20 percent of the expenditure of households in the poorest quintile (Mansoor and Quillin2007).

Remittances have contradictory effect on income inequality in the CIS countries. On the one hand, they give a chance to the poor to improve their financial situation by working in a more developed country. On the other hand, those families that are not able to send its member abroad find themselves in a negative economic situation. In addition, research shows that richer families tend to have a bigger chance to receive remittances, due to the high costs of migration, better qualifications and higher mobility (Uzagalieva and Menezes, 2009). All types of household benefit from remittances, but migrants from richer families have access to better jobs abroad (Atamanov *et al*., 2009). An example of the negative impact of remittances on income inequality is Moldova, where richer families may send their member to the EU and the migrants from poor-income families are able to work only in Russia (Atamanov *et al*,, 2009).

In Belarus it is not possible to propose a proper analysis of remittances influence on poverty and income inequality as there are no individual data on remittances receiving households. The analysis below is based on aggregate data.

It is worth noting that the level of poverty in Belarus is rather low compared to the majority of CIS countries (Figure 16). However, facts suggest that growing numbers of Belarusian workers are adopting migration-based coping strategies in response to the uncertainties and insecurities facing them, especially after the 2011 crisis.

Figure 16. Poverty level in CIS countries
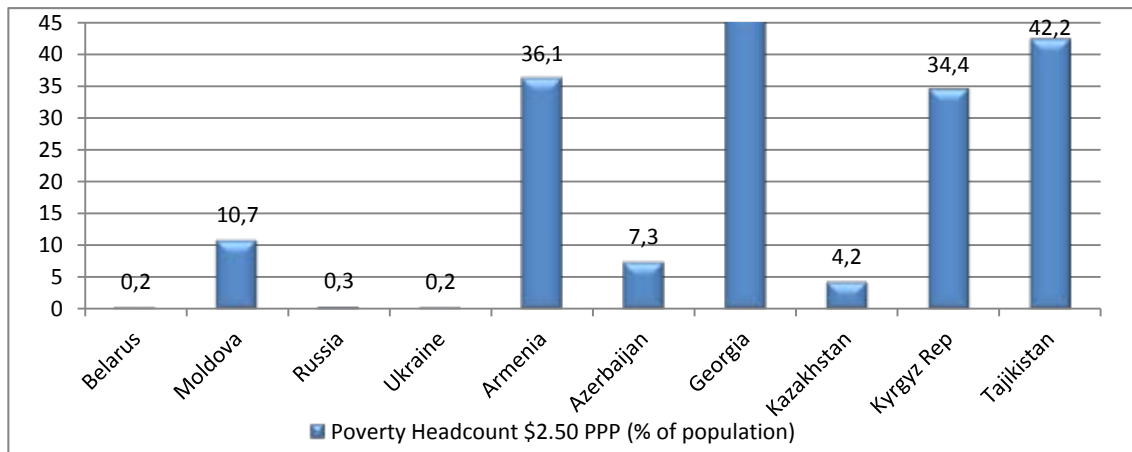
Source: World Bank Poverty and Equity Database. Data from following years: Belarus, 2011; Armenia, Georgia, Moldova and Ukraine, 2010; Kazakhstan, Russia and Tajikistan, 2009.

In the case of Belarus remittances may help to reduce absolute poverty. The national absolute poverty level (Table 6) is defined as subsistence level budget[30], which average monthly *per capita* volume equaled 98.6 USD in 2012.

Table 6. Population with per capita disposable resources below subsistence level budget by sex-age groups

2000	2005	2008	2009	2010	2011	2012
41.9	12.7	6.1	5.4	5.2	7.3	6.3

Source: HBS

Poverty is higher in rural areas: according to HBS the share of rural population with per capita disposable resources below subsistence level budget equaled 11.5% in 2011 and 9.4% in 2012 (5.8% and 5.2% respectively for urban areas). Yet a significant number of Belarusian labour migrants areas are urban: as a rule, men maintain their families by working abroad. According to estimates based on the 2009 Census micro-data (Chubrik and Kazlou, 2013), rural areas' share in number labour migrants is lower than that in the total work force. Rural migrants comprise only 18.3% of working in Russia and 10.7% of labour migrants working in other countries. It is in line with the official statistics of international emigrants: the average share of rural migrants was 17% in 2005-2010. Remittance-receiving urban households may be out of poverty from the very beginning: for 15% of respondents labour migration was a strategy to fight poverty and for 22% it was a way to help relatives (see Table 2).

Wage differences between big Belarusian cities and Russia are less than those between small Belarusian towns or rural settlements and Russia, so labour migrants from bigger cities more often choose non-Russian destinations to get a higher salary. Chubrik and Kazlou (2013) are correct then when they argue that external labour migration in Belarus is more an urban than a rural phenomenon.

We can conclude, then, that in Belarus remittances' impact on reducing poverty is limited to reducing absolute poverty. Consequently, we can assume that in Belarus remittances lead to an increase in inequality as better off urban migrants get richer faster than poorer rural people[31].

The latter is not a significant problem as measured on the basis of the Gini coefficient Belarus is characterized by lower inequality compared to peer countries (IMF, 2011). The Gini coefficient amounted 0.285 in 2012, remaining almost at the same level as in 2011 (0.284). The ratio of disposable resources of 20% of the group with highest resources to 20% of the group with lowest resources was equal to 4 in 2011 and remained unchanged in 2012: it was 3.9 in 2010. Relatively low inequality in Belarus was mainly achieved through strong GDP growth in the 2000s and high-scale redistribution policies.

As we noted in Appendix B, we can try using the item "Material aid from relatives and friends" provided by HBS, to make some estimates of remittances inflow to Belarus. The aggregate HBS data are depicted in Table 7.

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[30] A subsistence level budget is the value of the subsistence level plus compulsory payments and contributions. Subsistence level is defined as a minimum set of material goods and services that are essential for ensuring the life activities and health of a person. Average *per capita* subsistence level budget for main socio-demographic groups is approved on a quarterly basis by the Government of the Republic of Belarus at prices of the last month of the quarter.

[31] There are also some groups of households that can hardly improve their financial situation by sending a migrant abroad. This is true for the most vulnerable groups to poverty – unemployed and economically inactive people (single mothers, members of the problem families etc.). As they are unable to get a job in Belarus it is hard for them to be successful abroad, so they are naturally excluded from labour migration. The same is true for pensioners, who do not get any support from their children. So there are certain parts of the low-income population of Belarus who are isolated from the receipt of remittances.

**Table 7. The volume and share of "Material aid from relatives and friends"
in total households' incomes**

Year	Monthly volume per households, USD	Share in total incomes, %	Share in money incomes, %	Share of households reported about this type of income, %	Monthly volume per households reported about this type of income, USD
2010	28.5	4.9	5.2	58.6	48.7
2011	21.4	4.6	4.8	54.6	39.1
2012	27.8	4.7	5.0	53.6	88.2

Source: HBS

As one can see, volume of material aid in all households in 2012 stood at close to 28 USD per month. It is 3.2 times higher in households reported about this type of income (88 USD). In 2012 the share of such households was 53.6%.

Material aid from relatives and friends, received by households, amounts to 1,290 million USD in 2012. But it is pointless to offer conclusions based on that figure or even to compare it with remittances volume reported by NBRB, as it was distributed between almost two million households (according to Belstat in 2010 the total number of households in Belarus was 3717,000). There are no approaches to sort out households with labour migrants as Belstat does not provide information about the place of the respondent's work: The BHS sample is not designed for the working age population and received answers are not representative. The share and number of aid receiving households, against expectations, decreased in 2011 crisis year and then, again, in 2012. So we cannot use the information about wage incomes of individual households' members to estimate the volume or remittances.

Thereby, at present, in Belarus, there are no appropriate data to assess remittances' impact on households' income and changes in income disparities accurately. Thus, efforts by the government and international organizations in Belarus are needed to launch specialized surveys and to demand studies on the whole spectrum of migration issues. The improvement in existing surveys (HBS and LFS) is highly advisable and timely, especially taking into account the common labour market development within CES. For instance, in Poland the HBS of 2008 was the first to identify all sources of foreign income (work, business, social benefits, transfers from other households, etc.) [32].

h. Remittances and public moral hazard

Large remittance inflows, in many cases create serious threat of moral hazard for the governments of the CIS countries, as well as for the recipients of these remittances. A large volume of remittances ease the pressure on the government to implement necessary economic and social reforms (Canagarajah and Kholmatov, 2010): governments in the CIS region prefer to solve deep internal problems not by reforms, but by pushing the excess labour force into temporary migration. The revenues of the governments of the largest remittance-receiving countries (Tajikistan, Kirgizstan, and Moldova) directly depend on the volume of remittances (Pinger, 2009). In the case of these countries, remittances make a serious contribution to the growth of governmental tax revenues (primarily from VAT), as they boost imports and develop the non-tradable sector of economy (Kupets, 2012). The high rate of labour migration from these countries reduces political and social tensions and saves governments from social and political unrest. The governments of many CIS countries do not have any internal motivation to implement the

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[32] In Poland, estimates suggest that remittances reduce poverty by nearly 2 percentage points – from 19% (a hypothetical poverty rate assuming no remittances) to 17.1% (Barbone *et al.*, 2012).

necessary reforms. They know that the poor and unemployed, who are willing to improve the financial situation of their families, will emigrate to more developed countries.

Additionally, large influxes of financial resources to the countries with undeveloped welfare systems create alternative welfare systems, based totally on remittances. The recipients of remittances are able to pay bribes for public services in education and health care system. The government cannot provide adequate quality of free public services and the system of informal pay develops as a result (Canagarajah and Kholmatov, 2010).

In Belarus there are some distinct signs of the moral hazard phenomenon induced by remittances inflow, at least in the case of labour market policy. An almost costless stream of excess labour force for temporary migration to Russia has resulted in the failure to reform the unemployment security system and the education system, which is still badly matching labour market needs.

Instead, growing labour force participation does not suggest that remittances create fewer incentives to be employed in the national economy (Table 8).

Table 8. Economically active population and labour force participation rate in Belarus, average per year

Year	Economically active population total, th.	Of which, th.		Labour force participation rate (ratio of economically active population to working-age population), %
		employed	unemployed registered with agencies for labour, employment and social protection	
2000	4 539.6	4 443.6	96.0	78.0
2005	4 490.6	4 414.1	76.5	75.6
2008	4638.1	4594.4	43.7	76.7
2009	4 686.1	4 643.9	42.2	79.9
2010	4 705.1	4 665.9	39.2	80.8
2011	4 686.0	4 654.5	31.5	81.1
2012	4 816.7	4 577.1	239.6*	85.4

Source: author's elaboration based on Balance of labour resources (Belstat).

* The sum of registered unemployed (28,500) derived from LFS estimate of number of people not having a job and actively looking for work (211,100) – see Appendix C.

High activity rates in Belarus are confirmed both by HBS and Census data: around 70% of the working-age population (15–64) are working or searching for a job and ready to start it within two weeks. The relatively low rate of inactivity can be explained partially by the vulnerability of the inactive population to poverty. Unemployment benefit is about 15% of the subsistence level budget; other allowances are comparable to income at the poverty level[33].

Another explanation is that despite rather high activity rates, the problem of dependants is periodically raised by the government. The volume of dependants decreases as one can see from the Appendix C. The most problematic from the government's point of view is the item "Others". This is calculated in the Balance of labour resources as the difference between labour resources and the employed population and all the items listed in the Table C1. This item has been decreasing since 2005 – from 13.6 % to 7.6% of total labour resources in 2011. In 2012 it stood at 5.2% of total labour resources while excluding the number of unemployed according to LFS. Interestingly, LFS indicates that the labour market policy has been implemented so far in accord with the inaccurate calculations of economically active population – the latter "increased" by 2.8% in 2012 compared to 2011 (from 4686,000 to 4816,000).

High activity rates and a full employment policy, pursued by the government, does not ensure the effective use of resources: see unsteady productivity dynamics on Figure 12. One rather rough

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[33] The significant exception is child-care allowance until the age of three years, which has been increased from 2013 to 35% of the average wage (from about 20% in 2012) as a reaction to the existing demographic situation.

comparison makes the quality of economic institutions in Belarus, notably labour market institutions, rather questionable: 1) in 2012 1.5% GDP growth was attained while having a "reserve" of 2.8% of economically active population (over 130,000); 2) remittances, amounting in 2012 to 1.5% of GDP, were generated abroad by 1.2% of economically active population (55,400 – see Appendix C).

Remittances together with Russian economic support (new credits, banking sector investments and discounts to energy resources pricing) and significant policy efforts on the part of government have helped in smoothing down existing economic imbalances in the Belarusian economy: policy efforts include FDI and SME development promotion, cutting costs to reduce inflation, attempts to develop national qualification system, etc..

Russian economic support may, to some extent, be treated as a form of investment in human capital since a lot of Belarusians enter the Russian labour market. Together with significant public investment in education, health care and public services in Belarus, Russian support creates more favourable conditions for human capital development. Political and economic patronage of the human-capital "oasis" in Belarus is totally in line with a wise if rather aggressive migration policy declared in the Concept of Migration Policy, approved by the Russian president in 2012.

There is a need to take a strategic look at migration options in Russia too. At present migration issues are on the policy agenda only in a latent form and even the main direct and indirect causes and consequences of migration are not aware of. For instance, negative demographic tendencies and coming labour resources decrease were not taken into account until recent tensions with massive highly-skilled worker outflows to Russia. Modernizing Russia faces the same demographic trend and much needed external inflow of labour. It is not painless for Belarus because its economic growth demands a skilled labour force: e.g. in construction, transport, services, etc..

We find ourselves in agreement with Barbone, Bonch-Osmolovskiy and Luecke (2013), who suggest that the so called Migration Lens should be part of macroeconomic and sectoral policy formulation in Eastern Partnership Countries. They advise an institutionalized "lens", i.e. framing policies, with numerous consequences for migration should be implemented/facilitated by an agency empowered with sufficient clout among government organizations. Experience shows that sectoral policy discussions very often are dominated by domestic concerns and lobbying effort by different stakeholders, who may not be particularly interested in migration and its socio-economic effects.

This is a good moment for Belarus to follow this recommendation. At the same time, though, it will prove a challenge to institutionalize the Migration Lens, making it an integral part of macro- and sectoral policies in Belarus: at present the main migration issues stand outside of the competence of the Ministry of Labour and Social Protection. This ministry is responsible for labour market regulation while the Ministry of Internal Affairs executes the role of the main state agency in the domain of migration policy. It does not have the incentive to become a powerful advocate; an advocate that could help mediate among sectoral interests while maintaining a focus on migration strategy and on the implications of individual policy decisions on migration outcomes.

