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Remittances In the CIS: Their Economic Implications and a New Estimation Procedure

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Remittances In the CIS: Their Economic Implications and a New Estimation Procedure [1]

Abstract

Migrant remittances are an increasingly important type of international financial flow for providing both additional resources for development as well as consumption expenditures for poverty alleviation. One geographical area where these flows are quite significant is in the CIS economies both in terms of their sheer size as well as their economic importance in providing a source of external finance for the recipient countries. Data on remittances generally, but especially in this region, are often of poor reliability due to the fact that these flows often move through unofficial and unmonitored channels. Data for the CIS are limited in that several countries do not provide this information in their balance of payment statistics and in those that do, it is often only partially reported and poorly collected or estimated. In this paper the characteristics, trends, and importance of remittances in the CIS are discussed and a new approach for estimating remittance flows in the CIS is developed based upon a new set of data recently released by the Central Bank of Russia and unpublished data obtained from the central banks of Kazakhstan and Moldova.

Empirical analysis of remittances has been hampered by the fact that these data are generally provided only as country totals and not provided on a bilateral basis. The lack of bilateral data has also meant that missing data from countries that do not provide this data cannot be obtained or derived from available data from other source or destination countries. However, beginning in 2006, Russia began publishing data by recipient country on money transfers through identified companies and post offices; Russia also publishes data on remittances outflows by its three key components (workers compensation, current transfers, capital transfers) to both an aggregate for the CIS and non-CIS economies. In this paper these two sets of data have been combined so as to allow an estimate of remittances by individual country. Since Russia is the major source country for remittances from many of the CIS, this has allowed an estimate of remittances by those countries that do not provide this data. Several different methodological procedures are proposed and a range of possible estimates is provided and the implications for these findings are discussed. The importance of the flows for providing a source of external finance is developed by comparing them to aid and capital inflows. Basically we find that the volume of remittances especially for the central Asian CIS are much larger than commonly reported; for example our estimates for Tajikistan are over twice of what is officially reported. In addition remittances are calculated to be almost 10 per cent of GDP for Uzbekistan, a country for which previously there were

no prior estimates of this variable. In addition, Kazakhstan is another important destination for workers from central Asia, some estimates are provided for its bilateral remittances to these economies. After Russia, Moldova is the largest recipient of remittance inflows in the CIS; this paper provides new information on the bilateral sources of these flows.

I. Introduction

Migrant remittances are an increasingly important type of international financial flow and for many countries they provide a significant source of external finance of a magnitude similar to or even larger than capital flows or aid. Numerous recent papers have attempted to describe the determinants and characteristics of these financial flows. Remittances to the developing and transition economies have been increasing quite rapidly and have more than doubled over the last decade and are estimated to be over $110 billion in 2004 (update if possible). As recently as the mid-1990s, remittances to these economies were smaller than the three other main financial flows -- foreign direct investment, official development assistance (ODA), and private capital flows; however, now remittances are now significantly larger than either private capital flows and ODA.[2] For a few countries, remittances are even greater than exports as a source of foreign exchange; this would be even more likely if exports were adjusted for their import component of assembled parts. In dynamic terms, remittances unlike FDI or other capital flows do not create a future obligation that implies a potential outflow of foreign exchange.

The vast majority of funds sent home are used for consumption purposes and this has typically played a significant role in reducing poverty. To the degree that these funds are used to support education by paying fees or reducing child labor, these transfers may contribute to human capital investment in the economy. Improvements in diet and access to medical services can also upgrade the stock of human capital. There is increasing attention in the developmental literature about policy initiatives which can channel remittances into supposedly more productive activities. However, given the fairly low income of these workers and their families, it is not clear that a reduction in their consumption levels in order to further enhance other types of investment would be optimal for the maximization of social welfare over time.

Although flows of this type might be intuitively viewed as a positive factor for growth and/or poverty alleviation, there are those that have hypothesized that these flows may actually reduce growth (Chami, Fullenkamp, and Jahjah, 2003; and Burgess and Haksar, 2005). There are any number of channels where by remittances might have a negative impact on development such as through Dutch disease appreciation effects, a brain drain,[3] or reduced incentives for recipients to work. Likewise there are numerous channels through which migration and remittances could promote development in addition to the obvious benefit of additional external finance;

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[2] The relative importance of remittances is really a return to a previous historical pattern since during most of the 1980s remittance flows to developing countries were greater than either official aid, FDI, or other non-FDI private capital inflows. Nevertheless the magnitude of remittances relative to developing countries' GDPs has increased substantially from just slightly more than .5 per cent of GDP in the 1980s to almost 1.5 per cent now (IMF, 2005, figure 2.1).

