Impact of Remittance Outflows on Sending Economies: The Case of the Russian Federation

By George Naufal and Ismail Genc1

The literature on remittance flows has relatively little information on the impacts of remittance outflows on countries. The Russian Federation consistently ranks among the top remittance senders in the world, however the Russian case remains a largely unstudied area. This article addresses this gap. The findings show that remittance outflows are still very small compared with GDP and that the Russian economy will continue to need foreign labour. So-called push factors in neighbouring countries will also continue to make the Russian Federation an attractive workplace for foreign workers. The authors encourage the Government of the Russian Federation to take pre-emptive measures for both political and economic reasons, such as offering more investment opportunities for expatriate workers.

Key words: Russian Federation, remittance outflows, Central Asia, econometric analysis

Introduction

Remittance flows

The literature on remittance flows has grown steadily over the last few decades. Interest in studying remittance flows is fuelled not only by the increasing mobility of people but also by the size of the money transfers (remittances) that migrants send back to their home countries. Available data suggest that the global migrant stock almost doubled between 1960 and 2000 (Özden and others, 2011). The number of migrants has already crossed the 200 million mark, effectively equalling the size of the fifth largest country in the world, and is expected to keep growing (International Organization for Migration (IOM), 2015). In the latest estimates, remittance flows account for more than half a trillion dollars.2

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1 The authors are George Naufal, Texas A&M University, College Station, Texas, United States, and Institute of Labour Economics (IZA), Bonn, Germany; and Ismail Genc, American University of Sharjah, Sharjah, United Arab Emirates. They would like to express their gratitude for suggestions made during the peer review process, especially for the suggestion on the use of the Solow formulation in the econometric analysis section.

Three factors have attracted the attention of policymakers and international organizations with regard to remittance flows. First, remittance flows have consistently and continuously increased over the last five decades, with increasing growth rates being such that remittance inflows have more than doubled in the last decade alone. Second, for many receiving countries remittance inflows are also their main source of income, surpassing that of foreign aid and foreign investment (Naufal and Genc, 2013). The top receiving countries are China, India, Mexico and the Philippines, each having received at least $25 billion in recorded remittance inflows in 2015. China and India each received more than $60 billion in remittances that year. While these are large amounts of money in absolute terms, relative to gross domestic product (GDP) and other macroeconomic variables these amounts may not be that significant. However, in countries such as Kyrgyzstan, the Republic of Moldova and Tajikistan, remittance inflows constitute at least 20 per cent of these countries’ GDP. Remittance inflows also account for at least 20 per cent of GDP in eight other countries. Finally, the recent global financial crisis highlighted the resilience of remittance inflows specifically relative to international monetary flows (Sirkeci and others, 2012). The financial crisis negatively affected other financial flows more than it did remittance flows. Owing to budgetary pressures during the crisis, the levels of most foreign direct investment and development aid declined, and in some instances development programmes were discontinued. Remittances, however, were not affected as migrants continued to send money to their home countries mainly for altruistic reasons, such as aiding households suffering job losses, or helping those adversely affected by rising prices and the like. In addition, some migrants have taken advantage of investment opportunities in their home countries.

The growing interest in remittance inflows has led to an increase in research into the determinants and patterns of remittances and into the effects of such inflows on the receiving economies. Remittance inflows have been linked to: (a) income inequality and poverty, consumption and investment, education and health outcomes at the household level; and (b) exchange rates, income growth, financial development and export competitiveness at the national level. The effects of remittance inflows on receiving countries have been mixed. On the one hand, remittance inflows alleviate poverty and income inequality and improve retention of students in schools and health outcomes. Remittances also alleviate money constraints in the receiving households, thus enabling them to spend more on capital goods. On the other, remittance inflows can increase inflation by increasing demand, cause appreciation of the real exchange rate and inhibit economic growth as a result of a lower supply of labour due to the moral hazard behaviour of recipients.

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3 Authors’ calculation based on data from World Bank, Migration and Remittances Data online.
4 For a detailed review of the literature and the effects of remittance inflows, see Naufal and Genc (2013).
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The academic community along with governmental and international institutions have paid attention largely to remittance inflows and their role in shaping development in receiving countries. When remittances are discussed in the literature, the focus is almost always on remittance inflows. Large remittance inflows into a country, however, are a direct consequence of large remittance outflows from at least one other country; in other words, outflows occur before inflows. There are several reasons for the lack of attention to remittance outflows, such as their small absolute or relative size compared with the main macroeconomic indicators of the sending economies. Further, the migration literature reflects interest mostly in the development effects of remittance flows with regard to such factors as poverty, inequality, economic growth and health outcomes; hence, the literature is focused on remittance inflows rather than outflows. In the next section remittance outflows are discussed in more detail.