Strategically, Migration Lens developing should help to overcome moral hazard generated by remittances and Russian support and proceed to a wiser and more effective policy. At present, notwithstanding the government's strong focus on the high activity rates aimed to ensure full employment, overall, labour market institutions in Belarus appear not to be pro growth. We can go further, in fact, and state that inflexible labour market arrangements are, at least partially, responsible for the decreasing returns on capital in Belarus. This restricts the potential effects of remittances as a source of investment and further clarifies VAR results indicating the negative influence of any increase in remittances inflow on GDP growth in Belarus.

We can describe the intuitive line of consequent causes and effects which embrace the main channels of influences transmitting from labour to capital market as follows: Policy of pay equity and administrative wage targeting, not exclusively in the public sector (relatively low return on human

capital) → Imbalances in functional distribution of incomes (the share of labour is growing) → Lower incentives for investors (especially given that cheap Russian energy rent is uncertain) → Lower demand for strong financial institutions and capital drain (to CES e.g.) → Weak capital market and financial institutions with state domination → Privileged access to capital for SOEs, high cost of capital for private firms → Lower rates of (middle run) economic growth (due to physical capital deficit) → Lower productivity → Lower growth rates of wages → Excess employment results in further wage compression and lowering inequalities (even more lower returns on human capital) → Higher incentives to migrate (positive selection, including entrepreneurs with capital) → Lower rates of long-run economic growth (due to a physical and human capital deficit).

Therefore, the main challenge for Belarus in terms of an economic policy capable of achieving sustainable economic growth would be to adopt comprehensive structural reforms. These reforms would be able to improve resource allocation providing tight coordination between labour and capital markets changes.

6. Conclusions and policy recommendations

In general, remittances have a positive effect on the economic development of the CIS region, though, it also causes several negative things. Large-scale labour migration generating remittances helps alleviate the problem of unemployment. Remittances received from short- or long-term migrants have a direct positive impact on the growth of foreign exchange, consumption and economic development. Additionally, remittances help eliminate poverty and develop human capital. For the smallest and poorest economies – Tajikistan, Kirgizstan and Moldova – remittances have become a key source of national income. For other CIS countries, that have a lower share of remittances in their GDP, they are also a way to support the national economy. Families of labour migrants prefer to spend the greater part of remittances on everyday consumption and they do not have a long-term investment strategy. of the vast majority of remittances to CIS countries come from the Russian Federation, which makes CIS labour migration very sensitive towards the Russian economy.

Besides the positive impact of remittances on economic development in CIS countries, remittances also bring with them a number of negative consequences. First, there is the problem of the loss of labour resources, something that hampers the development of the national economy. Labour migration may help to overcome deep economic and social crisis, but without comprehensive economic reforms and significant improvement of social conditions in the country, temporary migrants may not return to their home country. The loss of its most active people might, of course, be very dangerous for long-term economic growth. A large share of remittances in the national economy results too in macro-economic problems, such as the Dutch disease and import growth. One of the most dangerous challenges, created by remittances, is the high risk of moral hazard for CIS governments. A growing number of labour migrants and their remittances decrease the pressure to implement economic reforms in their countries, something that seriously challenges the long-term development of the whole CIS region.

In case of Belarus, in comparison with the CIS as a whole, and especially in comparison with countries such as Moldova, Tajikistan or Armenia, the impact of remittances on economic development is not very high. In 2012 remittances stood at 1.5% of GDP, though the real contribution by our estimates is significantly higher – 2.8-3.6%. After the serious financial crisis of 2011 the number of labour migrants from Belarus increased rapidly, which resulted in the growing impact of remittances on the national economy. Remittances' positive impact on economic development balanced the current account, improving the situation in relation to unemployment and household consumption.

VAR modeling allowed to confirm one of our main hypotheses – inflow of remittances is strongly pro-cyclical with respect to Russian GDP. Remittances rise with growing income of migrants and of temporary workers who increase in number when Russian GDP grows. Remittances appear to be slightly pro-cyclical with respect to Belarusian GDP. Macroeconomic shocks do not appear to have a persistent effect on remittances, which tend to eventually stabilize at their original levels. This may

indicate that remittances *per se* are more a concomitant result of economic system, reflecting some fundamental characteristics of labour market institutions, rather than a by-product of temporary economic crises.

At the same time VAR results indicate that our second hypothesis is not true (or, at least, not entirely true) – remittances are not a driver of economic growth in Belarus. Remittances support GDP growth immediately after flowing into the country, possibly by increasing domestic private consumption. But, after two quarters, GDP responds negatively to their growth. This may be explained by brain drain effects and decreasing productivity due to lower return on remaining labour resources and high personnel turnover.

The negative influence of remittances on GDP is not caused by Dutch disease and inflation: exchange rate appreciation and growth in consumer price are not induced by remittances. Instead, lagged REER devaluation Granger causes growth in remittances inflow: when in crisis time devaluation takes place in Belarus more people go abroad to support their families and more transfers come from abroad.

There is some evidence that the negative impact of remittances on growth in Belarus may be induced by a growing deficit of skilled labour: the brain drain effect. This may create a serious challenge to the long-term economic development of the country. Taking this into account, a conclusion can be drawn that research on migration issues and their impact on the country's economy in Belarus is insufficient. In addition, there is the need to collect data and to develop statistics on migration and remittances which will serve as a basis for appropriate policy measures elaboration.

Based on our study and our existing experience we can consider some modest recommendations for policy improvement in Belarus.

1. There is a need to build the capacity of institutions and human resources to conduct research into the whole spectrum of remittances and labour migration issues in accordance with international standards. The collecting and the use of disaggregated population data for the development of socio-economic policies and programs is inadequate. Given the open borders between Belarus and Russia and the resulting free movement of people it is necessary to conduct regular household and individual surveys on migration issues to help with the employment of Belarusians abroad. Household and individual surveys on migration issues can supplement official sources based on the balance of payment statistics providing important information on: who remits and who receives remittances; how much and through which channels; and how remittances are spent by receiving households.

   Apart from this, it is necessary to collect information on the gross volume of physical persons' remittances directly from the money-order systems, including data from the Belarus post service. The wide exchange and verification of information at the interstate level is needed, especially in CES and CIS.

2. To increase remittances contribution to the economy it is important to keep remittances facilitation (namely low transaction costs, growing financial literacy and widening set of financial instruments for households) on the policy agenda in Belarus. Government should not try to control remittances and their receivers, but rather they should let migrants remit without restraints. The free flow of remittances will allow these transfers to adjust to cyclical fluctuations in the Belarusian economy in a manner that has positive implications for economic stability. The best way for policy makers to encourage the productive investment of remittances is to pursue macroeconomic policies that yield a stable and propitious investment climate. The government should spend on designing specific institutions that make investments more attractive.

   Specific objectives and measures of remittance facilitation policy are presented in Appendix P. We would suggest that all these measures should be taken into account, but especially those facilitating investment. To channel remittances for investment purposes the

government could institutionalise a centralised remittance bureau, whose mandate would be to promote the use of remittances for economic development. For instance, this bureau could offer a tax concession for remitters investing in bond and stock markets and cheaper credits for business purposes. To qualify for these benefits, migrants or their families would have to submit proof of sending/receiving remittances. This mechanism can be a good point to start engaging in the economic development of the diaspora's financial potential, something almost totally ignored so far.

3. Government should design and implement a Migration Lens framework as a part of macroeconomic and sectoral policies. While designing this approach it should recognize that there is a need to implement and facilitate migration-focused policies by an agency empowered with significant influence among government organizations. This agency should be in possession of evidence-based policy instruments, supported by expert knowledge and sufficient data.

The Ministry of Labour and Social Protection together with Ministry of the Economy should, whether or not they are the main mediators of national migration strategy, make significant efforts to improve labor market institutions in Belarus. This means: the comprehensive reforms of wage regulation and qualification system; labour taxes and pension system; unemployment security system; and institutions of socially responsible restructuring . The first step in this list should be the continuation of the wage-setting liberalization started in 2011: the compressed grading pay system still mandatory in the public sector should be abolished together with changes in a set of other regulations necessary to allow increased wage differentiation. This will make remittances friendlier to economic growth.

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Appendix A

Differences in wages, GDP per capita and inequality in CES countries

Table A1. Wage levels in CES-countries in 2010 and 2011

Country	PPP units of national currency for one US dollar		Exchange rate, units of national currency for one US dollar		PPP Coefficient		Nominal accrued wages payable of the workers in current US dollars		Nominal accrued wages payable of the workers in PPP US dollars	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Belarus	1248.26	1946.9	3000	5063	0.416	0.385	415.4*	343.4	998.6	892.0
Russia	20.187	22.812	30.75	29.4	0.656	0.776	681.5	807.3	1038.9	1040.3
Kazakhstan	110.448	121.652	147.42	146.6	0.749	0.83	526.6	613.7	703.1	739.4

* Statistics Department EEC UN.

Table A2. Differences in GDP per capita and Gini coefficient among Belarus and Russia

Year	GDP *per capita* in current USD		Gini coefficient		Ratio of GDP per capita in current USD, Russia to Belarus	Ratio of Gini coefficients, Russia to Belarus	Ratio of GDP p*er capita* based on PPP, Russia to Belarus
	Russia	Belarus	Russia	Belarus			
2005	5 313.1	3 098.2	0.409	0.256	1.71	1.60	1.38
2006	6 912.9	3 805.0	0.415	0.262	1.82	1.58	1.36
2007	9 101.6	4 672.4	0.422	0.274	1.95	1.54	1.35
2008	11 630.6	6 385.6	0.421	0.274	1.82	1.54	1.27
2009	8 567.9	5 179.9	0.421	0.268	1.65	1.57	1.17
2010	10 674.3	5 824.4	0.421	0.265	1.83	1.59	1.13
2011	13 335.0	6 332.1	0.417	0.284	2.106	1.468	1.11
2012	14 246.8	6 739.4	0.420	0.285	2.114	1.474	1.13

Source: World Development Indicators, Belstat, Rosstat.

Appendix B

Other sources of data for remittance volume estimates

i.   Census data

The population census in Belarus in the framework of the 2010 Population Census Round was conducted from October 14 to October 24, 2009. It was the second census in the history of independent Belarus. The census form in 2009 includes 37 questions, the responses to which would allow us to have detailed demographic, national, cultural and socio-economic description of the population.

As compared to 1999 the census programme had additional questions concerning the migration of the population – place of birth and continuity of residence in a settlement. The questionnaire contains a question about the work place of the employed population with 15 years old and over[34]. The number of people with workplaces located in other countries allows scholars to estimate the scope of labour migration and its geography.

ii.   Household Budgetary Survey data

A similar question about workplace location is included in the Household Budget Survey (HBS hereafter), however in this case the names of the countries are not indicated[35]. HBS, which has been surveyed since 1995, is the only source of labour-market related information. However, its questionnaire and samples are designed for households' living standards analysis, not for the analysis of the economic activity of household members.

At the same time HBS provides the information which can be used to estimate indirectly remittance volumes. For this purpose one can use data on transfers from relatives and friends who do not live with other household members: "Material aid from family members and friends".

iii.   Labour Force Survey data

Labour Force Survey was launched only in 2012 and its results have not been published yet. The LFS questionnaire[36] repeats the same question from Census 2009 about the place of work. The questionnaire is designed for representation and analysing the economic activities of labour force. Labour migration can be studied in detail using LFS data, such as educational level, occupational distribution and employment conditions. But again the LFS does not contain questions about labour migrants' incomes, so this survey is not a source of information on remittances in Belarus.

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[34] See http://belstat.gov.by/homep/ru/perepic/2009/main4b.php.

[35] The full questionnaire can be accessed at http://belstat.gov.by/homep/ru/households/3.php. The official name of the survey is Household Living Standards Survey. The survey coverage is about 6,000 households annually according to the methodology complying with international standards. The survey is carried out in all regions of the Republic of Belarus and Minsk City covering 49 cities, towns and urban-type settlements as well as 53 rural Councils. See also http://belstat.gov.by/homep/en /households/main1.php.

[36] See http://belstat.gov.by/homep/ru/households/4-t.pdf. In 2012 and 2013 the quarterly survey coverage was about 7,000 households selected during drawing the sampled population.

Appendix D

Labour migration profile according to Census 2009 data

The description of the Belarusian profile of the labour migration presented below is based on recently published analyses of census 2009 data (see Bobrova, Shakhotska and Shymanovich, 2012; Chubrik and Kazlou, 2013).

Age and Gender. Census data show that in temporary labour migration the number of men moving to other countries to work is more than 10 times the number of women which is especially true for Lithuania, Russia and Latvia: e.g. 90% of Belarusians working in Russia are men. T The USA and Germany do not support this tendency and the numbers in question for those countries are practically equal. Italy employs, meanwhile, mostly women – 76.1%, who work there in services, which explains men's domination for employment in Russia and the Baltic states as they work there mainly in construction and transport sectors.

Three quarters of Belarusian labour migrants are between 24 and 49 years old. The census shows that the average age of migrants varies according to the country of employment and by gender. The average female migrant is 35.2 and the average maile migrant 37.5 years old. However women migrating to Germany are 35.5 on average as that country offers better job opportunities for many women under 30, at least according to Census data. The average age for Belarusian women employed in Italy is 38.8, and in Lithuania 39.2 because the share of female migrants above 40 to these countries is respectively 48.7% and 45.5%. The explanation for this might simply lie in popularity among Belarusian women of such forms of employment as a housemaid, a job which gives a premium to life experience. The men migrating to Germany are on average 38.6: this ranges from 34.8 in Italy to 40.4 in Lithuania.

Education. The difference in education level among labour migrants is significant and varies according to the country of employment and by gender. The level of education of labour migrants differs greatly, depending on gender and the country of destination. The average educational level of female labour migrants is higher than that of their male counterparts. In particular, the general level of education of labour migrants to Russia was lower than the educational level of the average Belarusian work force. Half of those employed in Russia have only vocational, secondary or even lower levels of education. People with tertiary education form just 16.1% of labour migrants to Russia. (The average share of people with tertiary education working at the place of residence in Belarus is 25.3%). Most of the labour migrants with tertiary education move to the Czech Republic (37.7% of all labour migrants to the country), Italy (39.6%), Germany (55.2%), and the USA (71.7%).

Occupation and economic activities. Most Belarusians were employed abroad in the construction sector (42% of all labour migrants). Employment in other sectors was rather low: 13% were employed in the transport and communication sectors, 8.1% in retail, 5.1% in manufacturing industries, 2.6% were employed in the real estate sector. A comparison of those employed in CIS and non-CIS countries reveals that employment in the construction sector is typical only for CIS countries (45.2% of labour migrants in these counties), while in non-CIS countries, only 8.3% of labour migrants are employed in this sector.