[3] The average skill level of migrant workers has been found to be above those of the general population of the source countries.

these include improved education and health for the impoverished families receiving them, improved job skills learned abroad, and increased commercial ties that could stimulate trade and investment (Herander and Saavedra, 2005). Broadly speaking, migrants reduce the information costs incurred in developing economic relations between countries. In cases where there is persistent unemployment, the loss of the labor resources may have very minor opportunity costs for the sending economy. Since remittances have been found to be less volatile than other sources of foreign exchange, they may reduce the chances of a financial or currency crisis. Remittances are generally large in countries that are considered to be a higher investment risk and have relatively poor access to international capital markets (as judged by low or non-existent credit ratings).[4] By improving credit ratings, remittances contribute to a better investment climate and can thereby attract other financial inflows. Undoubtedly the degree to which remittances can promote development is dependent on complementary domestic economic policies which channel these flows into appropriate activities while also addressing their macroeconomic implications (McCormick and Wahba, 2000; Taylor, 2006; Ballard, 2003). More recent econometric analysis has generally concluded that remittances have had no effect (IMF, 2005) or a positive and statistically significant impact on growth (Mansoor and Quillin, 2006; Ang, 2007) and/or poverty reduction (Adams and Page, 2003).

Estimating the impact of remittances on other economic variables such as growth and poverty is complicated by the statistical problem of endogeneity since during periods of low growth or high poverty more people may emigrate or those already outside may send more assistance home. In fact, this positive response of remittances to periods of economic distress is often cited as one of the important benefits of these flows as they counter pro-cyclical capital movements. Thus empirically, large remittances would be associated with economic distress. In addition, several important channels such as increased education or health spending would only affect growth after a very long lag and would therefore not show up in standard cross-country growth regressions as they are typically performed. The degree to which emigration and remittances can reduce poverty is dependent to a significant degree on the skill composition of the migrants. Although migrants appear to come from the higher skilled groups and from those with extra motivation and energy, it is still the case that remittances appear to increase education and health spending in these households that receive them. In addition, the poor may benefit from the increased job opportunities that are opened up when the more skilled leave; although this effect may be weakened if skilled and unskilled labor are complementary instead of substitute factors. Generally, given the statistical problems involved, the positive impacts of remittances are more apparent in micro household studies than in cross-country analysis. Remittances have also been alleged to be a significant factor in local housing markets (i.e., Armenia) and are often correlated with construction activity (IMF, 2005) or price movements (Palacin and Shelburne, 2005). Overall, the economic implications of remittances in regard to a country's inequality, macroeconomic performance, and money supply are not well understood and require additional research.

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[4] The IMF (2005) finds that remittances are positively associated with an improved credit rating on sovereign debt.

On a global basis, remittances are estimated to have been approximately $262.5 billion in 2005 ($232.7 billion in 2004) based upon reported inflows; less attention seems to be used to calculate outflows as their world total in 2005 is reported as $178.7 billion ($163.3 billion in 2004) (WB-RD, 2007). Thus remittance data are similar to trade data where on a worldwide basis total imports significantly exceed total exports; generally countries appear to exert more scrutiny of economic inflows than of outflows. Inflows appear to go primarily to developing countries as their total for 2005 is reported at $192.9 billion or 73.5 per cent; developing countries account for only $38.2 billion or 21.4 per cent of outflows.

One geographical area where remittance flows are quite significant is in the CIS economies[5] both in terms of their sheer size as well as their economic importance in providing a source of external finance for the recipient countries. An assessment of the impacts of remittances on the economic performance of the CIS economies, however, is significantly hampered by either limited data or data of poor reliability. Data on remittances are generally difficult to obtain due to the fact that these are private flows that often move through unofficial and unmonitored channels. In some cases such as Georgia, remittances are subject to income taxes and thus there is an obvious incentive in concealing these flows (Martinez, 2005). Also since Russia taxes migrants (those working over a year) at the flat rate of 13 per cent and seasonal workers at 30 per cent, there is an obvious incentive for migrants to remain undocumented and avoid official money transfer services which could potentially report them to the Russian authorities.[6] The importance of tax avoidance is demonstrated by increase in recorded remittances inflows to Tajikistan from $4 million in 20002QI to $56 million in 2004QI after the elimination of a 30 per cent tax on remittance transfers.

Several CIS economies do not provide estimates of remittances in their balance of payments statistics, and even in cases where the government reports remittance flows, there is a general sense that the official statistics grossly underestimate the true magnitude of the flows; this is especially the case for the central Asian CIS. As such, researchers have begun to develop some alternative methodologies for estimating the size of these flows. In this paper, a new approach to estimating remittances in the CIS is developed using two new data series recently published by the Central Bank of Russia. Similar, but previously unpublished data from Kazakhstan and Moldova are also examined. Section II discusses the availability of remittances data and the various definitions of remittances that are used as well as outlining some of the procedures that are used in making calculations of their values. In section III the available data on remittances within the CIS and their general magnitude are discussed. In section IV two new data series recently released by the Central Bank of Russia are described and their possible relationship to remittances are explored. Section V provides a range of new estimates of remittances based upon these datasets while section VI provides a discussion of the implications of these results and a summary of the findings.

