Abduvaliev, M., & Bustillo, R. (2019). *Impact of remittances on economic growth and poverty reduction amongst CIS countries*. **Post-Communist Economies**, 32(4), 525–546. This is an Accepted Manuscript of an article published by Taylor & Francis in **Post-Communist Economies** on 13 Nov 2019, available at: https://doi.org/10.1080/14631377.2019.1678094.

Impact of remittances on economic growth and poverty reduction amongst CIS countries

Abstract

The main goal of this paper is to assess the effect of remittances on economic growth and poverty reduction amongst the post-Soviet states, compared with other external sources of capital, such as foreign aid and foreign direct investment. In this paper we use a panel data set on economic growth and poverty estimates (poverty headcount, poverty gap and poverty severity) in 10 selected former post-Soviet republics i.e. Commonwealth of Independent States (CIS). We found that, on average, a 1% increase in remittance flows provokes around a 0.25% rise in per capita GDP and a 2% decline in poverty severity. Remittances seem to have produced a significant reduction on poverty through increasing income and smoothing consumption levels.

Authors:

Abduvaliev, Mubinzhon	University of the Basque Country, UPV/EHU
Bustillo, Ricardo	University of the Basque Country, UPV/EHU

Key words
Commonwealth of Independent States, remittances inflows, poverty measures

JEL Classification

F14, F15

1. Introduction.

International migration still appears to be one of the most important issues of the global agenda, since it generates enormous economic, social and cultural repercussions in both sending and receiving countries. Over one billion people in the world (more than one in seven people) are migrants (International Organization of Migration, 2015). Over the recent three decades, payments made by migrants abroad to their families in their home countries, known as *remittances*, are attracting increasing attention because of their rising volume, as well as their effect on the destination countries. The volume of remittances and compensation for employees received by developing countries has grown dramatically, from around US$400 million in 1970 to US$440 billion in 2015 (World Development Indicators WDI, 2008, 2016). The most relevant destinations for international remittances were India, Philippines, Mexico, Nigeria, Egypt, Pakistan and Ukraine, whereas amongst remittances' source countries, USA, Russia, Saudi Arabia and Switzerland are the leaders (WDI, 2015).

Amongst developing countries, remittances have to be considered as the most stable type of financial foreign currency inflow (Gupta et al., 2007). For many developing countries, remittances' revenue exceeds foreign direct investment, official development assistance (ODA) and portfolio equity inflows (Chami et al., 2008).

Moreover, total remittances could be 50% higher than official estimates when those sent through informal channels are included (World Bank, 2006). In some cases, earnings submitted by international migrants constitute a significant portion of a country's GDP: from 15–20% in Tonga, Lesotho, Albania, and Yemen up to 25–41% in Liberia, Moldova, Nepal, Kyrgyzstan or Tajikistan (WDI, 2015).

Regarding the economic destination of remittances, they are mostly spent on consumption expenditure, rather than on productive investment. Therefore, their contribution to an increase in productivity and economic growth depends on the careful allocation of this money (Catrinescu et al., 2006). Consequently, the utilization of remittances revenues by households plays a crucial role in their impact on growth.

Amongst the positive effects of remittances, we can mention not only poverty alleviation, but also that it allows for smoother patterns of consumption, which provoke a multiplier effect on aggregate demand and output (Acosta et al., 2007). Recipient households can use remittances to finance current consumption, asset accumulation, human capital formation or to serve as insurance (Yang and Martinez, 2006), whereas development loans (Official Development Assistance, ODA) are more expensive since they force the user to pay interest rates. Moreover, remittances transferred through either formal or informal channels by migrants prevent the

government from wasting those resources, as often happens with ODA (Sander, 2004; Pieke et al., 2005).

Several recent studies have analysed household investments in human capital development amongst developing countries by proving the existence of a correlation between remittances and child education (Lopez-Cordova, 2004). However, remittances' effects might not last in the long-run for households, particularly if they do not properly invest them. Furthermore, international migration of either skilled or unskilled labourers has a different opportunity cost, i.e. skilled labour refers to that which requires workers who have acquired specialized training or have learned a skill-set required to perform the work. According to the Statistic Committee of the Republic of Tajikistan (2016), one-third of Tajik migrants are holders of a secondary professional or higher education degree, a particular feature that increases migration opportunity costs.

However, few studies have analysed amongst developing economies the link between migration and skilled-unskilled wage inequality. It is important to note that unskilled labour that emigrates and returns to their countries of origin after a few years might bring back useful skills acquired abroad (Romer, 1991). However, the brain drain caused by the migration of highly skilled workers from developing countries is especially harmful for two reasons. Firstly, skilled workers are relatively less abundant in developing countries and consequently, their relocation to other countries could have a negative effect on productivity and economic growth (Sharipov, 2012). Secondly, government investment in their education is costly, and in case they do not come back to their home country, the return of investment in public education would fall (Isomatov, 2010).

Despite the increasing importance of remittances over total international capital flows, the relationship between remittances and growth amongst Commonwealth of Independent States (CIS)[1] countries has not so far been adequately studied.

This study is the first to measure the impact of remittances on economic growth and poverty reduction in 10 selected former post-Soviet republics, i.e. ten CIS countries, using panel data to analyse the period 1997–2016. Our hypotheses are tested utilizing the random-effect, fixed-effects and least squares model with and without instrumental variables. Moreover, we test the extent to which CIS countries' growth was associated with Russian economic performance through the remittances channel.

As we attempt to assess the effect of remittances on per capita GDP and poverty levels, we are going to test the two following hypotheses:

[1] Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

H1: The volume of remittances is positively associated with a higher standard of living (higher per capita GDP).

H2: The volume of remittances is positively associated with poverty reduction.

The remainder of the article proceeds as follows: Section 2 provides a comprehensive literature survey, whilst Section 3 discusses the basic features of remittances amongst CIS countries. Section 4 presents the econometric estimation and the expected signs of the utilized variables, whereas Section 5 describes the variables, sources as well as data used in the analysis. In Section 6 we examine the main results obtained in the empirical research. Last but not least, Section 8 concludes the paper.

2. Literature review.

Remittances are usually measured utilizing three variables: workers' remittances, employee compensation and migrant transfers (Serino et al., 2011). A common practice amongst researchers studying the effects of remittances is to sum all these three components and consider the sum as the level of remittances. In spite of the benefits of each of these individual three different categories, workers' remittances' total amount is the best estimation for the financial inflows due to migrants' labour activity abroad.

Over the last few decades, the most studied aspect of remittances has been their impact on economic growth, not only because of their political relevance but also due to the numerous ways through which remittances might affect economic growth. Amongst studies supporting an optimistic view regarding remittances effect on growth, firstly Chami et al. (2008), who used panel data of 157 countries over the period 1990–2005, stated that remittances have a significant effect on welfare and economic growth, reduce the country risk, improve the sustainability of government debt and increase household savings in recipient countries. Adelman and Taylor (1990, pp. 387–407) found that "every dollar Mexican migrants send back home increases Mexico's GNP from $2.69 up to $3.17, depending on which household income group received the remittances". Glytsos et al. (2005), in their empirical results, report that a decrease in remittances slows down economic growth more severely than an increase speeds it up, in reference to Egypt, Greece, Morocco and Portugal. Additionally, Sufian et al. (2008), using panel data for the period 1975–2006, confirmed the existence of a positive relationship between remittances and GDP per capita growth amongst Middle Eastern and North African countries. Furthermore,

Fayissa and Nsiah (2010), analysing an unbalanced panel data spanning from 1980 to 2004 for 37 African countries, found that a 10% increase of remittances would lead to a 0.3% rise in GDP per capita.

Evidence from around the globe suggests that remittances should be directed towards investment, such as in small businesses aimed at improving a country's production base. On average, around 10% of remittances are found to be saved and invested. For instance, in Ghana and Guatemala, about one-third of remittances are used in order to start small businesses and house construction (UNCTAD, 2012, pp. 11–13). Massey et al. (1998), who studied 30 communities in West-Central Mexico, concluded that earnings from labour in the United States provided an important source for start-up capital in 21% of new business creation. Woodruff and Zenteno (2001), who affirm that remittances are responsible for almost 20% of the capital invested in microenterprises throughout urban Mexico, have also found such positive effect. More precisely, McCormick and Wahba (2001), using a survey of 1,526 Egyptian migrants in 1988, found that the majority of migrants who worked and earned money abroad became entrepreneurs, self-employed or business owners in Egypt.

Partly correcting the above-mentioned results, several studies highlight the crucial role of institutions on the relationship between remittances and economic growth. Remittances tend to boost economic growth only when social institutions are better developed (Chami et al., 2003). Nevertheless, surprisingly very little empirical work would come even close to analysing the interplay amongst these three factors. Faini (2002) claimed that the positive effect of remittances on economic growth might be found when there is an improvement of productive infrastructure, a reduction in uncertainty and an accumulation of households' assets. Ratha (2003) found that during 1996–2000, countries with an average level of corruption received remittances that averaged 0.5% of GDP, compared to 1.98% for those with higher levels of corruption. More precisely, Catrinescu et al. (2006), after analysing 163 countries over the period 1970–2003, assert that institutions play a key role in encouraging remittances' positive influence on economic growth.