Remittance outflows

As with remittance inflows, remittance outflows are large in their total amounts for the main remitting countries and large in share of GDP for other countries. For the period between 2009 and 2015, the United States of America was consistently ranked first in terms of the amount of funds remitted, with outflows of at least $50 billion each year. The Russian Federation and Saudi Arabia have often traded second place in rankings, alternating between second and third place. The remittance outflows from the Russian Federation ranged from a low of $21 billion in 2009 to a high of $37 billion in 2013. Table 1 contains the ranking of the five countries with the highest levels of remittance outflows from 2009 to 2015.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>52</td>
<td>55</td>
<td>58</td>
<td>61</td>
<td>1st</td>
<td>1st</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>34</td>
<td>36</td>
<td>38</td>
<td>2nd</td>
<td>2nd</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>21</td>
<td>21</td>
<td>26</td>
<td>31</td>
<td>37</td>
<td>32</td>
<td>19</td>
<td>3rd</td>
<td>5th</td>
</tr>
<tr>
<td>Germany</td>
<td>15</td>
<td>14</td>
<td>16</td>
<td>15</td>
<td>19</td>
<td>21</td>
<td>18</td>
<td>5th</td>
<td>6th</td>
</tr>
<tr>
<td>Switzerland</td>
<td>14</td>
<td>16</td>
<td>21</td>
<td>21</td>
<td>23</td>
<td>24</td>
<td>24</td>
<td>4th</td>
<td>3rd</td>
</tr>
</tbody>
</table>


5 For more details concerning the reasons behind the lack of attention of the academic community to remittance outflows, see Naufal and Genc (2013).
6 Authors’ calculation based on data from World Bank, Migration and Remittances Data online.
While the sums of remittance outflows seem large, in relative terms they are somewhat deceptive. The first five countries ranked according to remittance outflows are all large economies, but the money outflows constitute only a small percentage of their GDP. For instance, GDP of the United States for 2014 was $17 trillion, which suggests that remittance outflows accounted for just 0.3 per cent of the output of the local economy. Among the top five remitting countries, Saudi Arabia has the largest share of remittances to GDP (almost 5 per cent) followed by Switzerland (3 per cent).

As is the case with remittance inflows however, outflows as a share of GDP have crossed the double digit mark in some countries, with Luxembourg leading the way (almost 20 per cent in 2014) followed by Oman, Lebanon, Kuwait and Bahrain in that order (all exceeding 10 per cent each). Even if the amount and relative size of the remittance outflows seem to be on par with remittance inflows, the academic and international organization communities have paid significantly less attention to money outflows relative to money inflows. The reason for this omission is not clear; perhaps it is related to the fact that remittance outflows typically flow from wealthier economies to developing countries, which brings the development impact of remittance inflows to the forefront of policymakers’ interest.

The research on remittance outflows that exists is focused mostly on countries that are members of the Gulf Cooperation Council (GCC). This situation is not surprising given that the total population of the GCC countries contains large proportions of foreign workers, which is similar to the case of Luxembourg (Naufal, 2015). Further, of the top 13 countries globally according to the share of remittance outflows to their GDP, 6 are GCC countries. Existing empirical evidence from these countries suggests that remittance outflows weaken economic growth in the near term but have no effect in the long term (Alkhathlan, 2013). Remittance outflows obviously are not being spent on local consumption and investment opportunities, a situation that negatively affects the short-term economic growth of the local economy as migrants in GCC countries tend to remit money abroad almost as soon as they earn it. In the long term, the local Government’s policies on spending and exporting outweigh the effects of remittances and dilute the effects on economic growth. In view of these aspects, remitting countries should pay attention to the impact of remittance outflows on their monetary policy (Hathroubi and Aloui, 2016; Termos, Genc and Naufal, 2016). Remittance outflows can also play a positive role in remittance-sending countries by reducing inflation (Termos, Naufal and Genc, 2013). The mechanism through which this occurs is simple: remittance outflows would have stayed in the local economies if they had not been remitted;
hence, they would have added to the local demand for goods and services. Higher demand for commodities would have increased their overall prices in remittance-sending economies.

A few points arise from the current research on remittance outflows. First, the research is fairly new, with the earliest study to the authors’ knowledge having been conducted in 2013. Second, the research so far is focused on the macroeconomic effects of remittance outflows on economic growth, monetary policy and inflation. Third, the empirical evidence is limited to the GCC countries in general and Saudi Arabia in particular. The GCC countries are unique in their natural reserves, economies, location, demographic structures and migration dynamics, constraining the ability to generalize findings from these cases. In this article, remittance outflow research is extended beyond the Persian Gulf region to a discussion on the macroeconomic effects of remittance outflows, using the Russian Federation as a case study. To better understand the effects of remittance outflows, the following section contains a discussion of the case of the Russian Federation, one of the top remitters in the world.

Remittance outflows: the case of the Russian Federation

History of migration flows to the Russian Federation

Migratory movements to the Russian Federation are not recent events; they have existed for centuries. Until the collapse of the former Union of Soviet Socialist Republics however, migration was confined to internal migration, with international movement being restricted (Iontsev and others, 2010). The post-Soviet period made possible international migration to the Russian Federation, with inflows of migrants coming mainly from former Soviet States. The initial movement of people after the dissolution of the Soviet Union was dominated largely by preferential ethnic return from former Soviet States, which was considered to be return migration. Iontsev and others (2010) pointed out that in the 1990s more than 7 million persons moved back to the Russian Federation mostly due to the uncertainty that followed the collapse of the former Soviet Union. The key source countries were Armenia, Azerbaijan, Georgia, Kazakhstan and Tajikistan. The sudden and large movement of people from these countries required the creation of new laws to grant the returnees refugee or forced migrant status in order to allow them access to such government services as medical care.