Chubrik and Kazlou (2013) conclude that the occupational structure of demand for labour is largely determined by the economic incentives that migration offers: Russia is closer, but wage opportunities there are on average lower than in developed industrial economies. As a result, the share of highly-skilled labour is two-fold higher among labour migrants to non-Russian destinations than among those who work in Russia (Table D1).

But in absolute terms Russia prevails again. At the same time skilled labour is dominant in both directions (about half of labour migrants to non-Russia destinations and 2/3 of labour migrants to Russia). As figures in Table D1 show, unskilled labour is also in higher demand in Russia than in other destinations.

The highest demand in terms of types of occupation for non-Russian destinations is in "drivers and mobile plant operators" (skilled labour) and "administrative and commercial managers" (high-skilled labour), followed by professionals and associate professionals in business administration and related spheres (highly-skilled and skilled labour). About one third of labour migrants working in Russia have occupations in the category "Building and related trades workers, excluding electricians" (unskilled workers of similar occupations are also in high demand there); the next popular type of occupation is "drivers and mobile plant operators" followed by "administrative and commercial managers" (Table D1). The occupational structure of non-Russian labour migrants is much closer to that of the total work force. It means that Russian demand is more focused on specific occupations, while demand for other destinations is more diversified.

Another view concerning foreign demand for labour is based on the distribution of labour migrants between economic sectors (economic activities). Here leading roles are played by construction (in the case of Russia) and transportation (in the case of other destinations) and this is even more evident than in the case of occupations (see Table D2). Trade is a popular sector across all labour migrants regardless of destination, as well as "Other community, social and personal services activities" and various sub-sectors of manufacturing. Education and health care have also attracted labour emigrants to non-Russian destinations – as Census 2009 data show, this sector in countries other than Russia has attracted more labour migrants than Russia even in absolute terms.

Table D1. Labour emigrants by occupation and skills (shares)

Occupation (according to ISCO 08)	Russia	Other destinations	Employed, total
Administrative and commercial managers	8.8	10.7	11.4
Other managers	1.0	1.9	1.5
Science and engineering professionals	2.8	4.1	3.5
Physical and engineering science technicians	1.6	0.5	2.2
Health professionals	0.2	1.2	1.1
Health associate professionals	0.1	1.7	3.2
Teaching professionals	0.2	4.6	4.0
Teaching associate professionals	0.1	0.5	1.2
Business and administration professionals	1.0	6.1	3.4
Business and administration associate professionals; Legal, social, cultural and related associate professionals; General and keyboard clerks; Customer services clerks	2.3	7.3	9.0
Personal service workers	2.2	5.8	7.1
Cleaners and helpers	0.3	1.0	3.7
Sales workers	2.5	2.4	4.1
Market-oriented skilled agricultural workers	0.2	0.2	3.4
Agricultural, forestry and fishery labourers	0.2	0.7	0.7
Building and related trades workers, excluding electricians	30.1	3.6	5.5
Mining and construction labourers	7.3	1.0	0.7
Metal, machinery and related trades workers	7.9	1.7	9.2
Handicraft and printing workers	0.2	0.2	0.3
Electrical and electronic trades workers	1.1	0.0	3.0
Stationary plant and machine operators	2.5	0.5	2.1
Assemblers	1.0	0.5	2.8
Manufacturing labourers	0.2	0.5	0.8
Drivers and mobile plant operators	15.1	23.8	8.3
Transport and storage labourers	0.4	0.0	1.0
Commissioned armed forces officers	0.1	0.0	0.7
Not defined (ND)	0.1	0.0	0.1
No answer (NA)	10.6	19.4	5.8
TOTAL	100.0	100.0	100.0
By skills:			
High-skilled	14.1	28.6	25.7
Skilled	66.9	48.8	61.7
Unskilled	8.3	3.2	6.8
NA/ND	10.7	19.4	5.8

Source: Chubrik and Kazlou (2013).

Table D2. Labour emigrants by economic sector (shares)

Economic sector (NACE Rev. 1.1 and Rev. 2)	Russia	Other destinations	Employed, total
Agriculture, forestry and fishing	0.7	1.2	10.6
Manufacturing	6.4	4.9	21.6
Electricity, gas and water supply	0.6	0.5	2.7
Construction	47.2	6.3	8.5
Wholesale and retail trade; repair of motor vehicles and motorcycles	8.8	9.5	11.9
Accommodation and food service activities	1.0	4.1	1.2
Transportation and storage	11.1	22.8	5.5
Information and communication	0.2	0.2	1.3
Financial and insurance activities	0.1	0.5	1.2
Real estate, renting and business activities	2.7	7.0	5.2
Public administration and defence; compulsory social security	0.2	0.5	3.1
Education	0.5	7.3	9.5
Human health and social work activities	0.4	3.9	6.7
Other community, social and personal services activities, etc.	8.9	11.2	5.1
NA	11.2	20.1	5.8

Source: Chubrik and Kazlou (2013).

Appendix E

Characteristics of labour migration in Belarus based on registered employment contracts, 2000-2012

The overwhelming majority of official labour migrants leave Belarus in 2012 for work associated with manual labour (2,915), as qualified workers and specialists (1,583 people), service sector employees (1,611), for agricultural work (392) and as managers (33).

According to CMD records, 2011 saw a growing tendency for foreigners to enter Belarus for labour activities in greater numbers. 8,434 foreigners came to the country in 2011(Table E1). However, the increase in 2012 compared to 2011 was rather modest: only 347 people (Figure E1). Beginning with 2009 the number of labour migrants exceeds those leaving for labour activities in other countries on the basis of signed employment contracts (Figure E3).

The major workforce suppliers to our country are: Ukraine (2854), China (1257), Lithuania (904), Uzbekistan (646), Turkey (544), Moldova (491), Latvia (315), Georgia (257), Armenia (202), Azerbaijan (154), Vietnam (153) and Poland (119) (see Figure E4). The foreigners in Belarus occupy themselves chiefly as construction workers, agricultural workers, cooks and coaches.

The comparison of labour migrants' age distribution in 2005-2010 shows that age structure of migrants arriving in Belarus is rather even, while among leaving labour migrants young people prevail: over 60% of them are less than 24 years old (see Figure E5 and Figure E6). This may indicate relatively low skills of workers leaving Belarus based on signed employment contracts (age of labour migrants is not provided by CMD after 2010).

Table E1. The labour migrants exchange based on signed employment contracts

	Number of labour migrants arriving in Belarus		Number of labour migrants leaving Belarus	
Year	total	from Kazakhstan	total	to Kazakhstan
2005	651	-	4222	-
2006	922	-	4502	-
2007	1496	10	7335	-
2008	2463	30	6204	-
2009	4835	56	4178	-
2010	6816	51	5066	10
2011	8434	68	5522	10
2012	8781	-	6534	-

Source: National Statistical Committee data and Citizenship and Migration Department of the Ministry of Internal Affairs of the Republic of Belarus internal statistics

Note: Citizens of the Russian Federation since 1999 and citizens of the Republic of Kazakhstan since 01.01.2012 have been working in the territory of the Republic of Belarus without obtaining special permits and, consequently, are left out of account in the given data of the general number of labour-migrants arriving in Belarus for work on the bases of signed employment contracts. However, they enter general migration accounting.

Figure E1. The number of labour migrants arriving in and leaving Belarus based on signed employment contracts in 2000-2012
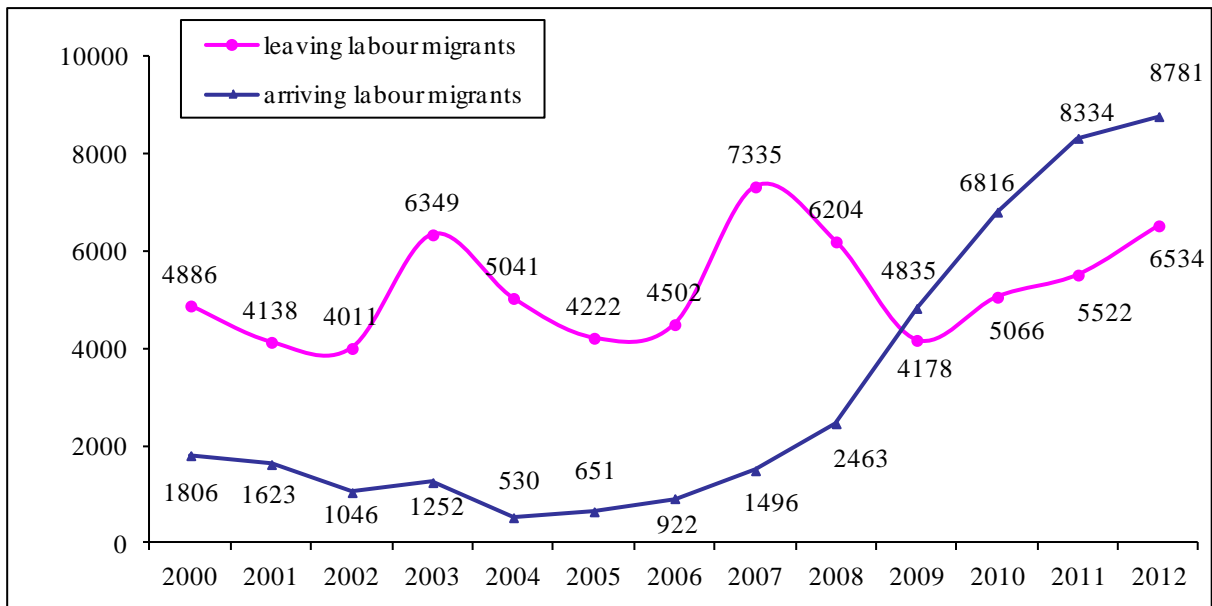
Source: National Statistical Committee data and CMD internal statistics

Figure E2. The share of labour migrants arriving in Belarus based on signed employment contracts in 2000-2012, by countries of arrival
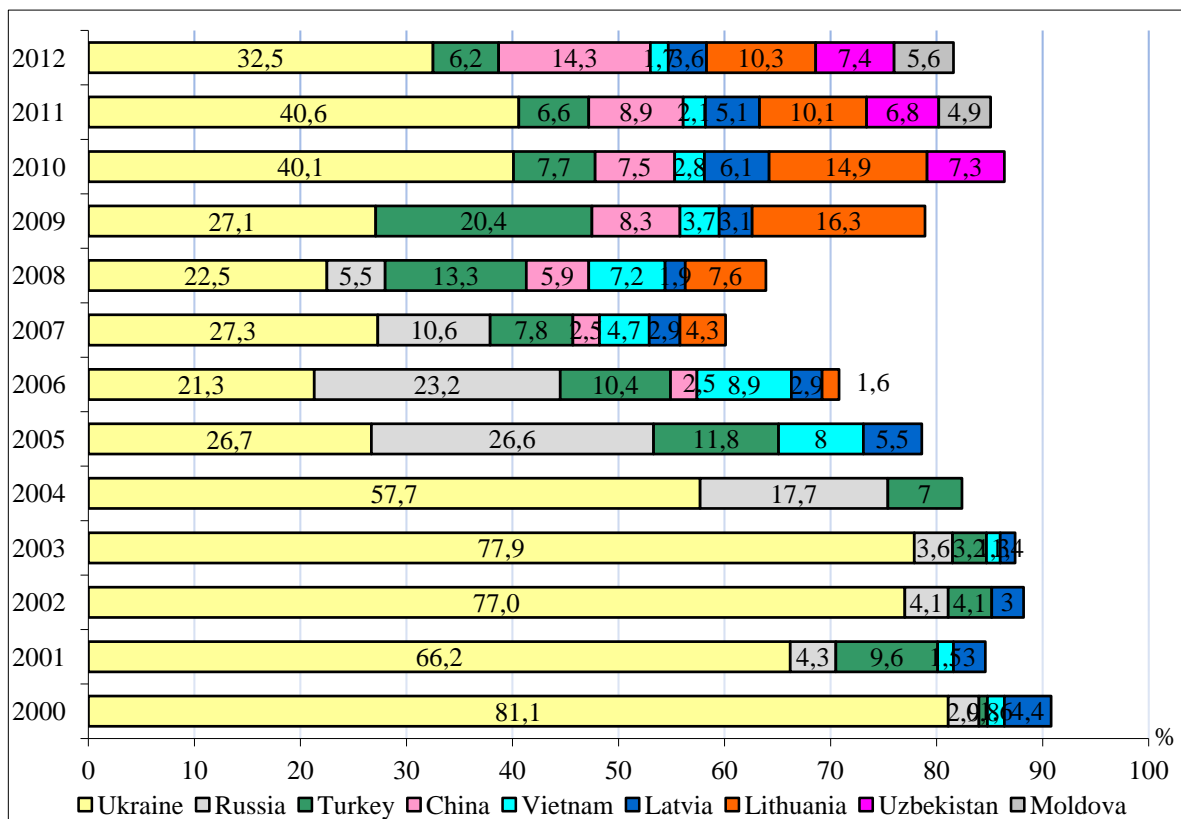
Source: Author's calculations based on National Statistical Committee data and CMD internal statistics (see note to the Table 4)

Figure E3. The ratio of arriving /leaving labour migrants in Belarus in 2000-2012
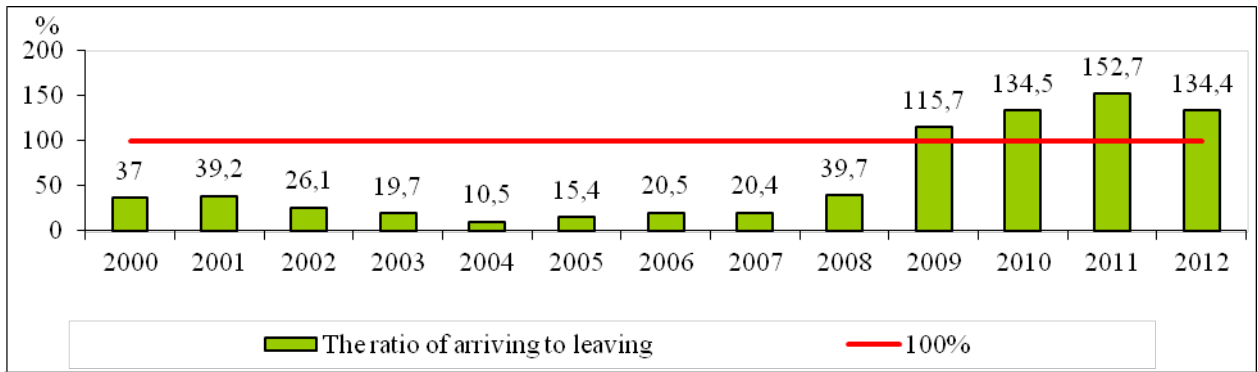
Source: Author's calculations based on National Statistical Committee data and CMD internal statistics