The next group of world evidence suggests that remittances promote human capital accumulation in recipient countries by enabling younger members of households to continue schooling rather than having to work to contribute to household income. Recent studies have proved a positive and significant correlation between remittances and human capital accumulation in some developing countries (Kwok and Leland, 1982; Vidal, 1998; Hanson and Woodru, 2002; Barajas et al., 2009. Authors argue that the first possible link between remittances and education is through repayment of loans used to finance educational investments (Bhagwati and Hamada, 1974; Mansoor and Quillin, 2006), showing that the prospects of migration

make education a profitable investment for the family. Hence, remittances might be positively correlated with human capital accumulation when most migrants come back to their origin countries. Beine et al. (2001), using panel data for 127 countries, showed that countries with initially low levels of human capital and low migration rates enjoy from higher human capital stock growth rates. They also affirm that in origin countries with more than 20% of highly educated migration, where highly educated people are above 5%, brain drain is very likely to happen. Moreover, Stark and Wang (2001) and Cinar and Docquier (2004) claim that with the incentive to acquire education, brain drain may even affect positively migrants' sending economies, if labour migrants acquired additional knowledge abroad and the result is the creation of a business or a trade network in the country of origin. A recent empirical result on the impact of remittances on human capital has been found by Azizi (2017), using data for 125 developing countries from 1990 to 2015: this author concludes that a 10% increase in remittances will lead to a 3% increase in public school enrolment, 2% in private school enrolment and 1.1% in school completion rate.

However, despite the large amount of evidence defending the positive and statistically significant effect of remittances on economic growth and human capital accumulation, some empirical papers deny the positive impact of remittances on the macroeconomic performance of recipient countries. For instance, a negligible effect of remittances on economic growth is found in the studies of Spatafora (2005), where the author states that there is no direct link between real per capita output growth and remittances. Additionally, Chami et al. (2008), using panel data for 113 developing countries, find that remittances have a negative effect on economic growth. Habib and Nourin (2006), who utilize a data panel set for South East Asian economies over 1996–2005, have also described a similar negative effect of remittances on economic growth. This study suggests that there is a negative relationship between migrant remittances and per capita GDP growth in Thailand, Sri Lanka, India and Indonesia, whereas this relationship is positive in Bangladesh, Pakistan and Philippines. Moreover, Barajas et al. (2009), using a dataset for 84 recipient countries covering the period from 1970 to 2004, claimed that there is an insignificant effect of remittances on economic growth**.**

Regarding the size and the education level of international migration, the brain drain is now much more extensive than it was three decades ago (Frederic et al., 2000). The extra education gained by the younger members of households would likely have little effect on domestic economic growth if these educated younger members were to emigrate. Haque and Jahangir (1999) indicate that the number of skilled emigrants from Africa increased from 1,800 in 1960 to 23,000 in 1987, whereas the United States Immigration Act (2008) indicates that highly educated people amongst immigrants

increased from 110,200 a year in 1992 to 465,120 in 2006. It is not surprising that CIS countries have also experienced brain drain specific effects in recent years. In 2006 Russia implemented a new program, the so-called "Resettlement program compatriots in Russia" (Federal Migration Services of Russia, June 2006), which is aimed at attracting skilled labour from post-Soviet states, resulting in more than 600,000 families relocating to Russia since 2010 (Federal Migration Services of Russia, 2016).

Apart from the controversial relationship between remittances and growth, many studies have also examined the link between remittances and poverty reduction. For instance, Adams and Page (2005) studied a set of 71 developing countries, finding that a 10% increase of migrant remittances leads to a 1.9% decline in the level of poverty. Lopez-Cordova (2006), using 1,782 Mexican households in 2003, found that a 10% increase the share of remittances over GDP led to a 0.77% reduction of people living under headcount poverty and a 0.53% fall of people living under squared poverty and poverty gap.

Jongwanich (2007) strongly remarks that remittances do have a significant impact on poverty reduction and economic growth through human capital accumulation, increasing income, smoothing consumption and easing capital constraints to domestic investment. He used panel data, employing a Generalized Method of Moments procedure to estimate the impact of remittances on economic growth and investment for 17 Asian and Pacific countries for the period 1993–2003, finding a positive effect. Similarly, Acosta et al. (2007) studied the relationship between remittances, poverty and inequality using a panel of data for 59 Latin American and Caribbean countries during 1970–2000, and they conclude that remittances reduce poverty and inequality. According to Abdih et al. (2012), remittances keep many people out of poverty by enabling them to consume more than they could otherwise, in particular to maintain a higher level of consumption during economic adversity.

However, a number of authors are concerned about the income effect of remittances, according to which people could afford to work less and therefore this would diminish the labour supply, hence creating a moral hazard for recipient countries for two reasons. Firstly, the moral hazard impact appears at the household level, particularly when the migrant's family members reduce their work efforts after enjoying higher wage-earning opportunities in labour-receiving countries (Harris and Todaro, 1970; Mansoor and Quillin, 2006,). Secondly, a different kind of moral hazard occurs at the state level when remittances benefits reduce the pressure on the government to apply reforms, i.e. remittances pose a moral hazard problem by reducing political reform. Whilst "compensatory remittances that ensure the public

against adverse economic shocks and insulate them from government policy reduce households' incentives to pressure the government to implement reforms to facilitate economic growth" (Shera and Meyer, 2013). Chami et al. (2003) emphasize that remittances may hinder governments' incentives to maintain fiscal policy discipline, and assert that governments may take advantage of the fiscal space afforded by private consumption financed with remittances. Similarly, Barajas et al. (2009), employing panel data for 115 developing countries, suggest as well that remittances have a negative effect on governance incentives. Barajas et al. (2012), focusing on the relationship between remittances and government policies, conclude that remittances reduce public spending in countries with governance issues. In other words, public subsidies can be replaced by remittances that will work as private subsidies, and therefore "households will not have the incentive to monitor the government and exert pressure on it for change when they are insured through remittances" (Ebeke et al., 2013, pp. 6-9). Another group of authors claims that the negative effect can be produced when remittance inflows trigger an increase in households' income, which leads to a rise of aggregate demand when part of demand is oriented to non-tradable goods. Hence, higher demand can imply a rise in inflation, the so-called *Dutch Disease* (Acosta et al., 2007). Supporting such evidence, Chami et al. (2008), using panel data for 113 countries over the period 1970-1998, conclude that remittances differ greatly from private flows in terms of motivation and they do not appear to be a significant source of capital for economic development, since they could reduce economic growth through a Dutch Disease effect.

To summarize, regarding the literature about the effect of remittances on economic development, we find that experts' evidence on the issue is ambiguous. A large number of authors has proved the positive effects of remittances; hence, our hypothesis would be empirically confirmed. The long- or short-term effect of remittances depends on the extent to which households use them productively. We perceive that both skilled and unskilled migration play a crucial role in the economy, as they have a different opportunity cost for both origin and destination countries. Remittances raise the standard of living of recipient countries through facilitating investment in children's education and human capital formation, increasing consumption, reducing income inequality and poverty level, taking into account their institutional framework. In spite of the positive effects of remittances, the negative effects should not be disregarded, as potential costs of remittances requirements ease pressure on governments for implementing the reforms that reduce external imbalances and labour effort, which thereby increases the level of moral hazard amongst recipient countries. This is why we utilize panel data for CIS countries in order

to check empirically whether remittances enhance economic growth and/or reduce the level of poverty.

3. Stylized facts regarding remittances amongst CIS countries.

In 2015, the World Bank estimated that total world remittance flows reached $438 billion, from which over a fifth (22%) corresponds to transition economies, and almost 11% to the CIS economies.

Before exploring the scenario where migration flows amongst CIS countries are located, let us analyse some of the literature regarding the current tendencies of the closest to the European Union (EU) CIS countries, i.e. Eastern European countries (Belarus, Moldova and Ukraine). Some authors assert that there is a pattern of East-West migration from Eastern European countries to the EU. For instance, Jelínková et al. (2011) found that people from Belarus, Moldova and Ukraine did not migrate for ethical and political reasons, but rather mainly due to economic ones. Supporting Jelínková's idea, Čajka et al. (2014) looked more precisely at the problem, using panel data for Eastern European states (EES) working either in the Visegrad group (V4[2]) countries or in the rest of European Union Member States (EU MS) in cases of visa abolition over the period 2008–2012. They concluded that migrants from Belarus, Moldova and Ukraine are moving to work in the EU Member States as seasonal workers and do not intend to live in the EU, as their main motivation for working in EU countries is the wage gap, i.e. the main effects are pull factors but not push factors. Moreover, based on their empirical results, they affirm that a "visa abolition is not going to dramatically increase migration to the Eastern European countries in the EU Member States" (Čajka et al., 2014, pp. 15–26).