Starting in the mid-1990s the direction of migration to the Russian Federation maintained the same direction as previously, with migrants coming in from former Soviet States but this time with different pull factors in operation. After 1995, however, migrants coming to the Russian Federation comprised mostly titular nationalities from former Soviet States which had become members of the Commonwealth of Independent States (CIS).11 A better economic environment and less uncertainty made the

11 Members are Armenia, Belarus, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.
Russian Federation an attractive destination for neighbouring countries which also share many aspects of the history, culture, language, traditions and institutions, including for example recognized educational certificates and degrees, of the Russian Federation.

People often move due to differences in income that they expect to receive in the destination country relative to the sending country. The Russian Federation offered at least twice the standard of living relative to Ukraine, the second best-performing economy among the former Soviet States. The large difference in standard of living was also seen in average wages. Table 2 summarizes the ratios of average monthly wages and GDP per capita (in 2010 United States dollars) in the Russian Federation relative to neighbouring CIS countries in 1996 and 2007. The data in table 2 would suggest that the wages and standard of living differentials between the Russian Federation and selected CIS countries were large in the 1990s and remained high in 2007; in some cases, they even increased.

Table 2  Ratios of average monthly wages and GDP per capita between the Russian Federation and selected members of the Commonwealth of Independent States

<table>
<thead>
<tr>
<th>Country</th>
<th>Average monthly wage ratio</th>
<th>1996</th>
<th>2007</th>
<th>GDP per capita ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armenia</td>
<td>6.6</td>
<td>5.1</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>9.4</td>
<td>4.7</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td>Georgia</td>
<td>n/a</td>
<td>5.1</td>
<td>3.9</td>
<td></td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>3.8</td>
<td>10.1</td>
<td>12.8</td>
<td></td>
</tr>
<tr>
<td>Republic of Moldova</td>
<td>4.5</td>
<td>5.6</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>Tajikistan</td>
<td>30.0</td>
<td>15.7</td>
<td>15.8</td>
<td></td>
</tr>
<tr>
<td>Ukraine</td>
<td>2.1</td>
<td>3.3</td>
<td>3.3</td>
<td></td>
</tr>
</tbody>
</table>


Note: GDP per capita is constant using 2010 United States dollars.

Besides the economic pull factors suggested by table 2, the inflow of migrants was attractive to the Russian Federation because of the demographic trends it was experiencing, with a declining population throughout the 1990s on top of robust economic growth in the Russian economy in the 2000s thanks to high oil prices at that time. The average population growth rate in the Russian Federation was -0.1 per cent for the 1990s. The growth rate was for the total population, including migrants, which suggests that the growth rate of the local population was even more strongly negative (authors’ calculation using the World Bank, World Development Indicators online database).
migrants was also attractive to Russian employers, as foreign workers were relatively cheaper to employ than the local labour force because they would accept lower wages and poorer working conditions. It is important to note that the Russian Federation is also a destination for comparatively small but nonetheless significant numbers of non-CIS migrants, including those from Afghanistan, China, Poland and Viet Nam, among others, with more than half of all migrants from these countries living in Moscow and almost all (98 per cent) of them going there in order to work (Yudina, 2005).

In the light of the above discussion, table 3 has been constructed to depict the ranking of the top seven countries sending at least half a million migrants each (based on migrant stock data) to the Russian Federation in 2010 and 2013. Other countries which have a strong migrant presence in the Russian Federation include Kyrgyzstan (with slightly more than 474,000 migrants in 2010), Tajikistan (about 450,000 migrants in 2013), Georgia (more than 435,000 migrants in 2013) and the Republic of Moldova (almost 300,000 migrants in each of the two years).

<table>
<thead>
<tr>
<th>Rank</th>
<th>2010</th>
<th>2013</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ukraine</td>
<td>Ukraine</td>
<td>Ukraine</td>
</tr>
<tr>
<td>2</td>
<td>Kazakhstan</td>
<td>Kazakhstan</td>
<td>Kazakhstan</td>
</tr>
<tr>
<td>3</td>
<td>Belarus</td>
<td>Uzbekistan</td>
<td>Uzbekistan</td>
</tr>
<tr>
<td>4</td>
<td>Uzbekistan</td>
<td>Azerbaijan</td>
<td>Azerbaijan</td>
</tr>
<tr>
<td>5</td>
<td>Azerbaijan</td>
<td>Belarus</td>
<td>Belarus</td>
</tr>
<tr>
<td>6</td>
<td>Georgia</td>
<td>Kyrgyzstan</td>
<td>Kyrgyzstan</td>
</tr>
<tr>
<td>7</td>
<td>Armenia</td>
<td>Armenia</td>
<td>Armenia</td>
</tr>
</tbody>
</table>