Figure E4. The shares of labour migrants leaving Belarus based on signed employment contracts in 2000-2012, by countries of leave
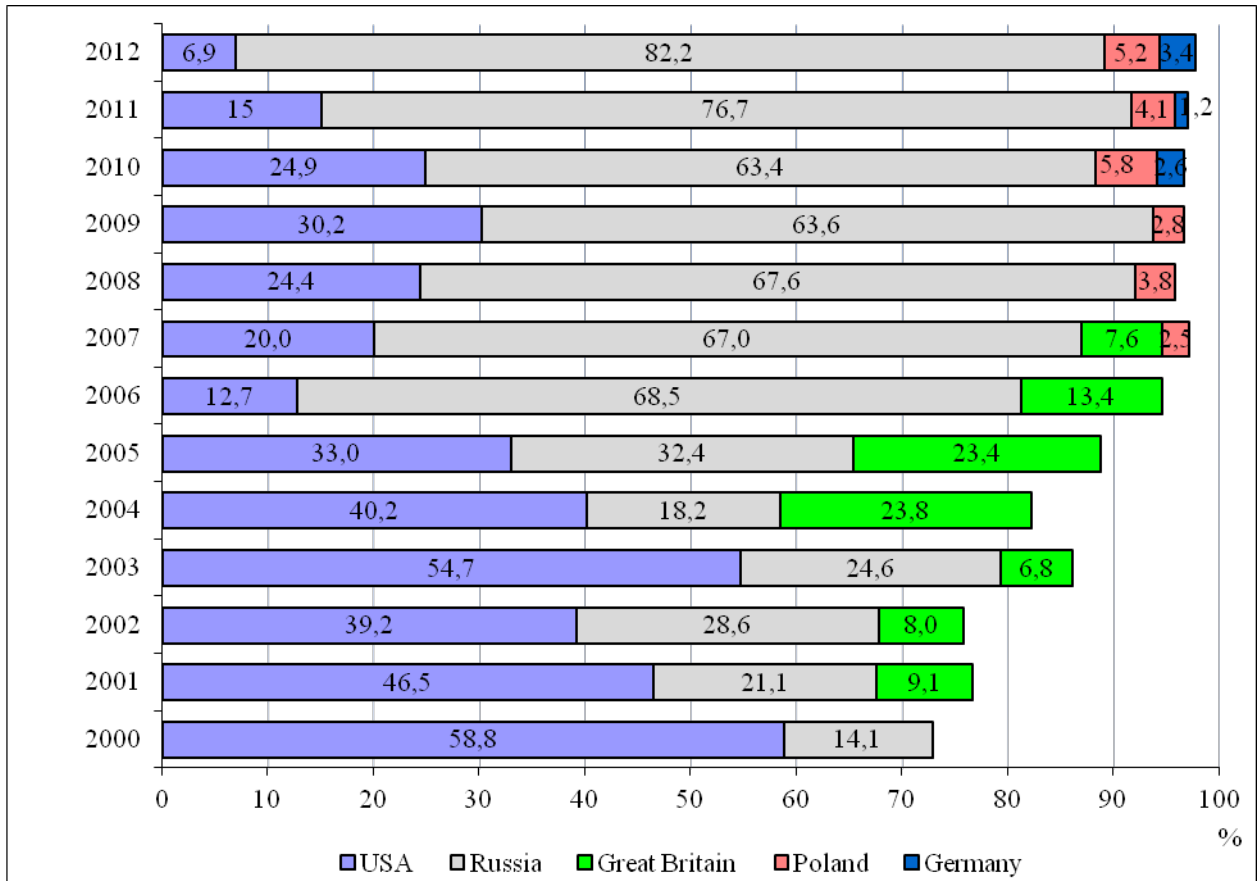
Source: Author's calculations based on National Statistical Committee data and CMD internal statistics

Figure E5. The distribution by age of labour migrants arriving in Belarus in 2005-2010
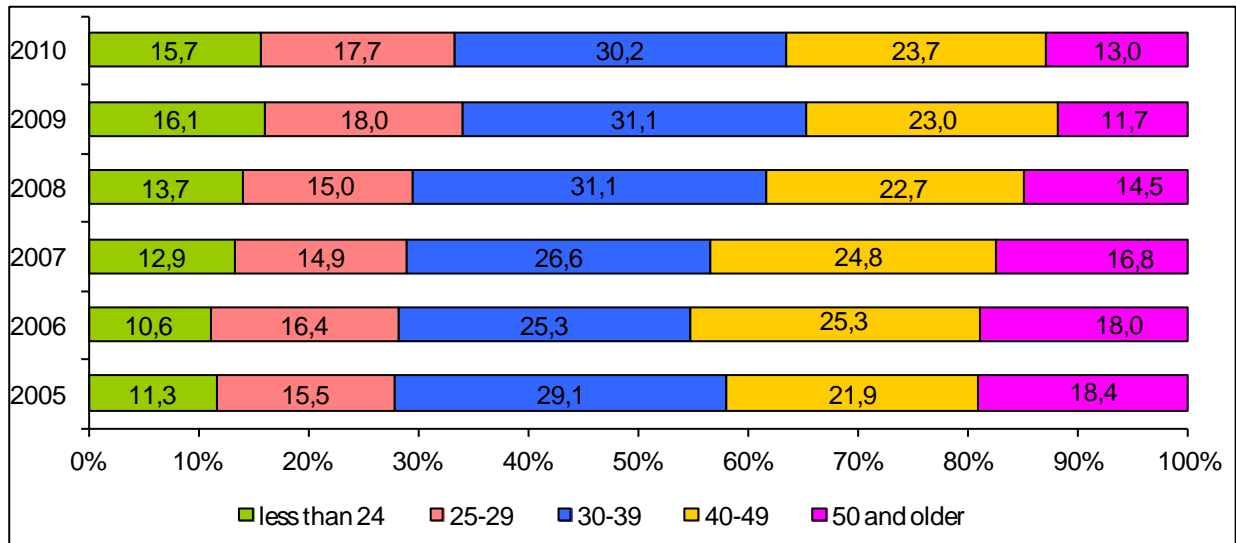
| Year	less than 24	25-29	30-39	40-49	50 and older
2010	15,7	17,7	30,2	23,7	13,0
2009	16,1	18,0	31,1	23,0	11,7
2008	13,7	15,0	31,1	22,7	14,5
2007	12,9	14,9	26,6	24,8	16,8
2006	10,6	16,4	25,3	25,3	18,0
2005	11,3	15,5	29,1	21,9	18,4

Source: Author's calculations based on National Statistical Committee data (data are not provided since 2010)

Figure E6. The distribution by age of labour migrants leaving Belarus in 2005-2010
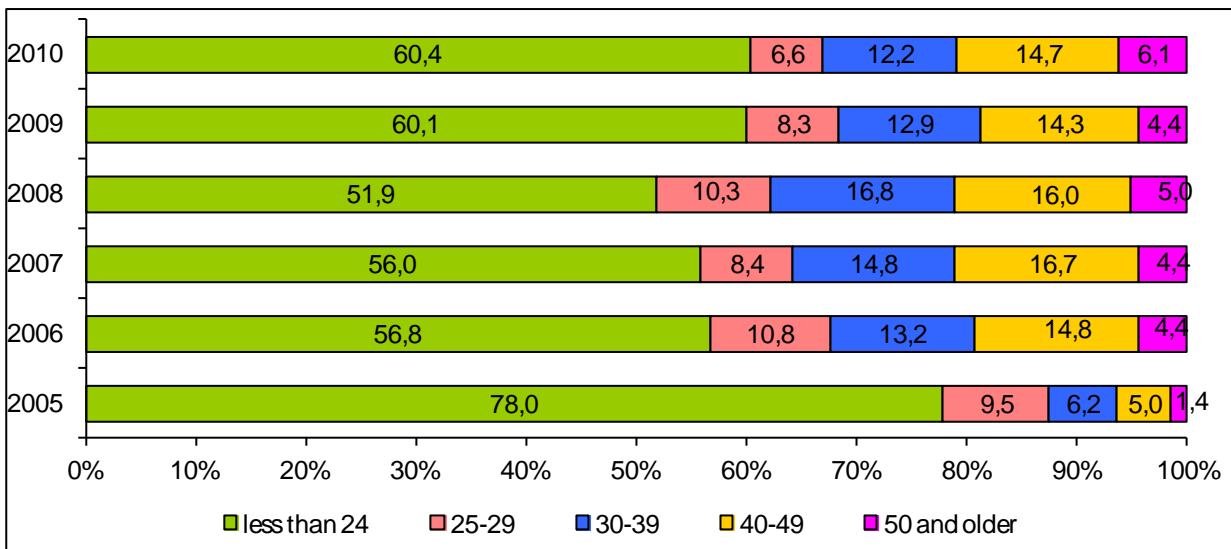
Year	less than 24	25-29	30-39	40-49	50 and older
2010	60,4	6,6	12,2	14,7	6,1
2009	60,1	8,3	12,9	14,3	4,4
2008	51,9	10,3	16,8	16,0	5,0
2007	56,0	8,4	14,8	16,7	4,4
2006	56,8	10,8	13,2	14,8	4,4
2005	78,0	9,5	6,2	5,0	1,4

Source: Author's calculations based on National Statistical Committee data (data are not provided since 2010)

Appendix F

The estimation of number of illegal migrants working in Russia

In their report "Labour Migration in Common Economic Space" (May 2012) the Integration Research Center of the European Development Bank evaluated the number of illegal labour migrants in Russia. The evaluation was done based on the 2010 data on foreign currency deductions made by the migrants to their homeland, average wage rate in Russia, cost of living index average value, and the number of officially working migrants.

Table F1 shows the upper threshold of illegal migration if the migrants supposedly pass over only 30% of their earnings to their families in the source countries.

Table F1.The number of illegal migrants working in Russia (estimation)

Source country	Remittances received from Russia in 2010, m. US dollars	Migrants working in Russia in 2010, estimates	Migrants working in Russia in 2010 officially	Migrants working in Russia in 2010 illegally
Tajikistan	2032	926 162	268 632	657 530
Kyrgyzstan	1160	528 714	117 656	411 058
Kazakhstan	132	60 164	8 267	51 897
Belarus	375	170 920	67 290	103 630

Note: Calculations are based on the following figures. The 2010 average wage in Russia made up 20,383 roubles per month which in US dollar terms made $700 per month (by average rate 29.1 RUR/$) and consequently $8,400 per year. The mean 2010 Russia cost of living averaged 6, 138 roubles. Hereby, with taxation rate 13% maximum savings would form $4780 per year.

Source: The Integration Research Center of the European Development Bank

The evidence of the fact that Tajikistan and Kyrgyzstan became unquestionable leaders of the currency remittances list convinced the authors of this report to include that in the years to come, *ceteris paribus*, the number of illegal labour migrants will have to grow namely from these two countries but not from Belarus and Kazakhstan.

Appendix G

Workers' remittances inflows and outflows in Belarus in 2011 and 2012

Table G1. Workers' remittances inflows and outflows in Belarus in 2011 and 2012

Country	2011				2012			
	Inflow		Outflow		Inflow		Outflow	
	th. USD	% of total	th. USD	% of total	th. USD	% of total	th. USD	% of total
Total	**350 329.8**	**100.0%**	**106 477.1**	**100.0%**	**379 510.2**	**100.0%**	**110 918.7**	**100.0%**
Azerbaijan	288.3	0.1%	151.9	0.1%	1 196.5	0.3%	188.6	0.2%
Armenia	133.2	0.0%	285.2	0.3%	303.5	0.1%	441.5	0.4%
Georgia	280.9	0.1%	400.7	0.4%	558.5	0.1%	413.6	0.4%
Kazakhstan	6 260.3	1.8%	891.7	0.8%	7 185.9	1.9%	1 027.8	0.9%
Kyrgyzstan	339.3	0.1%	60.5	0.1%	275.8	0.1%	47.0	0.0%
Moldova	386.7	0.1%	317.6	0.3%	249.6	0.1%	134.3	0.1%
Russia	**240 300.0**	**68.6%**	**14 000.0**	**13.1%**	**286 900.0**	**75.6%**	**19 600.0**	**17.7%**
Tadzhikistan	133.9	0.0%	161.1	0.2%	129.8	0.0%	46.2	0.0%
Turkmenistan	5.0	0.0%	3.9	0.0%	24.9	0.0%	10.6	0.0%
Uzbekistan	312.3	0.1%	106.0	0.1%	220.2	0.1%	70.2	0.1%
Ukraine	4 750.7	1.4%	3 785.1	3.6%	3 216.3	0.8%	4 520.9	4.1%
Latvia	13 503.6	3.9%	4 123.3	3.9%	6 219.2	1.6%	1 486.0	1.3%
Lithuania	**3 233.4**	**0.9%**	**4 515.0**	**4.2%**	**5 198.9**	**1.4%**	**7 090.8**	**6.4%**
Estonia	5 723.4	1.6%	1 096.8	1.0%	243.0	0.1%	317.6	0.3%
USA	**13 695.6**	**3.9%**	**14 719.3**	**13.8%**	**18 420.0**	**4.9%**	**22 266.7**	**20.1%**
Germany	**4 630.1**	**1.3%**	**11 091.9**	**10.4%**	**4 012.2**	**1.1%**	**13 466.0**	**12.1%**
Canada	779.4	0.2%	4 342.4	4.1%	727.3	0.2%	3 586.9	3.2%
Great Britain	2 999.5	0.9%	3 272.4	3.1%	2 273.2	0.6%	3 453.7	3.1%
Italy	3 527.5	1.0%	2 345.7	2.2%	4 203.5	1.1%	1 749.5	1.6%
Israel	1 072.0	0.3%	3 822.5	3.6%	932.2	0.2%	3 156.7	2.8%
Switzerland	3 515.5	1.0%	989.7	0.9%	2 662.9	0.7%	386.6	0.3%
Cyprus	1 427.9	0.4%	294.4	0.3%	971.9	0.3%	398.6	0.4%
Spain	2 201.3	0.6%	4 933.7	4.6%	706.1	0.2%	2 350.2	2.1%
France	17 804.6	5.1%	2 219.6	2.1%	16 947.9	4.5%	1 644.8	1.5%
Poland	2 681.2	0.8%	3 579.9	3.4%	771.7	0.2%	1 363.9	1.2%
Turkey	1 152.4	0.3%	2 473.6	2.3%	625.2	0.2%	2 740.2	2.5%
Belgium	315.9	0.1%	5 633.0	5.3%	411.6	0.1%	2 149.1	1.9%
China	**187.5**	**0.1%**	**6 016.1**	**5.7%**	**635.4**	**0.2%**	**6 946.1**	**6.3%**
Czech Rep.	729.5	0.2%	1 754.5	1.6%	691.6	0.2%	1 163.9	1.0%
Slovakia	110.1	0.0%	112.9	0.1%	515.6	0.1%	247.2	0.2%
Slovenia	19.4	0.0%	36.2	0.0%	14.1	0.0%	2.3	0.0%