Moreover, Leon-Ledesma and Piracha (2006) concluded that remittances and skills acquired by migrants from Belarus, Moldova and Ukraine in the EU MS can be quickly used in their source economy upon their return to their home country and that such scenario is similar to the situation between Russian and Central Asian countries' migration stocks. Russia, as the main destination for migrants from the CIS region, accumulates 88% of CIS migrants (CISSTAT, 2016), where Armenia, Azerbaijan, Belarus, Georgia, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Uzbekistan and Ukraine are

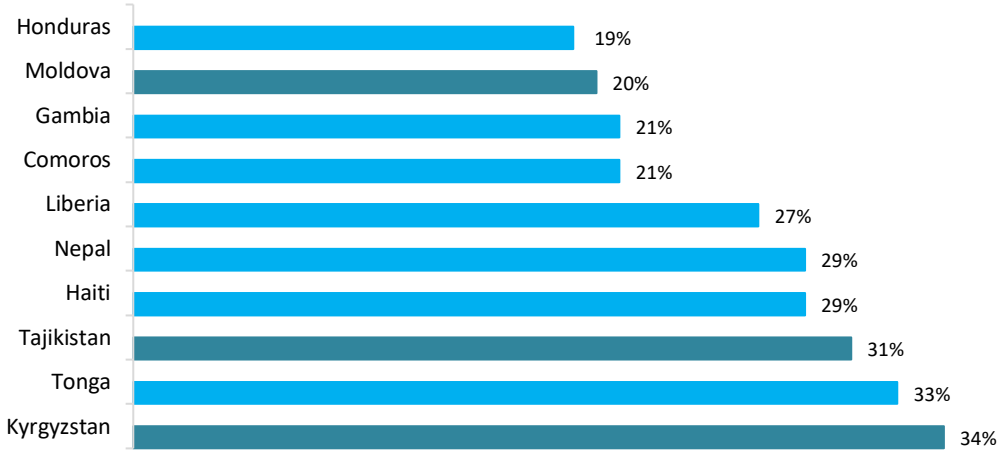
[2] The Visegrad Group or V4 is a cultural and political alliance of four Central European states - the Czech Republic, Hungary, Poland and Slovakia.

net remittances-receiving countries. Kazakhstan is also a main destination for migrants from the CIS region, particularly from Kyrgyzstan and Uzbekistan, but it is not as significant as Russia. The total value of international remittances amongst CIS countries has increased more than 32 times, i.e. from 5.7 billion US$ in 2000 to 18.9 billion US$ in 2014. Ukraine is the largest recipient of remittances in the region, followed by Uzbekistan, Tajikistan and Armenia. If we look at the volume of inward remittances in individual CIS countries, remittances inflows for Tajikistan, Kyrgyzstan and Ukraine have increased by 38.1–42.3 times, from 2000 to 2014. Following them are: Armenia 16.5 times, Azerbaijan 9.5 times, Belarus 8.1-8.4 times, Moldova 6.1 times and Georgia 4.6 times. Turkmenistan and Uzbekistan do not provide official information concerning personal remittances received in current US dollars. However, the Central Bank of Russia's annual report (2016) revealed that their remittances amounted between 12–15% of Uzbek GDP and 1.5% of Turkmen GDP in 2014, respectively.

The remittances inflow increase from Russia to CIS countries has a direct relationship with the increasing number of migrants towards Russia (Federal State Statistic Service, Rosstat, 2016). According to the Rosstat report (2010) until 1997, every person who changed his or her place of residence for more than 45 days was counted as a migrant and this included a large number of individuals who were in the country temporarily for business, study or personal visits. From 1997 until 2011, only migrants with permanent-type registration were counted, regardless of the duration of their stay. Starting from 2011, temporary migrants registering and residing in a place for nine months or more were also included in the statistics. This was one of the main factors behind the dramatic increase in the number of international migrants recorded starting in 2011 (Chudinovskikh and Denisenko, 2014). However, another group of experts states that the sharp increase of migration to Russia in recent decades has mostly had a direct association with Russia's lack of demographic resources. Because of the low birth rate and high death rate in Russia, combined with insufficient labour mobility within the local population, there is a need for foreign labour (Moiseenko et al., 2009; Kuzminov et al., 2013). Moreover, Denisenko (2017) claims that the project applied by Russia, the so-called "Resettlement program compatriots in Russia" sharply increased the number of migrants from Central Asia to Russia.

The development prospect group of the World Bank (2016) reports that three CIS countries are listed amongst the world top ten countries in the world for receiving remittances according to the ratio of remittances to GDP (Figure 1).

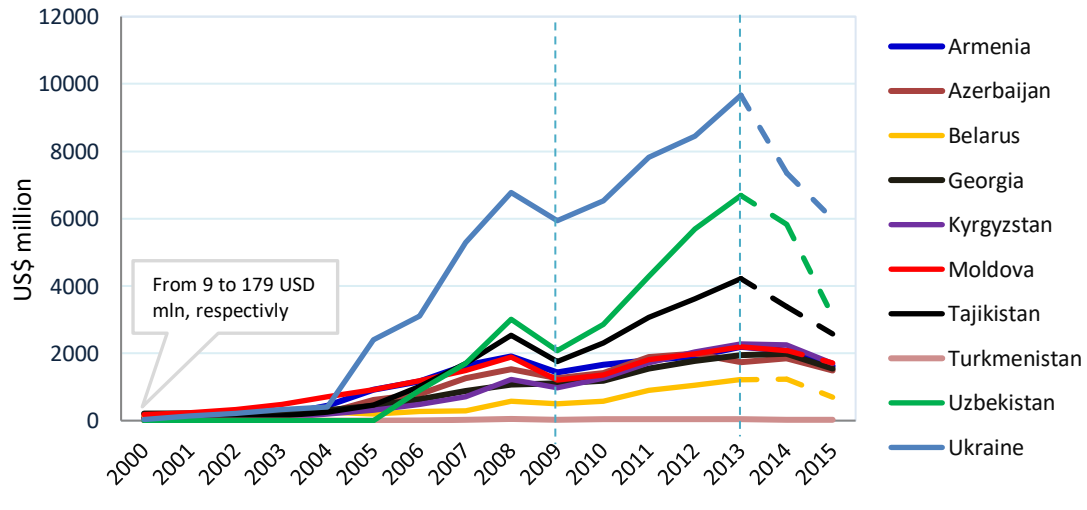
Figure 1. Remittances inflow as a percentage of GDP, 2017



Source: World Bank, 2017

Long before the Russian economic crisis, triggered by the Western economic sanctions against Russia over the Ukraine Crisis in mid-2014, the labour migrants provided approximately 49.6% of Tajikistan's GDP, 38.1% of Kyrgyzstan's GDP, 26.9% of Moldova's GDP and 16% of Uzbekistan's GDP (Trilling, 2014; World Bank, 2015). In 2016, compared to 2013, remittances in Central Asian countries decreased on average around 30% (Figure 2). The Caucasian countries of Armenia, Azerbaijan and Georgia also experienced a similar decline of remittances volume by 14–26%. Although the ratio of remittances to GDP is not significant for Ukraine, Turkmenistan and Belarus, these countries also experienced a sharp downturn ranging from 38.9 to 59.8%.