The data in table 3 would suggest that nationals of CIS countries make up the majority of migrants in the Russian Federation, accounting for 61 per cent of the migrant stock in 2015. When Georgia, Turkmenistan and Ukraine are also considered, then the share of countries associated with CIS goes up to 95 per cent. In 2015, there were more than 11 million migrants in the Russian Federation (accounting for about 8 per cent of the total population of the Russian Federation), many of them sending money back home. In the

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14 Those countries are Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Republic of Moldova, Tajikistan and Uzbekistan.
Descriptive statistics of remittance outflows from the Russian Federation

As shown in table 1, the Russian Federation ranks third in the world in terms of the amount of remittance outflows, with the average being $27 billion annually between 2009 and 2015, reaching as high as $37 billion in 2013. Globally, the Russian Federation comes in third place behind the United States and Saudi Arabia in this regard. Figure 1 presents remittance outflows from the Russian Federation between 2000 and 2015.

Figure 1 Remittance outflows from the Russian Federation


Figure 1 would suggest that real remittance outflows from the Russian Federation initially declined in the mid-1990s, most likely due to the movement of people immediately after the collapse of the former Soviet Union. The 1990s was also a period of economic difficulty for the Russian Federation, resulting in suppressed demand for migrants and affecting their ability to remit funds abroad. However, as uncertainty dissipated and the country’s economy grew, remittance outflows surged from less than $1 billion in 2000 (the lowest level) to $35 billion in 2008. This growth was followed by a drop of almost 30 per cent in remittance flows – most likely due to the 2008 global financial crisis. Remittance outflows recovered after the crisis and reached a high of $30 billion in 2013. The data reflect a major
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Table 4 Yearly rank of top five countries receiving remittances from the Russian Federation

<table>
<thead>
<tr>
<th>Year</th>
<th>Ukraine</th>
<th>Uzbekistan</th>
<th>Tajikistan</th>
<th>Kyrgyzstan</th>
<th>Azerbaijan</th>
<th>Armenia</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1</td>
<td>n/a</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2011</td>
<td>1</td>
<td>n/a</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2012</td>
<td>1</td>
<td>n/a</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2013</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>2014</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>2015</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

Mean remittances: 3,743 5,130 2,236 1,478 1,027 984


*Data for Uzbekistan prior to 2013 were not available.

In using data on bilateral remittances, table 4 was constructed to depict the ranking of the countries receiving the most remittance outflows from the Russian Federation between 2010 and 2015.

Ukraine is the main beneficiary of remittance outflows from the Russian Federation, holding the first spot in four of the six years shown in table 4. Uzbekistan is in either first or second place starting from 2013; no data are available for Uzbekistan before 2013. In general, the data in table 4 support the previous discussion about the source of migrants coming to the Russian Federation; in other words, the destination of remittance outflows mirrors the distribution of migrants in the Russian Federation.

Figure 1 and table 4 are helpful in shedding light on the size of money transfers from the Russian Federation, but they do not offer any relative comparison of the size of the remittance outflows. In figure 2, a comparison is made of the remittance outflows from the Russian Federation to Russian foreign direct investment (FDI) by calculating the ratio of remittance outflows to FDI between 2000 and 2015. Russian FDI comprises net outflows of investment spending from the Russian Federation to the rest of the world.

15 This is most likely due to the so-called Crimean crisis in 2014 and the imposition of international sanctions, which affected the inflow of migrants who then started looking for employment in other countries, a situation that ultimately decreased remittance outflows. During the same period, crude oil prices declined from more than $90 per barrel in 2013 to less than $45 in 2015, which directly affected the Russian economy.
The average ratio of remittance outflows to FDI is about 50 per cent, with a high of 90 per cent in 2015 and low of slightly more than 30 per cent in 2000. It is important to highlight here that remittance flows, whether inflows or outflows, are the official or recorded sums of money; hence, any flows that migrants send outside of financial institutions, such as through banks and money service providers, are not recorded and therefore are not part of the World Bank remittance data or any other data. In fact, in the remittance literature it is estimated that actual remittance flows could be as high as 250 per cent of the official recorded flows (Freund and Spatafora, 2008). That said, the issue of unrecorded remittance outflows from the Russian Federation might be of less concern due to the low transaction costs for sending remittances through official channels. The global average cost of a remitting transaction of $200 between quarter 1 and quarter 4 from 2011 to 2016 (quarter 1 in 2016) was 8.4 per cent of the transaction, while it was only 2.3 per cent for remittances from the Russian Federation.16 Thus, it is still possible that total remittance outflows from the Russian Federation outweigh Russian FDI. Russian remittance outflows constitute significant flows of money to receiving countries. The next section contains a detailed discussion of the effects of remittance outflows on the Russian economy.

Effects of remittance outflows

Impact of immigration on GDP of the Russian Federation

Labour market

The statistical analysis of Russian remittance outflows starts in the 1990s for reasons pertinent both to the data available and the political changes observed in the Russian Federation. As these changes caused major rearrangements (structural breaks) in the economy, it makes more sense to concentrate on the post-1990s era.