Source: NBRB

Appendix H

Personal remittance inflows and outflows in Belarus in 2011 and 2012

Table H1. Personal remittances in Belarus in 2011 and 2012

Item	Inflow			Outflow		
	2011	2012	%	2011	2012	%
Personal remittances (1+2+3)	**792,3**	**913,1**	**115,2**	**128,6**	**134,9**	**104,9**
1. "Net" compensation of employees(Compensation of employees less expenses related to border, seasonal, and other short-term workers)	396,8	476,2	120,0	7,2	9,1	126,4
1.1. Compensation of employees	**495,1**	**569**	**114,9**	**12,4**	**15,9**	**128,2**
minus						
1.2. Taxes and social contributions related to employment of border, seasonal, and other short-term workers	5,4	6,9	127,8	1,5	1,9	126,7
1.3. Travel and transport related to employment of border, seasonal, and other short-term workers	92,9	85,9	92,5	3,7	4,9	132,4
2. Personal transfers	395,5	436,9	110,5	121,4	125,8	103,6
2.1. Workers' remittances	**350,4**	**379,5**	**108,3**	**106,4**	**110,9**	**104,2**
2.2. Other transfers between households	45,1	57,4	127,3	15,0	14,9	99,3
3. Capital transfers between households	0	0	0	0	0	0
*For information:***Remittances volume** (1.1+2.1)	**845,5**	**948,5**	**112,2**	**118,8**	**126,8**	**106,7**

Source: NBRB

Appendix I

Description of the data and results of the VAR models

Table 11. Description of the variables

Variable	Indicator name	Description
lr_in_sa	Remittances inflow in Belarus	Natural logarithm of quarterly seasonally adjusted* index (2005=100)
lgdp _sa	GDP in Belarus	Natural logarithm of quarterly seasonally adjusted index (2005=100)
lreer _sa	REER in Belarus	Natural logarithm of quarterly seasonally adjusted index (2005=100)
lcpi _sa	CPI in Belarus	Natural logarithm of quarterly seasonally adjusted index (2005=100)
lGDPru_sa	GDP in Russia	Natural logarithm of quarterly seasonally adjusted index (2005=100)

* - since the data are obtained quarterly we apply a 4-point moving average smoother to the data (using tssmooth ma *command in Stata). Thus, for time 3, we obtain an average of the first 4 power load observations (we use the previous two, current, and first future measurements).*

Table 12. Variables' descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
lr_in_sa	33	5.81096	0.54505	4.78038	6.58332
lgdp_sa	33	4.85331	0.15110	4.51470	5.03614
lGDPru_sa	33	4.87019	0.08583	4.64727	4.98975
lcpi_sa	33	5.05033	0.47089	4.56122	6.03061
lreer_sa	33	4.63333	0.10373	4.38826	4.84655

Table 13. Results of Augmented Dickey-Fuller Test (data dependent lag)

Variable	Intercept	Trend and Intercept	None
Remittances inflow (lr_in_sa)	-0.881	-2.093	2.221**
GDP in Belarus (lgdp _sa)	-2.431	-0.597	1.089
REER (lreer _sa)	-1.216	-1.844	-0.399
CPI (lcpi _sa)	0.360	-1.715	1.541
GDP in Russia (lGDPru_sa)	-0.771	-2.051	1.297

Note. Number of lags = four

* H_0 of unit root is rejected at the 10 percent level

** H_0 of unit root is rejected at the 5 percent level

*** H_0 of unit root is rejected at the 1 percent level

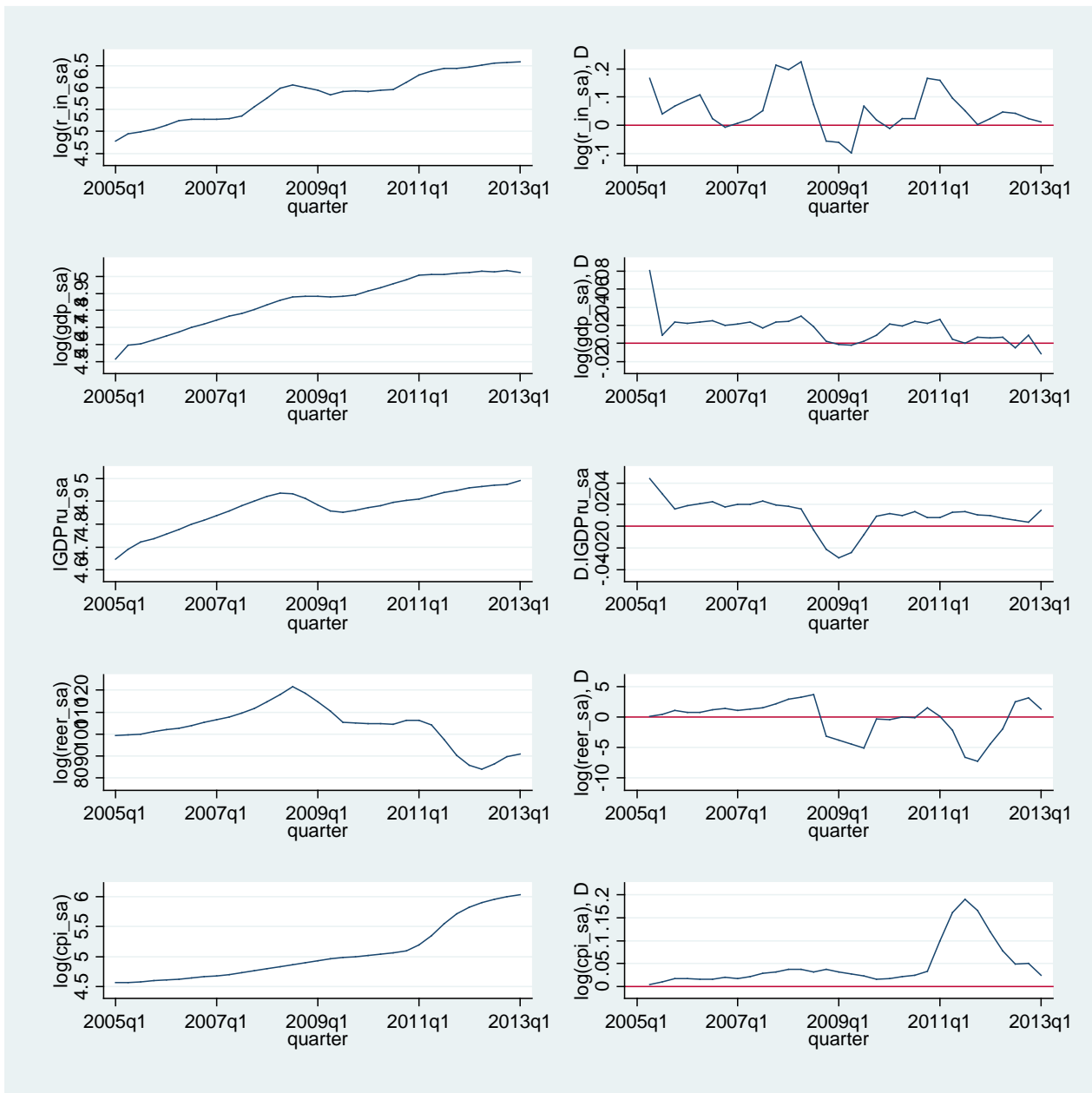**Figure 11. Levels and first differences of remittances and other variables**

Table 14. Pairwise correlations for Belarus and Russia GDP with 6 lags and remittances

Variable	(t)	(t-1)	(t-2)	(t-3)	(t-4)	(t-5)	(t-6)
Belarusian GDP	0.5461	0.2748	0.2279	0.1242	0.1343	-0.0174	-0.1646
	(0.0012)	(0.1346)	(0.2258)	(0.5208)	(0.4958)	(0.9315)	(0.4216)
Russian GDP	0.5201	0.439	0.3704	0.3125	0.2062	0.0295	-0.1609
	(0.0023)	(0.0135)	(0.0439)	(0.0988)	(0.2926)	(0.8839)	(0.4325)

* All variables are de-trended. P-values in parentheses

Uladzimir Valetka

Table 15. Pairwise correlations for remittances with 6 lags

Variable	(t)	(t-1)	(t-2)	(t-3)	(t-4)	(t-5)	(t-6)
Belarusian GDP	0.5461	0.3504	0.0937	-0.1915	-0.3512	-0.3849	-0.3428
	(0.0012)	(0.0533)	(0.6222)	(0.3198)	(0.0669)	(0.0474)	(0.0864)
Russian GDP	0.5201	0.3663	-0.0118	-0.3571	-0.5142	-0.4409	-0.1954
	(0.0023)	(0.0427)	(0.9505)	(0.0572)	(0.0051)	(0.0214)	(0.3387)
REER	0.3197	0.1828	-0.1661	-0.3804	-0.3115	-0.1232	0.1721
	(0.0744)	(0.325)	(0.3802)	(0.0418)	(0.1066)	(0.5404)	(0.4007)
CPI	0.1793	0.1181	-0.1782	-0.389	-0.2766	-0.0104	0.1851
	(0.3432)	(0.5343)	(0.3462)	(0.037)	(0.1542)	(0.9589)	(0.3654)

* All variables are de-trended. P-values in parentheses

Table 16. Vector autoregression results for Belarusian GDP and remittances

Equation		VAR(2)	VAR(3)
lgdp_saD1 R-sq		0.5888	0.6046
	chi2	42.96279	44.33871
	P>chi2	0.0000	0.0000
lgdp_saD1 L1.		0.586***	0.516*
		(0.000)	(0.013)
	L2.	0.312**	0.337
		(0.003)	(0.088)
	L3.		0.0787
			(0.502)
lr_in_saD1 L1.		0.0330	0.0242
		(0.165)	(0.317)
	L2.	-0.0644**	-0.0404
		(0.005)	(0.156)
	L3.		-0.0368
			(0.163)
	Constant	0.00207	0.00266
		(0.397)	(0.303)
lr_in_saD1 R-sq		0.4731	0.5739
	chi2	26.93177	39.05193
	P>chi2	0.0000	0.0000
lgdp_saD1 L1.		1.078	0.0327
		(0.392)	(0.983)
	L2.	1.079	1.434
		(0.181)	(0.315)
	L3.		1.217
			(0.151)
lr_in_saD1 L1.		0.700***	0.584***
		(0.000)	(0.001)
	L2.	-0.416*	-0.0961
		(0.021)	(0.641)
	L3.		-0.498**
			(0.009)
Constant		0.00557	0.0123
		(0.769)	(0.512)
SBIC		-8.926249	-8.605531
AIC		-9.393315	-9.265605
HQIC		-9.243896	-9.058878
N		30	29

p-values in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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Figure 12. Orthogonalized impulse response graphs from VAR(2) model for remittances and Belarusian GDP
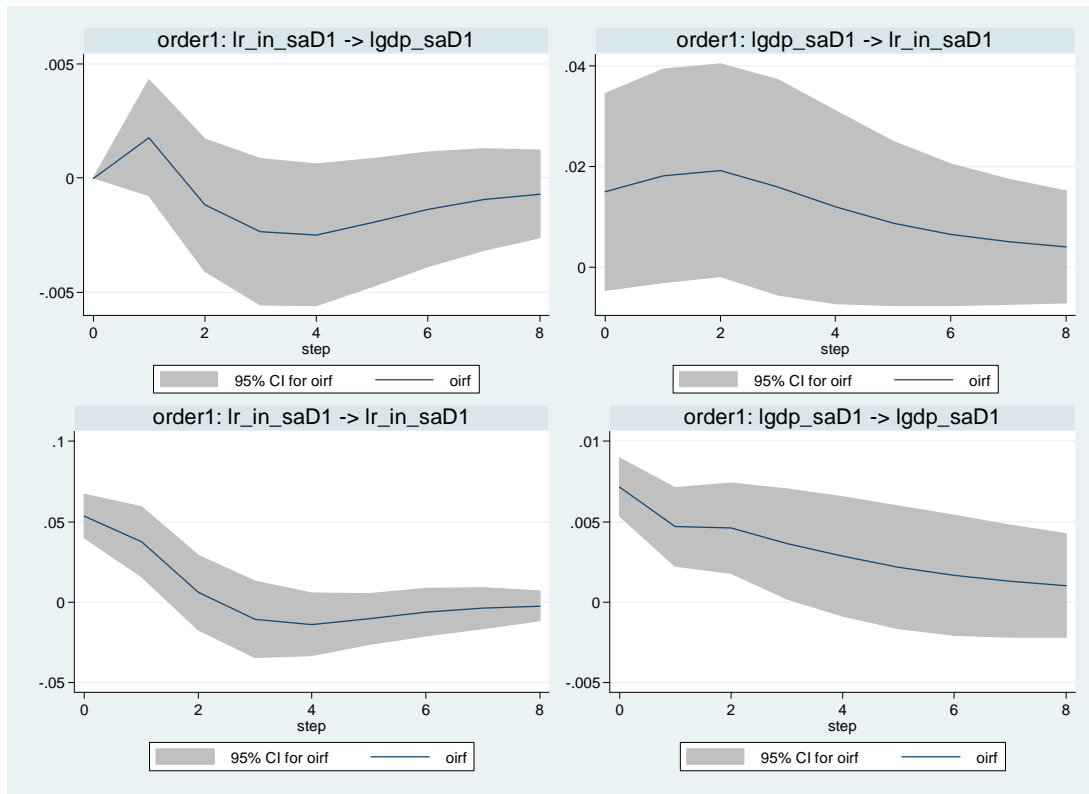