Figure 2. CIS, Migrant remittance inflows (US$ million), 2000-2015



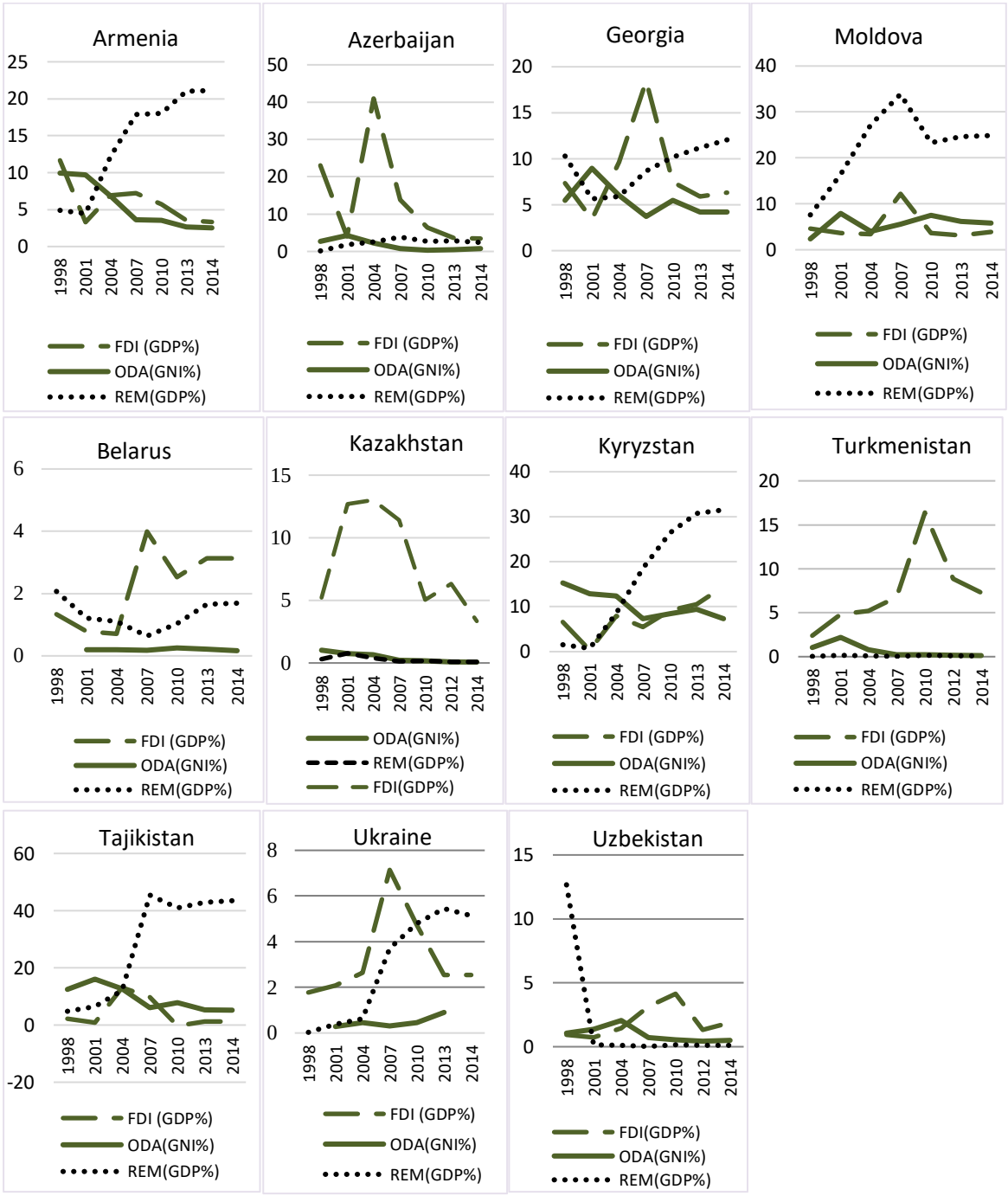
Source: World Bank, 2016

Brownbridge and Canagarajah (2010) claim that the reduction of remittances provokes a drop in imports of consumer goods, whilst households still have to hold high levels of consumption (for instance paying housing rents) and investment in housing. Bank of America Merrill Lynch (2013) reported that a reduction of Russia's GDP by 1% would reduce remittances inflows to Central Asian countries by 5%.

Another critical point is that the deepening economic and financial crisis in Russia and the collapse of the Russian ruble coinciding with persisting lower oil prices have negatively affected CIS remittance-dependent countries, particularly Central Asian countries, resulting in high inflation rates. With remittances inflows being slashed in half, the unemployment rate soared as a large number of migrant workers lost their jobs and the inflation rate rose due to extreme currency depreciation. The Russian ruble hit its lowest value – 82.37 ruble per US dollar – for the first time since the currency reform in 1988 (Central Bank of Russia, 2016). Moreover, the Russian unemployment rate upsurge reduced real wages sharply, especially in the sectors of construction and services and other low-skilled industries where migrant workers were mainly engaged.

International remittances have exceeded the other two main financial foreign inflows, i.e. foreign direct investment (FDI) and net official development assistance (ODA) in the last two decades. In this context, the majority of CIS countries are reliant on remittances (Figure 3). By contrast, Azerbaijan, Kazakhstan and Turkmenistan are oil exporting countries and Belarus is not a remittance-dependent country, and therefore they receive higher FDI and ODA inflows rather than remittances. However, other CIS countries (Armenia, Kyrgyzstan, Moldova, Tajikistan and Uzbekistan,) that mostly depend on remittances, are showing that remittances are gradually increasing to become much higher than ODA and FDI. However, ODA and FDI do exceed remittances in the case of Uzbekistan, but we must consider that Uzbekistan receives the highest amount of remittances in the CIS region after Ukraine (Central Bank of Russian Federation, 2015).

Figure 3. CIS countries (excluding Russia), the level of Remittances, FDI in ratio to GDP, and ODA in ratio to Gross National Income in percentage, 1998–2014



Source: World Bank, Migration and Remittances Factbook, 2014; UNCTAD 2014; Central Bank of the Russian Federation, 2015.

Note: ODA-Official Development Assistances; FDI-Foreign Direct Investment; and REM-Remittances Uzbekistan and Turkmenistan do not provide an official data about the remittances ration to GDP. According to the Russian Central Bank's report (2015) and Russia's Federal Migration Services (2014), remittances total the equivalent of 11.9% of Uzbek GDP.

We can predict that CIS counties will continue to suffer from Russian economic stagnation as long as they are dependent on Russia's economic health through migrant remittances and financial flows. Considering that a large share of remittances contributes to GDP, remittance-dependent countries amongst CIS face serious economic risks, as governments are having difficulties when trying to find foreign-exchange reserves for imports' current spending. On the other hand, if the Russian economic downturn continues, remittance-dependent countries will find themselves facing a set of unprecedented challenges because of the possibility of the return of a large number of migrants to a domestic labour market that has a more than limited capacity to absorb them. The Guardian (2015) reports that a drop in ruble value is not only shrinking the amount sent home by workers from Caucasus and Central Asia, but could also lead to political unrest in those remittances-receiving nations.

4. The empirical model.

Our paper will contribute to two strands of literature. The first strand relates to the remittances' effect on economic growth. The model developed to explore the relationship between remittances and economic growth is based on the extended version of the neoclassical model (Barro, 1996), which has been used by Giuliano and Ruiz-Arranz (2005), Jongwanich (2007) and Fayissa and Nsiah (2008). Within this framework, the growth equation can be expressed as follows:

$$lnGDP\ pc_{it} = \beta_0 + \beta_1\, ln\, REM_{it} + \beta_2 ln\, YearEdu_{it} + \beta_3\, ln\, GINI_{it} + \beta_4\, ln\, Inf_{it} + \beta_5\, ln\, Govex_{it} + \beta_6\, ln\, OPN_{it} + \eta_i + \varepsilon_{it} \quad (1)$$

where $lnGDPpc_{it}$ is the natural log of real GDP per capita in i country at time t and $\ln REM_{it}$ is log of received remittances per capita in US$; β_2 is the log of secondary school enrolment; β_3 is the log of inequality proxied by GINI coefficient, whilst η is an unobserved country-specific effect and ε_{it} is the error term. Based on Giuliano and Ruiz-Arranz (2005) and Jongwanich (2007), we are going to include in our model as control variables other variables such as inflation (β_4), government consumption expenditure (β_5) and openness to trade (β_6).

The expected sign of the coefficient associated with remittances is ambiguous, as suggested by the literature shown in Section 2. The coefficient associated with the secondary school enrolment used as a measure of investment in human capital is expected to have a positive effect on economic growth (Schultz, 1980; Romer 1986; Lucas, 1988; and Barro, 1991).

By contrast, we expect negative coefficients relating to government consumption and inflation, suggesting that a high rate of domestic inflation may act as a proxy for uncertainty and risk and therefore discourage growth (Gupta et al., 2007; Giuliano and Ruiz-Arranz, 2007). Government consumption is an approximate measure of government spending in non-productive purposes so that an increase in this variable tends to generate negative impacts on economic growth (Jongwanich, 2007).

Regarding our set of control variables, openness not only promotes a country's exports and imports, but also stimulates private sector economic activities, attracts foreign investment, reduces poverty rate, creates employment and increases foreign earnings. Accordingly, we expect a positive relationship between trade openness and economic growth.

The second strand is the one that links remittances and poverty level. The model to assess the role of remittances on poverty reduction is based on Ravallion and Chen (1997), Adams and Page (2005), Gupta et al., (2007) and Anyanwu and Erhijakpor (2010).

The relationship that we want to estimate can be written as follows:

$$\mathrm{LogPOV_{it}} = \beta_1 \log(\mathrm{q_{it}}) + \beta_2 \log(\gamma_{it}) + \beta_3 \log(\mathrm{Rem_{it}}) + \beta_4 \log(\mathrm{X_{it}}) + \mathrm{a_i} \varepsilon_{it}, (\mathrm{i} = 1, \ldots \mathrm{N};\ \mathrm{t} = 1, \ldots, \mathrm{T}) \quad (2)$$

where POV is the measure of poverty i country at time t; a_i is the fixed effect reflecting qualitative differences amongst countries. β_1 is the elasticity of poverty with respect to income inequality proxied by the *GINI* coefficient (q). β_2 is the elasticity of poverty with respect to real per capita GDP given (γ). β_3 is the elasticity of poverty with respect to international remittances (Rem). X contains the control variables, human capital, inflation, government expenditure and openness and ε is the error term.

The dependent variable in *Equation 2*, which is poverty, will be estimated via three poverty measures: poverty headcount, poverty gap and squared poverty. We measured poverty rate based on a methodology of Foster et al. (1984) (FGT). According to FGT, poverty will basically be measured based on three measures: *headcount poverty, poverty gap (or poverty depth) and square poverty gap (or poverty severity).* The most widely used measure is the *headcount index*, which simply measures the proportion of the population that is counted as poor, often denoted by P_0 and described by the following formula,

$$P_0 = \frac{Np}{N} \quad (3)$$

where N_p is the number of poor people and *N* is the total population. The expression can be rewritten as follows:

$$P_0 = \frac{1}{N}\sum_{i=1}^{N} I\ (y_i\ < z) \quad (4)$$

Here, "*I* (·) is an indicator function that takes a value of 1 if the expression in brackets is true, and 0 otherwise. So, if expenditure (y_i) is lower than the poverty line (z), then *I* (·) equals 1 and the household would be counted as poor" (Haughton and Khandker, 2010, pp. 68-69, Chapter 4).