Figure 3 Selected demographics of the Russian Federation

As shown in figure 3, the Russian Federation has a low population growth rate. It also can be observed in the same figure that the unemployment rate has come down significantly after the tumultuous early 1990s. Also, as presented in the same figure, the working-age population increased reasonably well in the mid-1990s era, but then seems to have levelled out in recent years. In similar fashion, civilian labour force participation, as shown in that figure, recovered from a steep decline in the early period of this analysis.
As shown in table 5, the migrant population in the Russian Federation increased by about 14 per cent between 1992 and 2000. In comparison with the employed population, there was also an increase in the number of migrants as opposed to all workers, since that ratio rose from 15 per cent to 18 per cent. This would assume that all migrants had joined the labour force; however, this is probably not a reliable assumption. That is why it is safe to say that the migrant-to-civilian employment ratio is larger than a comparable ratio which replaces employment with the total population. Better yet, it would be more sensible to compare the working portions of the population of local and migrant workers. Unfortunately, such data on the working immigrant labour force in the Russian Federation are not available.

Table 5  Migrants in the Russian Federation

<table>
<thead>
<tr>
<th>Year</th>
<th>Migrants</th>
<th>Migrants/N (percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>10 574 579</td>
<td>15</td>
</tr>
<tr>
<td>2000</td>
<td>12 053 167</td>
<td>18</td>
</tr>
</tbody>
</table>


Note: N stands for number of people employed. Migrants represent the sum of all immigrants in the Russian Federation in a given year.

On the financial side, time series plots of remittance flows are shown in figure 4. Although both of them show an upward trend over time, the increase in remittance outflows is pronouncedly higher than that of the remittance inflows. As a matter of fact, during the entire period, on average 2.8 times more remittances left the country in comparison with the amount that came into the country. Even though the 2008 financial crisis appears to have slowed remittance outflows, the data show that those outflows quickly picked up after 2010, when they reached about five times the amount of inflows. In other words, remittance outflows from the Russian economy are significant.

17 For migrants, the 1992 data are actually from 1990.
18 The authors would like to thank a referee who pointed out that probably “a significant proportion of these migrants are likely to be ethnic Russians who are not sending any money back to their countries of origin as they have no ties to them”.
19 Nevertheless, based only on the data provided by Ryazantsev (2016), the documents issued to migrant workers in the Russian Federation continuously increased over time since the mid-1990s, with a slight decline in the aftermath of the 2008 global financial crisis. Although these data do not precisely state the number of foreign workers (only the documents issued to all foreign entities, including corporations), it is not possible directly to make any claims concerning the migrant workers in the country. The only matter that can be deduced, however, is that the so-called upward trend indicted above is supported by this specific dataset as well.
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Figure 4 Russian remittance inflows and outflows, with remittances representing compensation of employees, and personal transfers and credit

(Millions of United States dollars)


Analysis of the Russian economy

In this subsection, the drivers of the Russian economy are analysed via a number of techniques, such as growth accounting and econometric methods. Ideally, the analysis would bring forth the contribution of immigration to the economy alongside other factors. The principal impediment is the lack of adequate data needed to undertake such a disaggregation exercise.

Growth accounting

GDP of the Russian Federation on a per capita basis is shown in figure 5. It may be observed that per capita GDP declined somewhat in the aftermath of the political developments of the early 1990s, but recovered significantly thereafter until the start of the recent global financial crisis. It also bounced back relatively swiftly following the end of the crisis. Following this recovery, however, other international disturbances, mainly lower oil prices, had a drastic impact on the per capita GDP of the country. Most recent data
point to a decline in per capita GDP at levels close to the post-2008 crisis-era figures. In other words, the economy experienced a much sharper decline in the recent episode than during the time of the financial crisis.20

Figure 5  Per capita GDP of the Russian Federation

Although the above analysis tracks the trajectory of per capita GDP in the economy, it does not provide information about the proportional contribution of market participants. It is therefore necessary to decompose a measure of national output, such as GDP, in terms of its inputs of production, a process called growth accounting. A demonstration of growth accounting can be found in Kangasniemi and others (2009). The income decomposition is represented in a fashion similar to that used by those authors, as follows:

\[
\frac{Y}{\text{GDP}_{pc}} = \frac{\text{Adults}}{\text{Pop}} \cdot \frac{\text{LFP}}{\text{Adults}} \cdot \frac{N}{LFP} \cdot \frac{Y}{N}
\]

where \(Y\) stands for GDP; \(\text{Pop}\), for the population; and \(\text{LFP}\), for labour force participation. In other words, \(\text{LFP}\) represents the economically active population in the country. \(\text{Adults}\) denote the number of people between the ages of 16 and 64 years, who comprise the working-age population.