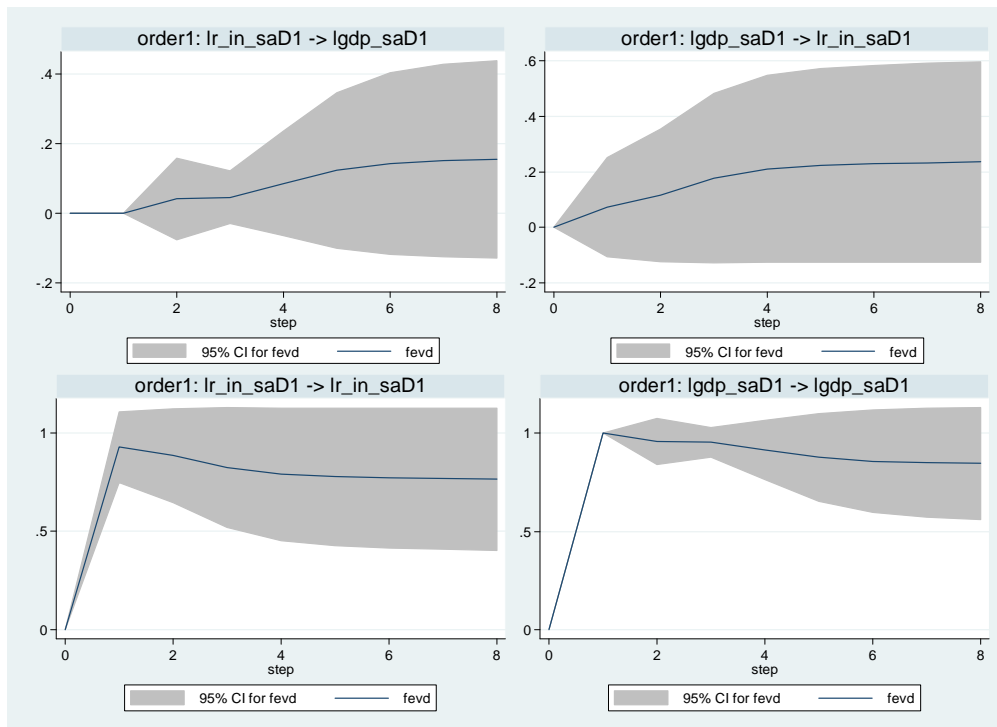**Figure 13. Cholesky forecast error variance decompositions from VAR(2) model for remittances and Belarusian GDP**

Table 17. Variance decompositions of remittances (%)

Horizon	Remittances	Belarusian GDP
1	100	0
2	98.86	1.14
3	93.45	6.55
4	87.94	12.06
5	84.69	15.31
6	83.10	16.90
7	82.30	17.70
8	81.86	18.14

Table 18. Vector autoregression results for Belarusian and Russian GDP and remittances

Sample: 2005q4 - 2013q1   No. of obs =   30

Log likelihood = 272.5164   AIC = -16.76776
FPE = 1.08e-11 HQIC = -16.45398
Det(Sigma_ml) = 2.58e-12   SBIC = -15.78692

Equation Parms RMSE R-sq   chi2 P>chi2

lr_in_saD1 7 .061565 0.5052   30.62794 0.0000
lgdp_saD1 7 .007332 0.6683   60.44803 0.0000
lGDPru_saD1 7 .00556 0.8659 193.683 0.0000

 Coef. Std. Err. z   P>z [95% Conf.   Interval]

lr_in_saD1

lr_in_saD1
L1. .6383436 .185615 3.44   0.001 .2745449 1.002142
L2. -.3825196 .1822287 -2.10   0.036 -.7396813   -.025358
lgdp_saD1
L1. .4602775 1.346857 0.34   0.733 -2.179513   3.100068
L2. .82751 .909745 0.91   0.363 -.9555575   2.610578
lGDPru_saD1
L1. 1.770751 1.5127 1.17   0.242 -1.194086   4.735589
L2. -.6111036 1.579907 -0.39   0.699 -3.707664   2.485457
cons .0101528 .0195793 0.52   0.604 -.0282219   .0485275

lgdp_saD1

lr_in_saD1
L1. .0179071 .0221048 0.81   0.418 -.0254174   .0612317
L2. -.0537181 .0217015 -2.48   0.013 -.0962522   -.011184
lgdp_saD1
L1. .471314 .1603962 2.94   0.003 .1569431 .7856848
L2. .2835341 .1083409 2.62   0.009 .0711898 .4958784
lGDPru_saD1
L1. .4506452 .1801464 2.50   0.012 .0975647 .8037257
L2. -.2366928 .18815 -1.26   0.208 -.60546   .1320745
cons .0027121 .0023317 1.16   0.245 -.0018579   .0072822

lGDPru_saD1

lr_in_saD1
L1. .0079317 .016762 0.47   0.636 -.0249211   .0407846
L2. -.0470117 .0164562 -2.86   0.004 -.0792652   -.0147582
lgdp_saD1
L1. -.0062789 .1216279 -0.05   0.959 -.2446651   .2321073
L2. -.0604623 .0821545 -0.74   0.462 -.2214822   .1005576
lGDPru_saD1
L1. 1.229902 .1366044 9.00   0.000 .9621625 1.497642
L2. -.3304881 .1426734 -2.32   0.021 -.6101229   -.0508533
cons .0043551 .0017681 2.46   0.014 .0008897 .0078205

Table 19. Variance decompositions of remittances in VAR model including Russian GDP (%)

Horizon	Remittances	Belarusian GDP	Russian GDP
1	100	0	0
2	98.33	0.03	1.64
3	93.57	0.71	5.71
4	89.09	1.05	9.86
5	87.02	1.01	11.97
6	86.46	0.99	12.55
7	86.34	1.16	12.51
8	86.18	1.43	12.40

Figure 14. Impulse response graphs (top row) and variation decomposition (bottom row) for VAR(2) model including Russian GDP
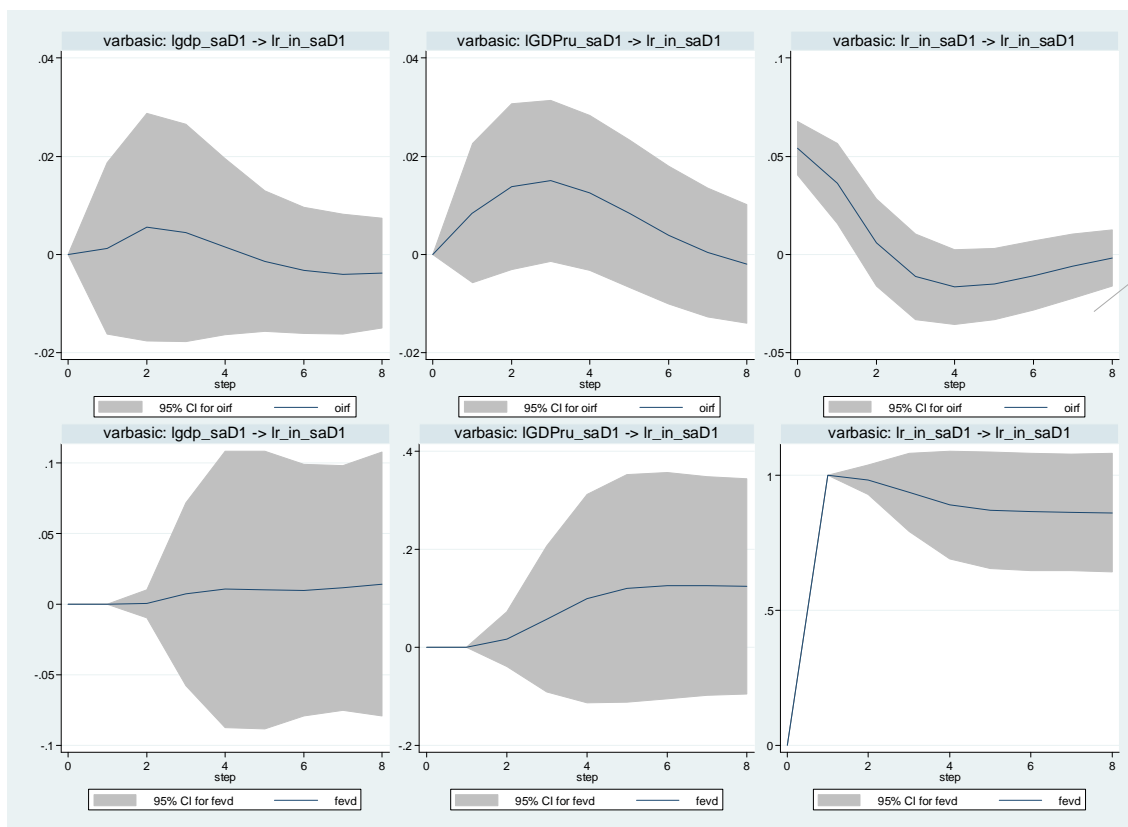
**Figure 15. Orthogonalized impulse response graphs from VAR(2)
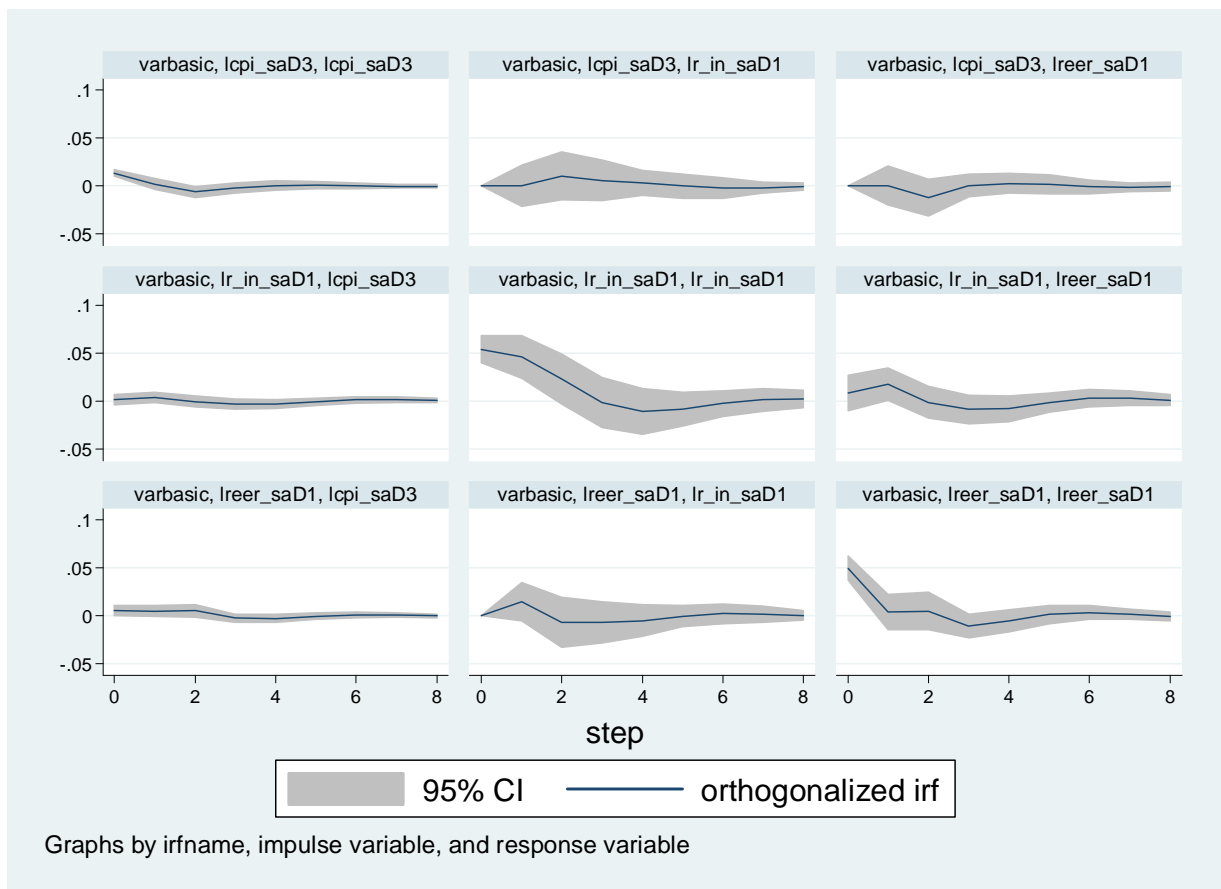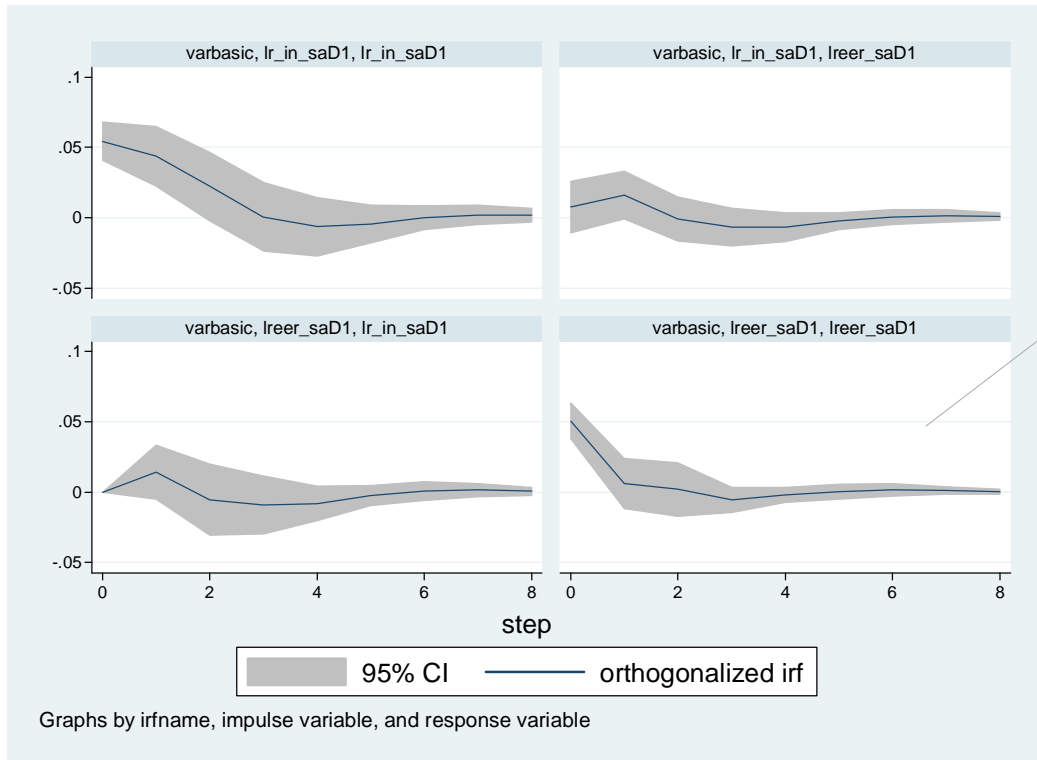model for remittances and REER**

Graphs by irfname, impulse variable, and response variable

Graphs by irfname, impulse variable, and response variable

Table I10. Vector autoregression results for remittances, REER and CPI

Sample: 2006q2 - 2013q1			No. of obs =	28
Log likelihood = 166.9429			AIC =	-10.42449
FPE = 6.16e-09		HQIC =	-10.11904	
Det(Sigma_ml) = 1.33e-09			SBIC = -9.425341	

Equation	Parms	RMSE	R-sq	chi2	P>chi2
lr_in_saD1	7	.062184	0.5347	32.18045	0.0000
lreer_saD1	7	.058223	0.2327	8.491287	0.2043
lcpi_saD3	7	.017116	0.3905	17.93792	0.0064