A moderately popular measure of poverty is the *poverty gap index*, which measures the extent to which individuals' income falls below the poverty line (cost of living in a country) as a percentage of the poverty line. The poverty gap index may be written as follows.

$$P_1 = \frac{1}{N}\sum_{i=1}^{N} \frac{G_i}{z} \quad (5)$$

where N is the size of sample, G_i is a poverty gap and z is a poverty line. The measure does not reflect changes in inequality amongst the poor, whilst the next measure of poverty i.e. Squared poverty gap (or Poverty severity) takes into account inequality amongst the poor which formally might be written as:

$$P_\alpha = \frac{1}{N}\sum_{i=1}^{N} \left(\frac{G_i}{z}\right)\alpha, \ (\alpha \geq 0) \quad (6)$$

where N is the number of people in the economy, α is a measure of the sensitivity of the index to poverty, z is a poverty line and G is poverty gap for individual i. With α = 0, P_0 is simply the headcount poverty index. With α = 1, the index is the poverty gap index P_1, and when α is set equal to 2, P_2 is the poverty severity index (Foster et al., 2010).

The coefficient of our variables of interest β_3 could be positive or negative and we are interested in testing whether remittances' impact on poverty reduction is statistically significant. The model assumes that the level of income inequality is associated with a higher poverty level so that economic growth reduces poverty more in low-inequality countries than amongst high-inequality countries, therefore the coefficient of β_1 is expected to be positive. Past work has shown that a worsening income distribution tends to have a negative impact on poverty reduction, so its coefficient is expected to be positive.

Moreover, the model assumes that economic growth will reduce the poverty level; therefore, the coefficient of our variables of interest β_2 is expected to be negative. The literature shows that a rise in human capital increases the opportunity

of the poor to generate income (Jongwanich, 2007) and increase labour productivity and wages (Anyanwu, 1998, 2005), so the coefficient associated with human capital is expected to be positive, whereas the sign of the coefficient corresponding to trade openness is ambiguous.

Some of the literature argues that trade liberalization benefits the poor at least as much as it benefits the average person (Jongwanich, 2007). Trade liberalization could increase the relative wage of low-skilled workers and reduce monopoly rents as well as the value of connections to bureaucratic and political power. Nevertheless, Jongwanich (2007) states that trade liberalization might also worsen the income distribution, particularly by encouraging the adoption of skill-biased technical change in response to increased foreign competition. Thus, if trade liberalization worsens the income distribution enough, particularly by making the poor poorer, then it is possible that it does not reduce poverty, despite its positive overall growth effects. Indeed, the empirical evidence from the large and growing literature on trade and growth remains mixed (Edwards, 1998, Rodriguez and Rodrik, 2001). Edwards (1998) conducted a survey of empirical literature and as a result, defended the positive effect of openness on economic growth and claimed that the trade-growth nexus was not only robust to the indicators of openness but also to functional forms, estimation techniques and periods, whilst Ghupta et al. (2007) and Dollar and Kraay (2004) found no link between openness and well-being.

5. Variables and data used in the analysis.

We use cross-country data to analyse the effect of remittances on per capita GDP and poverty reduction of CIS countries. This paper investigates 10 selected CIS countries for the period 1998–2016, using 190 observations. We test our hypothesis with the help of random-effect, fixed-effects, least square models (OLS) with and without instrumental variables.

Despite the difficulty of obtaining remittances' data, we can benefit from access to the World Bank database. Data on remittances' transfers of Turkmenistan and Uzbekistan are available on the website of the Central Bank of Russia and International Statistic Committee of CIS countries.

Table 1. Definition and Source of the Variables

Variables	Description	Expected signs	Source
GDP pc	Natural log of real GDP per capita		World Banks' WDI

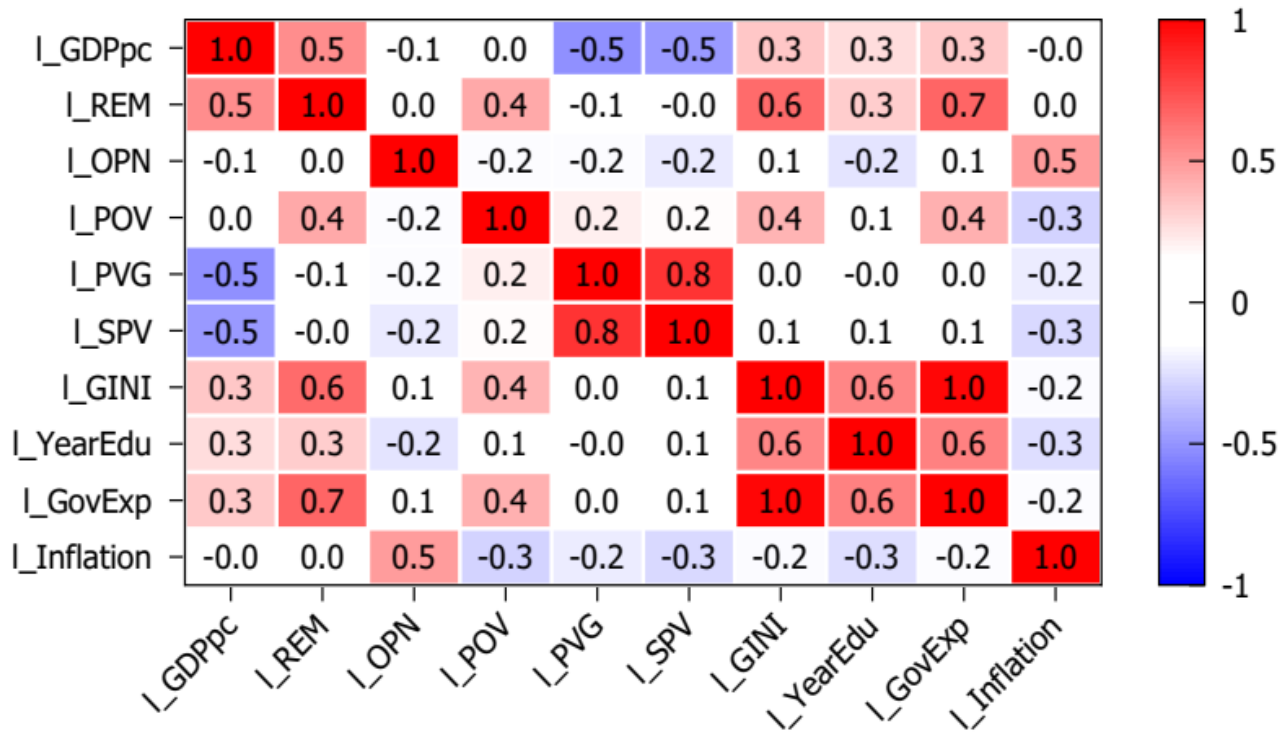
			IMF-DOT
Remittances	Personal remittances, received (current US$)	+/-	World Banks' WDI Central Bank of Russia
Trade openness	Ratio of the sum of imports and exports to the GDP that gives the measure of openness of an economy	+/-	World Bank's WDI
Poverty gap	Poverty gap index measures the extent to which individuals fall below the poverty line as a proportion of the poverty line	-	World Bank's WDI
Squared poverty gap	Squared poverty gap index determines the log degree of poverty for a given area	-	World Bank's WDI
Poverty headcount	The log headcount index measures the proportion of the log of population that is poor and lives below the poverty line	-	World Bank's WDI
GINI coefficient/inequality	The standard measure of income inequality based on a Lorenz Curve that ranges from 0 (or 0%) to 1 (or 100%), with 0 representing perfect equality and 1 representing perfect inequality. Values over 1 are theoretically possible due to negative income or wealth	-/+	World Bank's WDI
Inflation	Annual Percentage change in CPI	-	World Bank's WDI
Secondary schooling enrolment	Log of secondary school enrolment (in percentage) used as a proxy for the measure of investment in human capital	-/+	Barro and Lee (1996) See updated version at: www.cid.harvard.edu/ciddata.ciddata.htm
Government size	General government final consumption expenditure (% of GDP)	-	World Bank's WDI

Table 2. Descriptive statistics of regression variables

Variable	Mean	Median	S.D.	Min	Max
l_GDPpc	7.25	7.16	0.959	4.94	9.03
l_REM	19.5	19.6	1.90	13.9	22.9
l_OPN	4.56	4.63	0.315	3.60	5.30
l_POV	5.46	3.72	5.10	-4.61	10.7
l_PVG	5.51	9.76	6.02	-4.61	10.8
l_SPV	5.79	9.71	5.86	-4.61	10.8
l_GINI	3.94	4.22	0.969	0.00	4.96
l_YearEdu	3.45	3.81	1.09	0.00	4.54
l_GovExp	4.23	4.53	0.947	0.00	5.20
l_Inflation	2.03	2.05	1.06	-0.864	5.68

Note: Raw data after a log transformation.