20 Another issue closely related to remittance outflows is the trajectory that the Russian currency took during the period studied. The depreciation of the currency led to declines in remittance outflows in terms of United States dollars (Ratha and others, 2016).
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Employed people are denoted by N in equation 1. Additionally, ALP stands for average labour productivity. This decomposition assigns economic growth to factors related to demography on one hand and labour productivity on the other. Demographic factors comprise age, activity and employment inputs. While the “age” variable shows the proportion of adults in the population, from which workers can be drawn, the “activity” variable represents the economically active people among those adults. The “employment” variable on the other hand shows the actual employment of people who are actively looking for a job or have a job. Lastly, the ALP variable can be seen as a rather crude measure of the productivity of the labour force. Empirically speaking, “population” includes everybody in the country; “adults” are those in the population who are between 15 and 64 years of age; “LFP” comprises the civilian labour force; and “N” stands for the number in employment. All data pertinent to these variables are from the Organisation for Economic Co-operation and Development (OECD) database. In brief, this expression demonstrates that the quantity of goods and services that each individual in the country can produce depends on the demographic characteristics of the society, representing how willing individuals are to participate in economic activities, and once they are engaged, how productive they are. Figure 5 depicts the left-hand side of equation 1. The graph of the all variables under demography, however, is shown in figure 6.

Figure 6  Demographic characteristics of the Russian Federation


Note: Variables are as described in the text. The vertical axis represents contributions to GDP per capita by the variables shown in the graph in percentages.
Unsurprisingly, among all the demographic variables, employment (N/LFP) has the most significant impact on the per capita income in the economy. It is understandable that, in a fashion similar to per capita GDP, the “employment” variable first dipped in the late 1990s and picked up later but levelled out in recent years. In other words, for the continuous development of the Russian economy, the most active section of the society, that represented by N/LFP, should play an ever-increasing role in the growth of GDP. “Activity”, which tracks the willingness of adults to join the labour market, follows a similar trajectory as the “employment” variable, a situation which may call for policy action in terms of encouraging labour market participation in the country. Another observation is about the “age” variable; it shows the ratio of adults in the population. This ratio has increased slightly ever since the beginning of the 1990s.

Figure 7  Average labour productivity of working-age population

While demographic factors play an important role in economic growth, the place that labour productivity occupies is most certainly indispensable. As a matter of fact, as shown in figure 7, despite a flat line throughout the 1990s, average labour productivity rose steeply in many years during the 2000s. A visual comparison of figures 5 and 7 reveals the stark similarity between the per capita GDP and the average labour productivity in the Russian Federation. This similarity alone illustrates the importance of labour productivity in the economy. Equation 1 has thus been rewritten as follows:

$$\frac{Y}{Pop} = \frac{N}{Pop} \frac{Y}{N}.$$
In other words, equation 2 simplifies all the demographic components of equation 1 into $N/\text{Pop}$. In the same spirit as equation 1, equation 2 states that the quantity of goods and services that each person can consume depends on: (a) the share of people working, $N/\text{Pop}$; and (b) how much each worker produces, $Y/N$, which is ALP.

**Figure 8 Average labour productivity vs. GDP per worker**

It is obvious from figure 8 that, despite the steady decline in the share of people working in the economy since the early 2000s, average labour productivity has been the locomotive of economic growth. It is for this reason that the recent downturn in labour productivity has become worrisome.

At this stage, in going back to the discussion on remittances, a proportional representation of remittance flows in the Russian economy with respect to GDP is shown in figure 9. First of all, it may be observed that the graphs in figures 7 and 4 are similar to each other, which means that remittances in the Russian Federation are closely related to the economic performance of the country. As GDP increases so do remittance outflows with respect to GDP. That means that the better off the Russian economy is, the more attractive it becomes to foreign workers. In other words, the increase in remittances could come from improved economic fortunes of migrants, such as higher wages and/or higher levels of employment. On the other hand, an inverse relationship between GDP and remittance inflows is also observed in the graphs. Combined with observations made on figure 4, all these graphs indicate that the remittance inflows have become more pronounced in the more recent part of the period studied, when the Russian economy experienced difficulties, largely due to declining global energy prices.
In general, remittance flows are still quite small in comparison with the overall Russian economy. Even though there has been an upward trend overall, remittance outflows are still less than 2 per cent of Russian GDP. To put this figure into perspective, in 2015 the ratio of remittance outflows from the Russian Federation with respect to GDP was about 1.5 per cent, whereas the average of such statistics obtained from 110 countries was about 1.8 per cent. In the same year, this figure was about 6 per cent for Saudi Arabia. The impact of remittance outflows from the Russian Federation to certain former Soviet States, however, is quite strong as noted above in such countries as Kyrgyzstan and Tajikistan, as well as Armenia and the Republic of Moldova, where remittances account for about 9 and 8 per cent of GDP respectively. If all the immigrants who are part of the labour force and therefore working are counted – but not their non-working dependents – they would make up less than 2 per cent of the workers. Thus, there is a good match between the proportion of foreign workers in the labour force and what they earn. It should be mentioned that it is also assumed that foreign workers would remit all of what they earn. As a continuous time series regarding the number of foreign workers in the Russian labour force is not available, the data in figure 5 are used to make that judgment. Another reasonable comparison could be of the one between foreign workers and the total population. Again, to give an idea about what is meant, in table 6 the ratio of

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Figure 9 Remittance inflows and outflows vs. GDP


Note: Remittances represent compensation of employees and personal transfers and credit (in millions of United States dollars).
migrants among the whole population of the Russian Federation is presented on a decadal basis. While the first three decades are outside of the period under review, it is easy to observe that the trend is sloping upward. Not only that, in 1990 and 2000 the ratio of migrants was about 8 per cent of the total population. Therefore, the proportion of remittances in GDP is far less than the number of migrants in the entire population. If this is a fairer assumption than what is presented in table 5, then one could say that foreign workers take out of the country much less than their “fair” share of the economic output. In other words, Russian citizens benefit greatly from having foreign workers in the country. It should be added that this discussion depends heavily on the aforementioned assumptions.