	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
lr_in_saD1						
lr_in_saD1						
L1.	.8090569	.1731821	4.67	0.000	.4696262	1.148488
L2.	-.2991949	.163686	-1.83	0.068	-.6200137	.0216239
lreer_saD1						
L1.	.2949543	.2485042	1.19	0.235	-.192105	.7820137
L2.	-.491741	.24366	-2.02	0.044	-.9693058	-.0141761
lcpi_saD3						
L1.	.0067816	.8105782	0.01	0.993	-1.581923	1.595486
L2.	.739752	.7647738	0.97	0.333	-.7591772	2.238681
cons	.0240994	.0144431	1.67	0.095	-.0042086	.0524074
lreer_saD1						
lr_in_saD1						
L1.	.3124786	.1621503	1.93	0.054	-.0053301	.6302873
L2.	-.319477	.1532591	-2.08	0.037	-.6198594	-.0190946
lreer_saD1						
L1.	.0824443	.2326744	0.35	0.723	-.3735891	.5384777
L2.	.1018768	.2281387	0.45	0.655	-.3452669	.5490205
lcpi_saD3						
L1.	.0239293	.7589439	0.03	0.975	-1.463573	1.511432
L2.	-.9042917	.7160573	-1.26	0.207	-2.307738	.4991548
cons	-.0026741	.0135231	-0.20	0.843	-.0291788	.0238307
lcpi_saD3						
lr_in_saD1						
L1.	.0476124	.0476689	1.00	0.318	-.0458169	.1410417
L2.	-.1019799	.0450551	-2.26	0.024	-.1902862	-.0136736
lreer_saD1						
L1.	.0818408	.0684015	1.20	0.232	-.0522238	.2159053
L2.	.1256583	.0670682	1.87	0.061	-.0057928	.2571095
lcpi_saD3						
L1.	.1468484	.2231141	0.66	0.510	-.2904472	.584144
L2.	-.474575	.2105063	-2.25	0.024	-.8871597	-.0619902
cons	.0025081	.0039755	0.63	0.528	-.0052837	.0103

Appendix J

Remittances inflows and cash foreign exchange sales by households

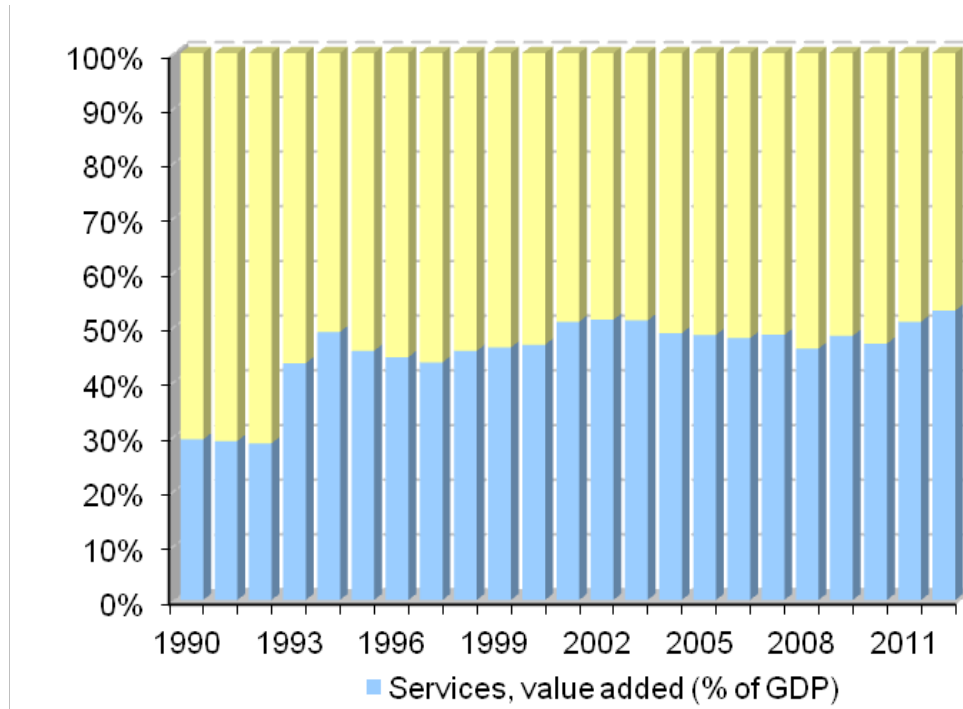**Figure J1. Remittances inflows and cash foreign exchange sales by households, mln. USD**
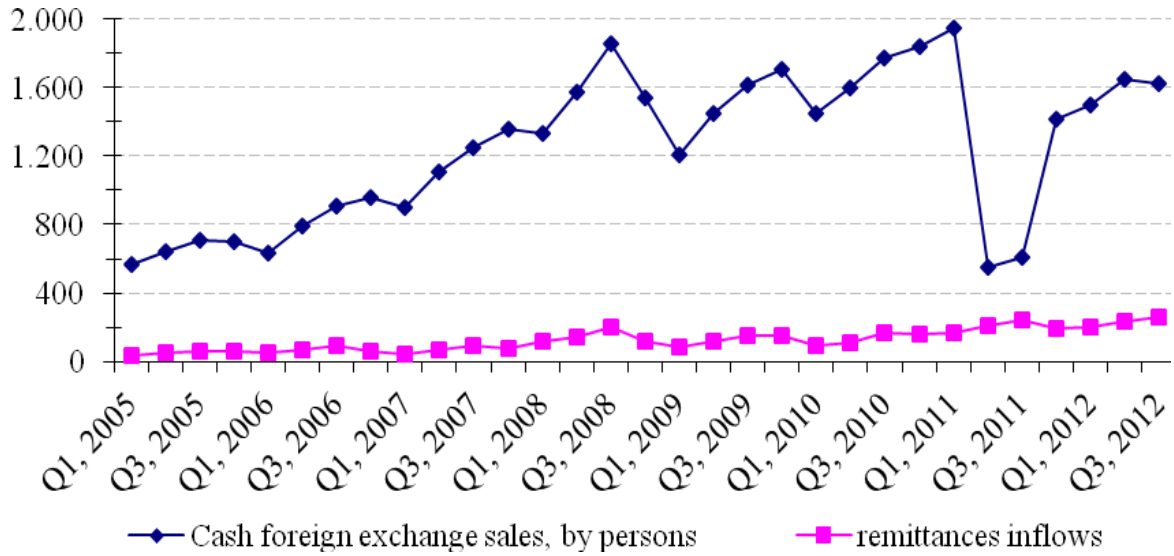
Source: NBRB data

Appendix K

The share of the service sector in Belarusian GDP

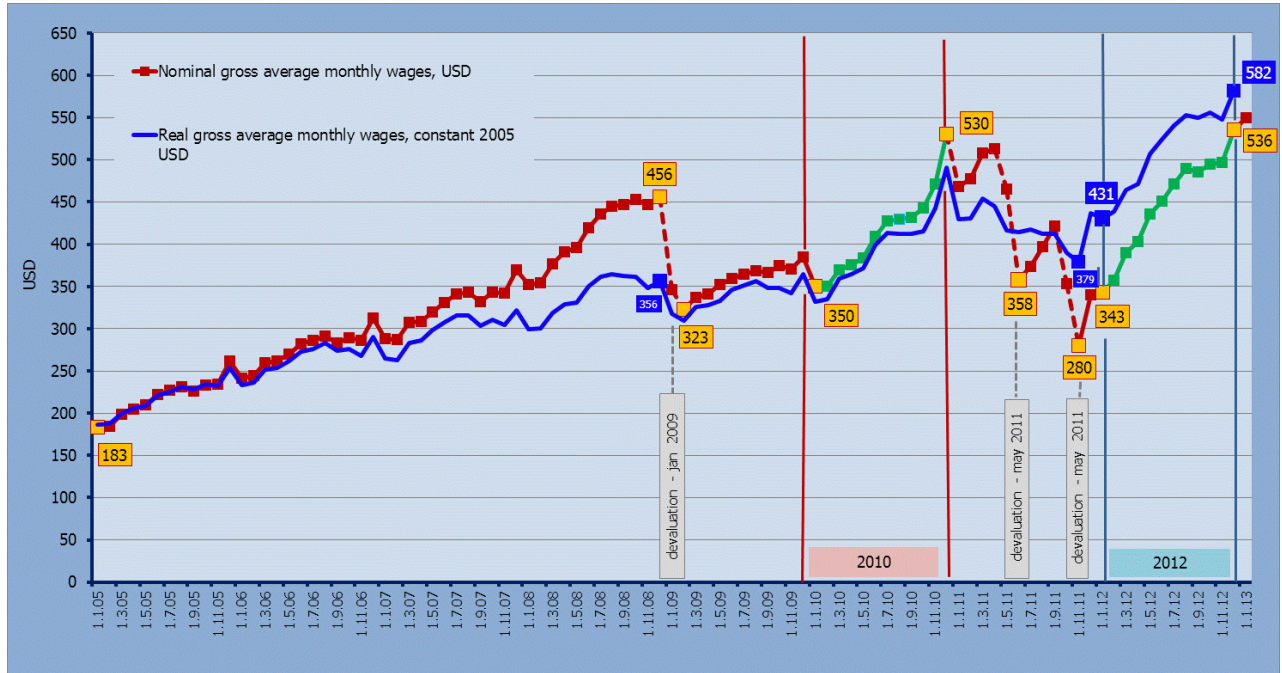**Figure K1. The share of the service sector in Belarusian GDP, %**
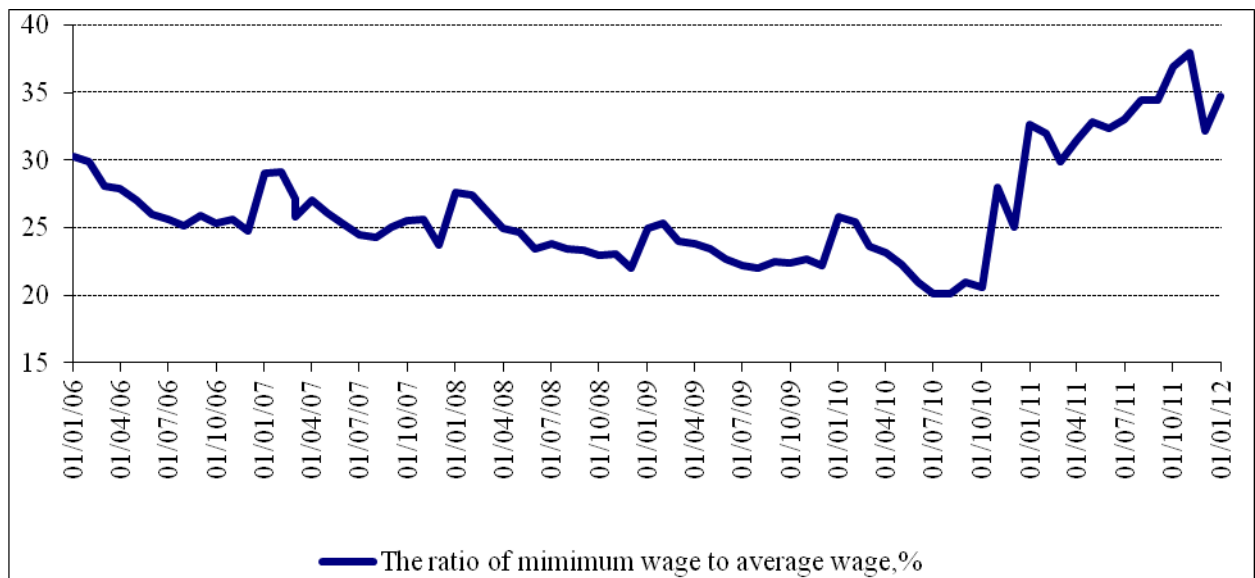

Source: Belstat

Appendix L

Average wage dynamics in Belarus in 2005-2012

Figure L1. Nominal and real gross average monthly wages in Belarus in 2005-2012, USD

Source: Simon Kuznets Research Center (www.kuznetscenter.ekonomika.by)

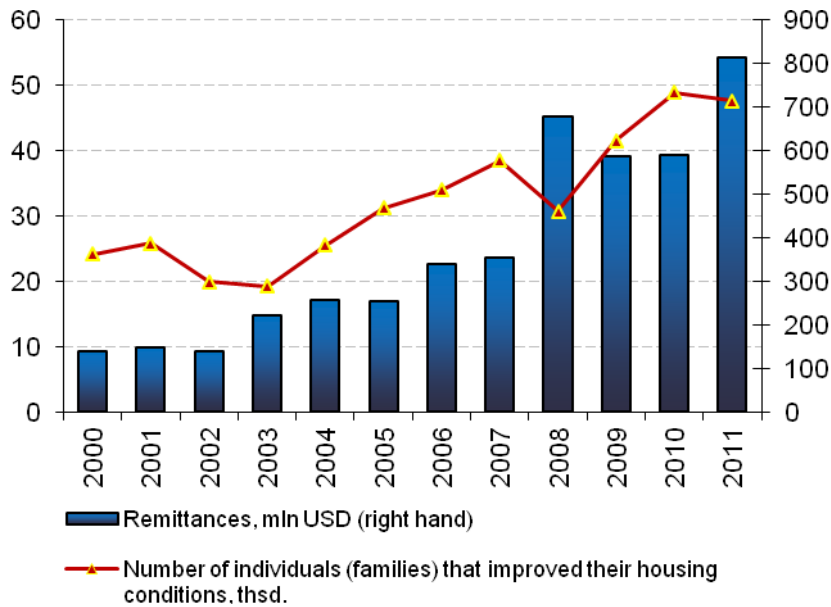**Figure L2. The ratio of minimum wage to average wage (Kaitz index) in Belarus in 2006-2011**

Source: author's calculations based on Belstat monthly data.