Table 3. Bivariate correlations of regression variables.



Note: Raw data after a log transformation.

6. Empirical results.

Table 4 shows the results when Equation (1) is estimated using Model 1 (OLS), Model 2 (Fixed-Effects Model) and Model 3 (Random Effects Model). The log transformation of all the variables allows us to interpret the coefficients as elasticities.

The results reveal that the relationship between the GDP per capita and the explanatory variables, representing the sources of growth, show the expected signs, according to our prior prediction. The results from our model specify that the remittances variable has a positive and statistically significant effect at 5% and 10% on the GDP per capita. We found that, on an average, a 1 percentage point increase in remittances would provoke a 0.21% to 0.29% increase in the average per capita GDP of a CIS economy.

The negative coefficient associated with openness is statistically significant only in the first and second models at 1%. As we mentioned in Section 4, a higher degree of international integration of the real sector makes the export of labour forces – which is a precondition for remittances – less attractive (Berg and Krueger, 2003).

Table 4. Dependent variable per capita GDP

	MODEL 1	MODEL 2	MODEL 3
l_REM	0.275762 0.0076 ***	0.211960 0.0342 **	0.298873 0.0001***
l_GINI	−0.223656 0.1335	−0.239058 0.1941	−0.150168 0.5219
l_OPN	−0.434270 0.0738 *	−0.466860 0.0900 *	−0.28906 0.1911
l_INFL	−1.07004 0.1218	−0.978542 0.1138	−0.06698 0.8236
l_YearEdu	0.190989 0.1696	0.194917 0.2169	0.057969 0.7514
l_GovExp	5.54508 0.0008 ***	2.64241 0.0618 *	0.407213 0.2013
R-squared	0.610712		
Adj. R-squared	0.564913		
Log-likelihood	−101.5105		−143.5550
Sum squared resid			64.70789
LSDV R-squared		0.628203	
Within R-squared		0.286536	
Num. obs.	115	115	138

Note: All variables are in logarithm formula. T-statistics are reported in parentheses with *, **, *** denoting significance at 1, 5, and 10%, respectively.

Note that other controlling variables, i.e. inflation, income inequality and human capital reach the theoretical expected signs although they are not statistically significant. In particular, Stahl (1982) argues that remittances could induce income inequality. Jongwanich (2007, pp. 5–10) states that “because the international migration can be an expensive venture so that it is going to be the better-off households who will be more capable of producing migration and sending remittances”. The coefficient of government consumption specifies that government expenditure does impact significantly on economic growth. In contrast, an increase in inflation tends to retard economic growth, confirming the expected sign.

Table 5 reports the results regarding the impact of remittances on poverty reduction amongst CIS countries (equation 2 is estimated using the above-mentioned three models).

Table 5. Dependent variable poverty headcount, poverty gap and squared poverty gap

	Poverty headcount			Poverty gap			Squared poverty gap		
	MODEL 1	MODEL 2	MODEL 3	MODEL 1	MODEL 2	MODEL 3	MODEL 1	MODEL 2	MODEL 3
l_REM	−0.09276 0.5094	0.020145 0.8775	−0.1395 0.4395	1.07704 0.1444	0.624951 0.3005	0.933619 0.2678	−4.19567 0.0920 *	0.157714 0.8100	-0.16381 0.8459
l_REM_ Lagged	−0.21997 0.0348**	−0.2427 0.0377 **		−0.6666 0.4788	−0.9652 0.2381		−1.81980 0.0013 **	−1.98930 0.0024 ***	
l_GDPpc	−0.32654 0.0734 *	−0.68730 0.0001 ***	−0.31845 0.0810 *	−7.32001 0.0005 ***	−5.03246 0.0001 ***	−7.41738 0.0002 ***	−8.37986 0.0001 **	−5.70986 0.0001 ***	−8.17371 0.0001***
l_GINI	0.193179 0.6449	0.200380 0.6725	0.238999 0.5835	−1.71746 0.2526	2.15780 0.1628	−1.98307 0.0980*	-2.30351 0.0313**	−1.76518 0.1456	−1.69224 0.1138
l_OPN	−0.83987 0.1147 **	−0.77651 0.0871	−0.86299 0.0997 *	−2.28946 0.4880	−6.22102 0.0001 ***	−2.56534 0.4038	5.64395 0.0272 **	−6.75389 0.0016 ***	−4.7639 0.1008
l_INFL	−0.68762 0.5073	0.250269 0.0262 **	−0.64606 0.5419	−0.64522 0.24.34	−0.246874 0.8838	−6.30610 0.2312	1.33331 0.7818	4.40178 0.0061 ***	0.841193 0.8572
l_YearEdu	−0.09355 0.5688	0.03320 0.8439	−0.13293 0.4657	1.95511 0.4105	1.11561 0.5784	1.34196 0.5826	−0.614405 0.7727	−0.540737 0.8122	−0.801472 0.6983
l_GovExp	−0.32654 0.0734 **	0.622650 0.0001 ***	1.88631 0.5513	−9.04723 0.7594	−0.573079 0.7747	1.60897 0.9507	10.2008 0.1583	−0.162986 0.9080	1.5727 0.5400
R-squared	0.517767			0.500673			0.697406		
Adj. R-squared	0.450254			0.397870			0.637739		
Log-likelihood	−143.7617	−168.0014	−142.1449	−237.9703	−262.7700	−233.4958	−223.5261	−273.6323	−221.5156
Sum squared resid		109.0826	79.76943		2021.319		911.1899	1858.235	869.5673
LSDV R-squared			0.531138			0.551709			0.711228
Within R-squared			0.382939			0.524591			0.681792
Num. obs.	115	124	115	83	88	83	86	94	86

Note: All variables are in logarithm formula. T-statistics are reported in parentheses with *, **, *** denoting significance at 1, 5, and 10%, respectively.

There is a long relationship between remittances and poverty reduction in CIS countries. Remittances are not usually very volatile and seem to depend to a certain degree on prior levels of remittances. Therefore, to account for this persistence, a lagged remittance value has been included in the model.

Remittances are found to have a significant impact on the poverty headcount and the square poverty gap. We found that, on average, an increase in remittances by 1% leads to a reduction in poverty headcount from 0.21 to 0.24%. Furthermore, Table 5 shows that remittances will have a slightly larger impact on poverty when this is measured by more sensitive poverty measures: poverty gap and squared poverty gap. It shows that on overage, a 1% increase in remittances will lead from 0.66 to 0.96% decline in the share of people living in poverty gap, although results are not statistically significant, and from 1.81 to 1.98 % decline in the share of people living in squared poverty gap.

The results reveal that, regardless of the measure of poverty used as the dependent variable, GDP per capita has a negative and significant coefficient (the coefficient ranges from -0.31 to -8.3). Other controlling variables, i.e. income inequality, openness, inflation, human capital and government expenditure, reach the theoretical expected signs although some of them are not statistically significant.

A positive coefficient for the *GINI* index, although it is not statistically significant, points out that higher inequality leads to higher poverty. Surprisingly, our results suggest that inequality reduction does not play a key role in scaling down poverty levels.

7. Conclusion and further research.

The main goal of this paper is to assess the effect of remittances on economic growth and poverty reduction amongst CIS countries.