Table 6 Ratio of migrants to total population

<table>
<thead>
<tr>
<th>Year</th>
<th>Migrants/population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>5.14</td>
</tr>
<tr>
<td>1970</td>
<td>5.61</td>
</tr>
<tr>
<td>1980</td>
<td>5.95</td>
</tr>
<tr>
<td>1990</td>
<td>7.15</td>
</tr>
<tr>
<td>2000</td>
<td>8.22</td>
</tr>
</tbody>
</table>


Econometric analysis

In this section, focus is given to a quantitative analysis of the contributors to Russian GDP with the help of parametric methods used in econometrics. The basis of the analysis comes from the unit production function, as expressed in equation 3 below:

\[ y_t = A_t k_t^a \]  

where \( y \) is the output per person, \( A \) is a measure of the stock of technology and \( k \) is the per capita capital stock. Here \( a \) represents the share of per capita capital in economy \( y \). In other words, it is the profit share. It is assumed that technology evolves according to \( A_t = A_0 e^{gT} \) where \( A_0 \) is the initial stock of capital, \( g \) can be interpreted as the total factor productivity, and \( T \) is the time trend. As in Kumar (2013), it is assumed that technology is a function of certain financial variables, such as remittances and credit measures. Further assuming that, \( A_t = A_0 e^{gT} REM_t FDI_t CRED_t ODA_t \), where \( REM \) stands for remittances as a percentage of GDP, \( FDI \) for foreign direct investment as a percentage of GDP, \( CRED \) for credit as a percentage of GDP and \( ODA \) for official development assistance as a percentage of GDP, the per capita production function can be rewritten as:
Finally, this leads to the estimation as follows:

\[ y_t = \left( A_0 e^{\theta T} \beta^{REM_t} \gamma^{FDI_t} \delta^{CRED_t} \gamma^{ODA_t} \right) k_t^g. \]

As an alternative modelling strategy, capital can be considered as a function of investment in some financial variables as the sources of investments in an economy. Not only does this approach help eliminate the likelihood of multicollinearity among capital and some of the right-hand side variables in the previously specified models, but it also treats technology as a residual variable in line with the original idea of Solow (1956). This notion would be operationalized by readjusting the above estimation equation as follows:

\[ \log (y_t) = B + T + \beta^{REM_t} + \gamma^{FDI_t} + \delta^{CRED_t} + \gamma^{ODA_t} + a\log (k_t), \]

where \( B = A_0 + g. \)

In estimations, in addition to the variables explained previously, gross capital formation (percentage of GDP) is used for \( k_t \), foreign direct investment, net inflows (balance of payments, current United States dollars) for FDI, net official development assistance and official aid received (current United States dollars) are used for ODA, and domestic credit provided by the financial sector (percentage of GDP) are used for CRED. Data for these variables are from the World Bank, and the estimation period is 1990-2015.

However, estimations which include ODA seriously hamper the quality of results due to the very short data span; thus, they are not reported here. The time trend has also been dropped to eliminate putting all the weight on it in the small dataset that is available. Likewise, experiments are carried out with remittance flows in the estimations. That is, sometimes both flows are included, and other times just those in one direction. Both directions of flows are included because there are definitely lessons to be learned – and perhaps policies to be formulated – about the issues related to both remittance inflows and outflows. Under these considerations, the results obtained are presented in table 7. Readers should be aware that all of the econometric results should be treated with caution as the generally short data span may have substantial effects on the results obtained. That having been said, it can be seen that remittance inflows play no statistically significant role in the determination of per capita output in the country irrespective of the way they are entered into the estimation equations. The same observation obtains in the case of remittance outflows as well. In other words, remittance outflows also do not have a statistically significant effect on GDP. On the other hand, other financial variables, such as FDI and domestic credit provided by the financial sector, play influential and positive roles in the economy. By the same token, gross capital formation has a statistically positive impact on the income of the economy. As a matter of fact, capital has the largest impact on GDP as far as quantitative magnitudes are concerned.
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Table 7 Various GDP models

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coef</td>
<td>P</td>
<td>Coef</td>
<td>P</td>
</tr>
<tr>
<td>Constant</td>
<td>-4.59</td>
<td>0.60</td>
<td>-1.32</td>
</tr>
<tr>
<td>Remittances Inflow</td>
<td>0.21</td>
<td>0.41</td>
<td>0.11</td>
</tr>
<tr>
<td>Remittances Outflow</td>
<td>0.21</td>
<td>0.33</td>
<td>0.13</td>
</tr>
<tr>
<td>FDI</td>
<td>0.48</td>
<td>0.00</td>
<td>0.41</td>
</tr>
<tr>
<td>Credit</td>
<td>1.16</td>
<td>0.00</td>
<td>0.86</td>
</tr>
<tr>
<td>Capitala</td>
<td>2.02</td>
<td>0.00</td>
<td>1.75</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.95</td>
<td>0.96</td>
<td>0.96</td>
</tr>
</tbody>
</table>