Appendix M

Remittances and housing sector development

Figure M1.Volume of remittances and number of individuals (families) that improved their housing conditions in 2000-2011

Source: NBRB and Belstat data

Figure M2. The dynamics of remittances and housing stock (millions of square metres of total floor space) in 2000-2011
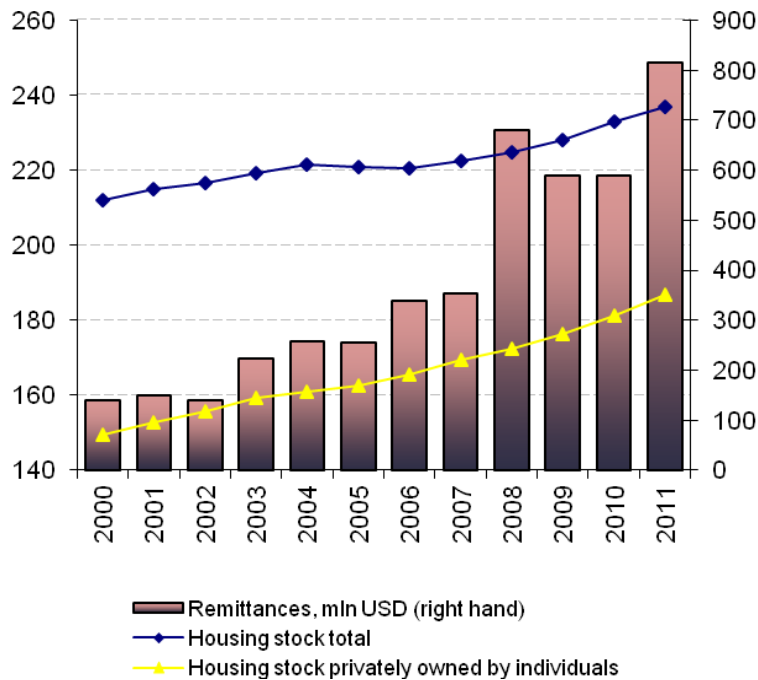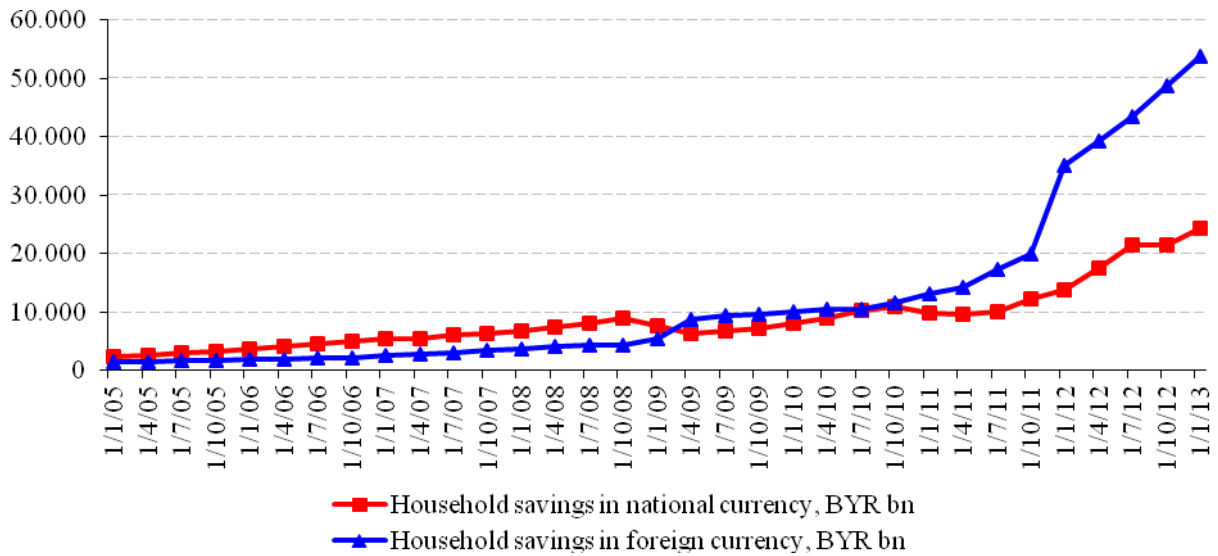

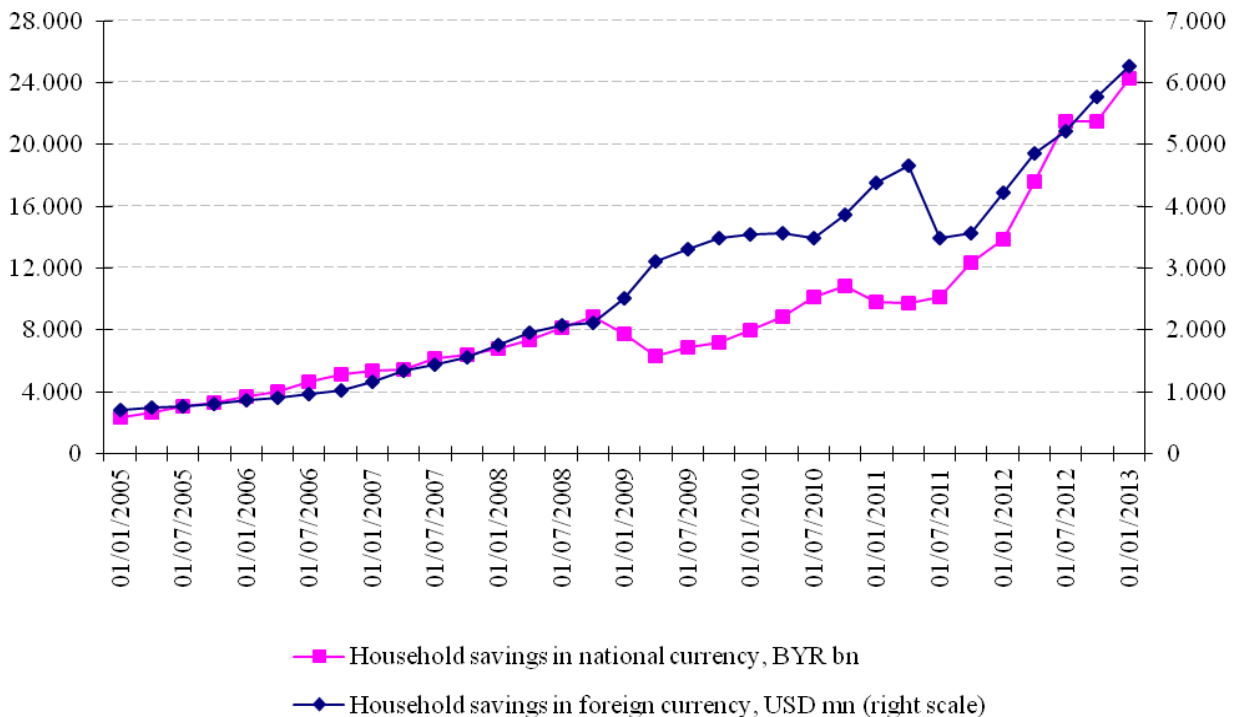Source: NBRB and Belstat data

Appendix N

Households' savings in foreign and national currency in 2005-2012

Figure N1.Growing gap in household savings in foreign and national currency in 2005-2012, BYR bln

Source: NBRB

Figure N2. Household savings in national (BYR bln) and foreign currency (USD mln) in 2005-2012


Source: NBRB monthly data

Appendix O

Effects of remittances: predictions from labour supply model of immigration

The simple labour supply model of immigration suggests that the source country suffers, *ceteris paribus*, a decline in total production but enjoys a rise in *per capita* income after immigrants depart. Figure O1 illustrates that the leftward shift in labour supply causes wages in the source country to rise from A to Bf or the remaining workers. As a result, immigration increases total wages accruing to the remaining workers from the area f to f + e in the source country. On the other hand, the income accruing to the economy's other factors declines from d + e + g to just d. The size of the source country economy shrinks by the areas g + h that lie between the original and post-immigration labour supply curves S and S' and under the fixed value of the marginal product of labour, or labour demand, curve. The effect of immigration on the source country is a mixed result, with *per capita* total income rising, the size of the economy shrinking, and some groups gaining at the expense of others.

Figure O1. Immigration's q' (q labour markets
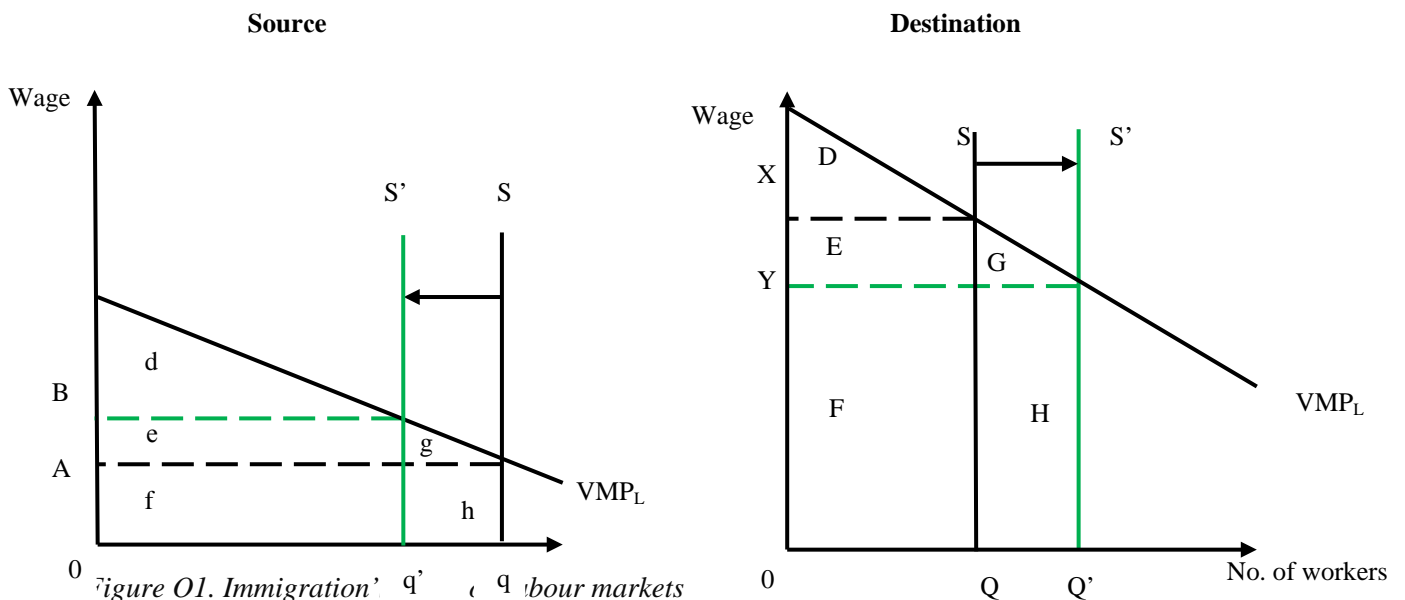
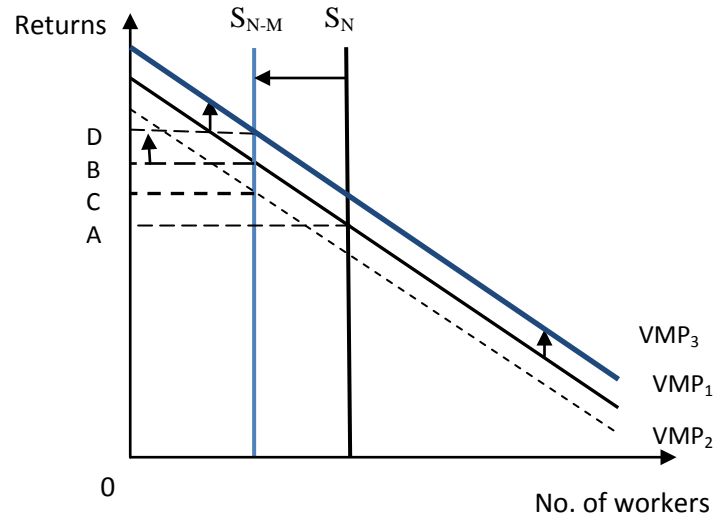Source: Bodvarsson and Van den Berg, 2009.

The simple labour supply model of immigration is incomplete, however. First of all, the departure of a substantial number of workers implies that there are fewer consumers living in the source country, and the total income of that reduced number of consumers is also lower by the areas g + h. All things being equal, immigration reduces labour demand in the source country.

In the real world trade is not costless. Many goods and services are still "non-tradables". Thus, the movement of people from one country to another also shifts some demand from one economy to another. The conclusions from the basic labour supply model of immigration, therefore, must be modified as suggested in Figure O2: when immigrants depart from the country, total output and income fall, the demand for labour declines from VMP1 to VMP2 (VMP stands for the ''value of the marginal product'' of labour). The wage thus rises only to C, not all the way to B as in Figure O1.

Immigrant remittances (R) shift income, and thus labour demand, from the destination country to the source country. In fact, if immigrants remit a substantial enough portion of their higher destination country incomes to the source country, then total demand for labour in the source country could actually increase even though people leave the country.

If remittances exceed the loss in income due to the shrinking of the economy after the departure of immigrants (R>g+h), the demand curve for labour could on balance shift upward rather than downward (Figure O2).

Figure O2. Immigration and demand for labour in the source country with remittances

Source: Bodvarsson and Van den Berg, 2009.

Figure O2 shows two different scenarios in the source country for labour demand following emigration. In the absence of remittances, labour demand falls from VMP1 to VMP2, causing wages to fall from B to C. With remittances, labour demand rises from VMP1 to VMP3, causing wages to rise to D. Note, however, that a fraction of income remitted back to the source country must be sufficiently high for wages to rise, especially when one destination country dominates the labour migration landscape.

Appendix P

Objectives and measures of remittance facilitation policy

Table P1. Specific objectives and measures of remittance facilitation policy

Intermediate objectives	Specific objectives	Examples of measures
Increase the volume of current remittances	Maximizing the volume of remittances sent from abroad Minimizing the depletion of remittances by transfer costs Increasing financial returns to remittance deposits Diverting a proportion of remittances to be used by the state	Promoting short-term labour migration Low barriers to market entry for transfer service providers Foreign currency accounts with premium interest rates Direct taxation of remittance transfers
Promote the channeling of remittances directly to development purposes	Promoting donations by remittance senders Stimulating development financing by hometown associations (HTAs) Outreach through the infrastructure of microfinance institutions	Voluntary check-off for charitable donations on transfer forms Matched funding for HTAs Small-scale credit for remittance receivers
Stimulate direct investment of remittances	Outreach through migrants' service bureaus SME schemes (financial, infrastructural, or innovative)	One-stop-shop for emigrant investors Tax break on imports of capital goods
Stimulate indirect investment of remittances	Promoting transfers through financial institutions Increasing financial returns to remittance deposits Promoting consumption of local goods and services	Cross-subsidization of transfer services by banks Foreign currency accounts with premium interest rates Tariffs on imported goods with locally produced alternatives
Stimulate development-friendly consumption	Enabling migrants to spend on their relatives' behalf Addressing the social impact of remittance fuelled business sectors Stimulating banking unbanked senders and receivers	Health insurance for non-migrants marketed to emigrants Surveillance of employment in the construction sector Cross-subsidization of transfer services by banks
Stimulate sound management of remittances	Promoting financial literacy among senders and receivers Promoting transfers through financial institutions	Financial education programmes through community organizations Cross-subsidization of transfer services by banks
Secure future remittances	Promoting continued migration Promoting diaspora engagement	Bilateral labour migration agreements Exchange programmes for children of emigrants

Source: Carling (2007).