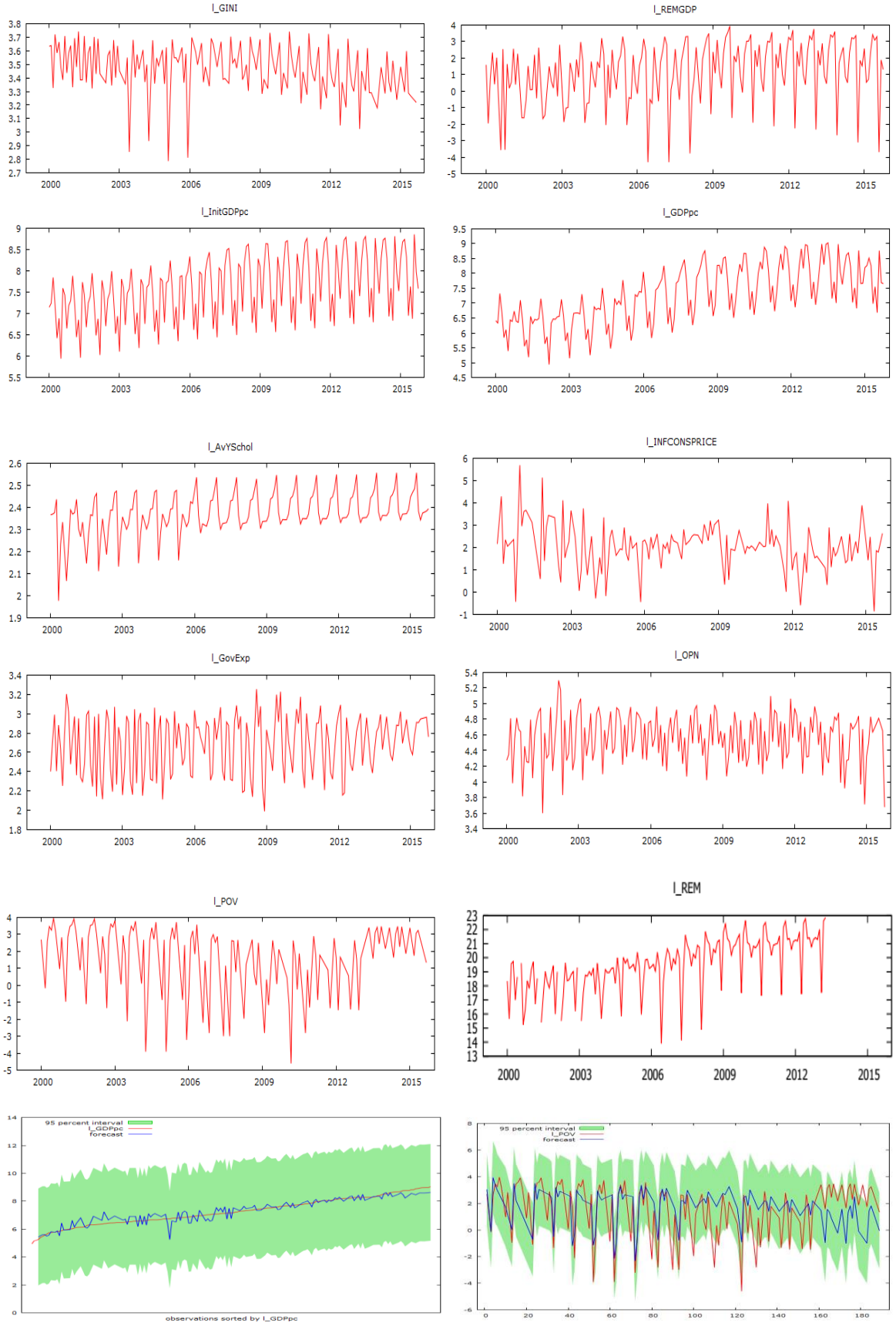
This study gives insights into two important channels through which remittances do positively affect economic growth and do negatively affect poverty amongst CIS countries. All variables we included in our two equations reach the theoretically expected sign and statistical significance and confirm the hypotheses put forward in the beginning of the paper. In particular, we must highlight two key findings from this paper. Firstly, remittances seem to have a slightly positive and significant impact on economic growth amongst CIS countries. Secondly, the lagged value of remittances seems to have a significant impact on the poverty headcount and the squared poverty gap.

We should also mention that, although remittances contribute significantly to the overall economy, we should not regard them as the main source of development.

More remittances inflows leads to more people migrating abroad as they enjoy higher wage-earning opportunities in labour-receiving countries, and therefore, this may have detrimental effects, such as less government spending on welfare, fewer or no institutional reforms, moral hazard and/or brain drain. Governments in remittance-receiving countries should seek to break the cycle of remittance dependency by ensuring good welfare coverage and a secure investment climate. The promotion of remittances should only be one part of any country's development strategy. CIS countries ought to attempt to use a more rational way of investing remittance inflows in dynamic productive sectors such as education, physical and human capital formation or small and medium businesses.

APPENDIX 1

A1. CIS countries: variables charts after the log transformation, 2000-2015.



References

Abdih, Yasser, Adolfo Barajas, Ralph Chami, and Christian Ebeke, (2012), "Remittances Channel and Fiscal Impact in the Middle East, North Africa, and Central Asia," IMF Working Paper 12/104, Washington.

Acosta, P., P. Fajnzylber and J.H. Lopez, (2007), "The Impact of Remittances on Poverty and Human Capital: Evidence from Latin American Household Surveys," World Bank Policy Research Working Paper 4247.

Adams, R.H. Jr, (1991), "The Effects of International Remittances on Poverty, Inequality, and Development in Rural Egypt," IFPRI Research Report 86, Washington.

Adams R.H. Jr, (2006), "Remittances and Poverty in Ghana," World Bank Policy Research Paper, No 3838, Washington.

Adams, Richard H. Jr. and John Page, (2005), "Do International Migration and Remittances Reduce, Poverty in Developing Countries?" *World Development* 33(10): 1645–1669.

Adela, Shera and Dietmar Meyer, (2013), "Remittances and their impact on Economic Growth," Social and Management Sciences 21/1, doi: 10.3311/PPso.2152.

Adelman, I. and J.E. Taylor, (1990), "Is Structural Adjustment with a Human. Face Possible? The Case of Mexico," *Journal of Development Studies* 26: 387–407.

Ali, Abdiweli, and W. Mark Crain, (2002), "Institutional Distortions, Economic Freedom, and Growth," *Cato Journal* 21(3): 415–426.

Asiedu, Elizabeth and Hadi Salehi Esfahani, (2004), "The Determinants of Foreign Direct Investment Policies," mimeo, University of Kansas.

Anyanwu, John C. and Andrew E.O. Erhijakpor, (2010), "Do International Remittances Affect Poverty in Africa?"

Azizi, Seyed Soroosh (2017), "The Impacts of Remittances on Human Capital and Labor Supply in Developing Countries," Northern Illinois University.

Baczynska, Gabriela and Aleksandar Vasovic, (2014, 27 July), "Pushing locals aside, Russians take top rebel posts in east Ukraine," *Reuters*. Archived from the original on 2014-07-28. Retrieved 27 July 2014.

Barajas, Adolfo, Ralph Chami, Christian Ebeke, and Sampawende J. A. Tapsoba, (2012), "Workers' Remittances: An Overlooked Channel of International Business Cycle Transmission?" IMF Working Paper WP/12/251.

Barajas A., R. Chami, C. Fullenkamp, M. Gapen, and M. Peter, (2009), "Do Workers' Remittances Promote Economic Growth?" IMF Working Paper No. WP/09/153.

Barro, R.J., (1991), "Economic Growth in a Cross Section of Countries," *Q. J. Econ*. 106, 407–443.

Barro, R.J., (1996), "Determinants of Economic Growth: A Cross-Country Empirical Study," NBER Working Paper 5698, National Bureau of Economic Research. http://www.nber.org/papers/w5698.pdf.

Beine, M., F. Docquier, and H. Rapoport, (2001), "Brain Drain and Economic Growth: Theory and Evidence," *Journal of Development Economics* 64: 275-289.

Bhagwati, J.N. and K. Hamada, (1974), "The Brain Drain, International Integration of Markets for Professionals and Unemployment: A Theoretical Analysis," *Journal of Development Economics* 1(1): 19–42.

Brownbridge, Martin and Sudharshan Canagarajah, (2010), "Remittances and the Macroeconomic Impact of the Global Economic Crisis in the Kyrgyz Republic and Tajikistan," *China and Eurasia Forum Quarterly*, 8(4): 3–9.

Čajka, P., M. Jaroszewicz, and W. Strielkowski, (2014), "Migration Incentives and Flows Between Belarus, Moldova, Ukraine and the European Union: A Forecasting Model," *Economics & Sociology*, 7(4): 11–26.

Catrinescu, Natalia, Miguel Leon-Ledesma, Matloob Piracha, and Bryce Quillin, (2006), "Remittances, Institutions, and Economic Growth," IZA Discussion Paper No. 2139, Bonn: Institute for the Study of Labor.

Chami Ralph, Connel Fullenkamp, and Samir Jahjah, (2003), "Are Immigrant Remittance Flows a Source of Capital for Development?" IMF Working Paper 03/189, Washington.

Chami Ralph, Adolfo Barajas, Thomas Cosimano, Connel Fullenkamp, Michael Gapen, and Peter Montiel, (2008), "Macroeconomic Consequences of Remittances," Occasional paper 259, International Monetary Fund, Washington, D.C.

Chudinovskikh, Olga and Mikhail Denisenko, (2014), "Policies and Trends in Acquiring Citizenship of the Russian Federation in 1992-2013." [O politike I tendentsiyakh priobreteniya grazhdanstva Rossiyskoy Federatsii v period s 1992 po 2013 gg.]. Available from www.hse.ru/data/misc/library/ WP8_2014_04.pdf.

Cinar, D. and F. Docquier, (2004), "Brain Drain and Remittances: Consequences for the Source Countries," *Brussels Economic Review* 47(1): 103–118, Special issue on skilled migration.

Dollar, D. and A. Kraay, (2004), "Trade, Growth, and Poverty," *Economic Journal* 114(493): F22–F49.

Ebeke, Christian, Boileau Loko, and Arina Viseth, (2013), "Credit Quality in Developing Economies: Remittances to the Rescue?" IMF Working Paper, WP/14/144.

Fayissa, B. and C. Nsiah, (2008), "The Impact of Remittances on Economic Growth and Development in Africa," Department of Economics and Finance Working Paper Series, Middle Tennessee State University.

Fayissa, B. and C. Nsiah, (2010), “Can Remittances Spur Economic Growth and Development? Evidence from Latin American Countries,” Department of Economics and Finance Working Paper Series, Middle Tennessee State University.

Faini, R., (2002), “Developpement, commerce international et migrations,” *Revue d’Economie du Developpement* 2: 85–116.