Note: The dependent variable is per capita GDP. The estimation period is 1990-2015, i.e. 21 observations after adjustments. Coef stands for the estimated coefficient and P for the probability value. A P value of less than 0.05 means that the coefficient is statistically significant at the 95 per cent confidence interval. FDI means foreign direct investment. Adj. R² stands for adjusted r-squared, or coefficient of determination.

a For model 4 there is no capital per se; capital is treated as a function of other financial variables to eliminate the possibility of the aforementioned multicollinearity.

Model 4 in the table represents the results of estimating the model of equation 6 above. That model, where capital is considered as a function of financial variables, yields remittance outflows that significantly and positively contribute to the country’s GDP. Nevertheless, it renders all other variables insignificant. Thus, it is suspected that this is probably not the most appropriate form for estimating Russian GDP under the given conditions, that is, in the light of the data restrictions alluded to above.

The authors believe that all of these results make intuitive sense (excluding model 4). For example, given that the Russian economy is a large one, remittance flows are not all that substantial in terms of GDP. FDI and credit opportunities are known to have a positive influence on economic development in all economies, which is why many Governments are trying to incentivize capital owners all over the world to locate in their countries. Furthermore, the more capital an economy has on a per capita basis, the higher would be its expected output. These expectations are also confirmed via the results for the Russian economy.21

Conclusion and policy recommendations

Remittance outflows and their effects have received little attention from both the academic and international organization communities. As much as

21 One dimension of the effects of remittance outflows on the Russian economy – not examined in this article – is that money flows from the Russian Federation might actually boost spending on Russian exports. All top Russian remittance-receiving economies have the Russian Federation as a main trading partner; hence, Russian remittance outflows are expected to be part of export revenues earned by the Russian Federation.
remittance inflows have gained attention from policymakers in the last two decades, little is known concerning the role that remittance outflows play in the sending economies. The Russian Federation is consistently one of the top three remitting countries in the world in terms of the volume of remittance outflows. In general, Russian remittance outflows have averaged $27 billion annually in the last six years. If one takes into consideration unrecorded remittance flows, then this average most likely is much higher, possibly twice as high. With such large money leakages from the sending economies, it is important to consider the economic impact of money transfers. The following summarizes the findings of this study and includes a set of policy recommendations:

(a) To better understand the effects of remittance outflows on sending economies, better data are needed. While this is true for migration and remittance flows in general, it is ever more pressing for remittance outflows. According to the World Bank, global remittance inflows for 2013 and 2014 were $571 billion and $591 billion respectively. The same data source places global remittance outflows at $412 billion and $419 billion respectively. The difference between inflows and outflows is at least $159 billion, which is a reflection of the international effort to track down remittance inflows. The same degree of effort is needed on the sending side. The data argument is even more pressing in the case of the Russian Federation. For instance, further attention may be drawn to the fact that monetary flows from commercial transactions across borders between the Russian Federation and neighbouring countries are being marked as personal and hence recorded as remittance flows. Better data quality is crucial for conducting studies on the impact of migration and remittances;

(b) Productivity is a very important aspect of Russian economic growth. Average labour productivity, however, is in decline in the Russian Federation. Sustained economic growth calls for more effort to attract and retain a more qualified workforce from abroad while also trying to improve the productivity of the local labour force;

(c) Remittance outflows may be controversial in political discussions as they are considered leakages from the local economy. Opponents of the free flow of remittances push for impediments to be erected against remittance outflows. Given the relatively small size of remittance outflows in the Russian Federation, however, it would not seem that that stage has been reached yet. Nonetheless, it would be advisable to act pre-emptively and encourage foreign labour to consider investment options in the local economy. To do that, the Government should provide opportunities for foreigners to keep their earnings in the country, which would of course necessitate legal arrangements, such as granting investment

incentives for foreigners in the form of income tax benefits, as well as some form of permanent residence and/or citizenship, perhaps for highly skilled migrants. This should be relatively easily done for highly skilled labour, although not necessarily for low-skilled labour;

(d) In relative terms, the Russian Federation is a large economy but it has a low population growth rate. Therefore, if current conditions are maintained, the Russian Federation will need to import more labour in the future. Although the proportion of remittance outflows is still small today, they should be expected to grow in the future. Preparing for the realization of this expectation would require well-coordinated and Government-sanctioned data collection on all aspects of the economy, especially regarding foreign labour movements and remittance flows. Such data should also be widely disseminated. Indeed, a significant limitation of this study has been the difficulty of accessing data;

(e) Finally, to better understand the effects of remittance outflows on the Russian economy, the Russian Federation should also work on tackling the unrecorded dimension of remittance outflows in addition to generating better data on the main macroeconomic variables. A better measurement of remittance flows would enable a clearer sense of their size and ultimately a more accurate measure of their effects on the local economy.
References


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