Faini, R., (2002), Migration, Remittances and Growth.

Foster, J., J. Greer, and E. Thorbecke, (1984), “A Class of Decomposable Poverty Measures,” *Econometrica* 52(3): 761–776.

Glytsos N., (2005), “The Contribution of Remittances to Growth. A Dynamic Approach and Empirical Analysis,” *Journal of Economic Studies* 32(6): 468-496.

Gupta, S., C. Pattillo, and S. Wagh, (2007), “Impact of Remittances on Poverty and Financial Development in Sub-Saharan Africa,” Working Paper 07/38. International Monetary Fund, Washington, D.C.

Gyan P., U. Mukti, and U. Kamal, (2008), “Remittances and Economic Growth in Developing Countries,” *The European Journal of Development Research* 20(3): 497–506.

Habib, Md. R. and S. Nourin, (2006), “Remittances and Real Investment: An Appraisal on South and South East Asian Economies,” Faculty of Economics, Chulalongkorn University, Asian Institute of Technology, Bangkok.

Hanson, G. and C. Woodru, (2003), "Emigration and Educational Attainment in Mexico," Mimeo.

Harris, John and Michael Todaro, (1970), “Migration, Unemployment and Development: A Two-Sector Analysis*,” American Economic Review* 60(3): 126–142.

Haque, N.U. and A. Jahangir, (1999), “The Quality of Governance: Second-Generation Civil Reform in Africa,” *Journal of African Economies* 8: 65–106.

International Monetary Fund (IMF), (2005), *World Economic Outlook*.

International Monetary Fund, (2008), *World Economic Outlook*, April 2008, Washington, D.C.

International Organization of Migration, (2015), *World Migration Report*. IOM, Grand-Saconnex, Switzerland.

Isomatov B.I. (2010), “Macroeconomic Consequences of Remittances, Evidence from Central Asian Countries,” (Rus), *AsiaPlus:* 13–19, Dushanbe, Tajikistan.

Jelínková, M. et al., (2011), Jaké cesty vedou do Česka?, Praha: Multikulturní centrum Praha, available online (http://aa.ecn.cz/img_upload/224c0704b7b7746e8a07df9a8b20c098/Jake_cesty_vedou_do_Ceska.pdf).

Jongwanich, J., (2007), “Workers’ Remittances, Economic Growth and Poverty in Developing,”

Kuzminov, Yaroslav, (2013), “Kakaya migratsionnaya politika nuzhna, Rossii?” *Nezavisimyy informatsionno-analiticheskiy zhurnal* 2(5), mart — aprel' 2011,

Kwok, V. and H. Leland, (1982), “An Economic Model of the Brain Drain,” *American Economic Review*, 72(1): 91–100.

Lopez-Cordova, E., (2004), “Globalization, Migration and Development: The Role of Mexican Migrant Remittances,” Inter-American Development Bank, Washington, D.C.

Lopez-Cordova, Ernesto, (2006), “International Remittances and Development: Existing Evidence, Policies and Recommendations,” INTAL/ITD Occasional Paper No. 41.

Maimbo, S.M. and D. Ratha, (2007), “Remittances: Development Impact and Future Prospects,” World Bank, Washington, D.C.

Mansoor, Ali and Bryce Quillin, ed., (2006), “Migration and Remittances: Eastern Europe and the Former Soviet Union,” The World Bank, Washington, D.C.

Massey, D., J. Arango, G. Hugo, A. Kouaouci, A. Pellegrino, and E. Taylor, (1998), *Worlds in Motion: Understanding International Migration at the End of the Millennium*, New York: Oxford University Press.

McCormick, B. and Wahba, J., (2001), “Overseas Work Experiences, Saving and Entrepreneurship Amongst Return Migrants to LCDs,” *Scott J Polit Econ* 48: 164–178.

Moiseenko V, Khonoga S, atisheva B, (2009), Statisticheskiy analiz i modelirovanie immigracionnikh potokov v Rossi, Moscow.

Political Construction Sites: Nation-building in Russia and the Post-Soviet States, page 76

Pieke F.N., N. Van Hear, and A. Lindley, (2005), “Informal Remittance Systems in Africa, Caribbean and Pacific (APC) Countries,” Synthesis Study, ESRC Centre on Migration, Policy and Society, Oxford.

Ratha, D., (2003), “Workers’ Remittances: An Important and Stable Source of External Development Finance,” Global Development Finance, World Bank, Washington D.C., pp. 157–172.

Ravallion, M. and S. Chen, (1997), “What Can New Survey Data Tell Us About Recent Changes in Distribution and Poverty?” *World Bank Economic Review* 11: 357–382.

Ravallion, M., (2008), ‘Inequality is Bad for the Poor’, in J. Macklewright and S. Jenkins (eds.), *Inequality and Poverty Re-Examined*, Oxford: Oxford University Press.

Rapoport, H., (2002): “Migration, Credit Constraints and Self-Employment: A Simple Model of Occupational Choice, Inequality and Growth,” *Economics Bulletin*, 15(7): 1–5.

Rodriguez, E., (2000), "Does International Migration Benefit Non-Migrant Households? Evidence from the Philippines," Available at: www.brocku.ca/epi/casid/rodriguez.htm

Romer, P., (1986), "Increasing Returns and Long-Run Growth," *The Journal of Political Economy*, 95(5): 1002–1037

Romer, P., (1991), "Endogenous Technological Change," *The Journal of Political Economy* 98(5): 71–102.

Sander, C., (2004), "Capturing a Market Share? Migrant Remittance Transfers & Commercialisation of Microfinance in Africa," *Small Enterprise Development*, 15(1), 20–34.

Serino, V., Moises Neil, and Donghun Kim, (2011), "How Do International Remittances Affect Poverty in Developing Countries? A Quantile Regression Analysis," *Journal of Economic Development* 36(4).

Schultz, T. W., (1980), "The Economics of Being Poor," *The Journal of Political Economy* 8(4): 639–651.

Sharipov, M., (2012), "Skills for Employability and Remittances Effect in Tajikistan," *Jumhuriyat*: 9–12. Dushanbe, Tajikistan (Taj).

Spatafora, N., (2005), "Two Current Issues Facing Developing Countries," Chapter Two in: *World Economic Outlook: A Survey by the Staff of the International Monetary Fund*.

Stark, O. and R.E.B. Lucas, (1988), "Migration, Remittances, and the Family," *Econ. Dev. Cult. Change* 36(3), 465–481.

Stark, O. and Y. Wang, (2001), "Inducing Human Capital Formation: Migration as a Substitute for Subsidies," Economic Series, Institute for Advanced Studies, Vienna.

Sufian, Fadzlah, A.M. Noor Mohamad, and Abdulaah Majid Moahmmed-Zulkhibri, (2008), "The Efficiency of Islamic Banks: Empirical Evidence from the MENA and Asian Countries Islamic Banking Sectors," MPRA Paper 190772, University Library of Munich, Germany.

Swift and Gilley (eds.), (1989), *The Irish in the Victorian City, The Irish in Britain, 1815–1939*, UK.

Taylor, J.E., J. Mora, R. Adams, and A. Lopez-Feldman, (2005), "Remittances, Inequality and Poverty: Evidence from Rural Mexico," Working Paper No. 05-003, Department of Agricultural and Resource Economics, University of California, Davis.

UNCTAD, (2009), "Contribution of Migrants to Development: Trade, Investment and Development Linkages."

UNCTAD, (2012), "Maximizing the Development Impact OF Remittances," New York and Geneva.

United Nations, (2013), Population Division, Medium Fertility, 2010–2100, POP/DB/WPP/Rev.2012/MIGR/F02.

Vidal, J.-P., (1998), "The Effect of Emigration on Human Capital Formation." *Journal of Population Economics* 11(4): 589–600.

Woodruff, C. and B. Zenteno, (2001), "Remittances and Micro Enterprise in Mexico," UCSD Graduate School of International Relations and Pacific Studies Working Paper, University of California San Diego.

World Bank, (2006), "Global Economic Prospects 2006: Economic Implications of Remittances and Migration," International Bank for Reconstruction and Development/World Bank, Washington, D.C.

World Bank, (2010), "Global Economic Prospects 2010: Economic Implications of Remittances and Migration," International Bank for Reconstruction and Development/World Bank, Washington, D.C.

World Bank, (2013), "Global Economic Prospects 2013: Economic Implications of Remittances and Migration," International Bank for Reconstruction and Development/World Bank, Washington, D.C.

World Bank, *World Development Indicators (WDI)*, Online. http://data.worldbank.org/data-catalog/world-development-indicators

World Bank, (2015), "Global Economic Prospects: Having Fiscal Space and Using It," Washington, D.C.

Yang, Dean, (2004), "International Migration, Human Capital, and Entrepreneurship: Evidence from Philippine Migrants' Exchange Rate Shocks," working paper, University of Michigan.

Yang, D. and C. Martinez, (2006), "Remittances and Poverty in Migrants' Home Areas: Evidence from the Philippines," in C. Ozden and M. Schiff (eds.), *International Migration, Remittances and the Brain Drain*, World Bank, Washington, D.C., pp. 81–121.