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[5] The regional grouping Commonwealth of Independent States (CIS) is used to refer to the 12 former members of the Soviet Union (which does not include the three Baltic states) and does not explicitly refer to the institutional arrangement of that name; when discussing flows to and from Russia, the term CIS-11 is used to refer to the all of the CIS except Russia.
[6] Current legal initiatives under discussion envisage the convergence of rates at the lower level, as part of a general programme to discourage illegal immigration and to attract more skilled workers.

II. Remittances Definitions and Data

Remittances are generally defined as the sum of three entries in the standard presentation of the balance of payments, these are: 1) workers' compensation under the income account (of the current account) which includes income earned abroad by seasonal or short-term workers (residents for less than a year), 2) workers' remittances under the current transfers (of the current account) which includes income earned abroad by migrants (foreign residents for over a year) and sent home, and 3) migrants' transfers under the capital transfers account (of the capital account) which includes the repatriation of financial assets when migrants return home.[7] Generally, individual transactions or transfers of this type are not officially recorded (as items such as imports) and must be estimated by various means. The inclusion of compensation of employees (working abroad) in remittances makes sense from a strict balance of payments sense where transactions are recorded between domestic[8] and foreign residents since domestic workers temporarily working abroad are still considered as domestic residents and thus their wages earned in the foreign country represent a payment from a foreign resident to a domestic one. However, in terms of some issues such as providing foreign exchange for the home country, the values for official remittances overstate the contribution of this factor since some of that income is used to purchase items, especially food and rent, in the foreign location. Survey estimates using workers in Russia from Tajikistan find that approximately one-half of foreign earned income goes towards living expenses in the foreign country (World Bank, 2006).[9]

Table 1

IMF Balance of Payments Remittance Inflows for the CIS by Component, 2005-2006
(Millions of U.S. Dollars)

	2005				2006			
	Remittances	*Compensation*	*Transfers*	*Total*	*Remittances*	*Compensation*	*Transfers*	*Total*
Armenia	47	337	11	395	65	432	8	505
Azerbaijan	490	133	70	693	662	128	22	812
Belarus		235	135	370				
Georgia	94	247	5	346	153	315	17	485
Kazakhstan	56	6	116	178	73	11	104	188
Kyrgyzstan	313		9	322				
Republic of Moldova	395	520	3	918	603	573	6	1,182
Russian Federation	820	1,714	583	3,117	983	1,647	678	3,308
Tajikistan	465	1		466	1,015	4		1,019
Turkmenistan...................................								
Ukraine	236	359		595				
Uzbekistan								
CIS Total	2,916	3,552	932	7,400	3,554	3,110	835	7,499

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[7] These are IMF balance of payments standard presentation codes 2310, 2391, and 2431 respectively for inflows (credits), and 3310, 3391, and 3431 for outflows (debits).

[8] In this paper the term domestic refers to the home or source country of the worker and the term foreign refers to the destination country in which he has moved to work. In terms of remittances, the source country is the foreign country (where the migrant works) and the destination (where the remittances are sent to) is the home country.

[9] Those goods that are consumed in the foreign location of work should ideally be included as imports in the domestic country's balance of payments, but this is not commonly estimated and included in official import statistics. In addition, taxes paid to the foreign government may also not be properly accounted for.

Table 2

IMF Balance of Payments Remittance Outflows for the CIS by Component, 2005-2006
(Millions of U.S. Dollars)

	2005				2006			
	Remittances	*Compensation*	*Transfers*	*Total*	*Remittances*	*Compensation*	*Transfers*	*Total*
Armenia	14	129	3	146	19	126	4	149
Azerbaijan	127	112	29	268	149	125	26	300
Belarus			94	94				
Georgia	8	18	3	29	4	19	1	24
Kazakhstan	1,158	735	107	2,000	2,000	962	75	3,037
Kyrgyzstan	33	17	72	122				
Republic of Moldova	5	43	22	70	6	50	29	85
Russian Federation	3,051	2,921	1,017	6,989	4,587	6,038	813	11,438
Tajikistan	144	1		145	393	2		395
Turkmenistan								
Ukraine	2	10	22	34				
Uzbekistan								
CIS Total	4,542	3,986	1,369	9,897	7,158	7,322	948	15,428

Of these three components, worker remittances are by far the largest component accounting for well over one-half of total remittances; compensation of employees accounts for approximately another third while migrant transfers are relatively small. This, of course varies by country and year; for example the percentage breakdown by category in the outflows from Russia in 2006 were 52.8, 40.1 and 7.1 per cent respectively. Tables 1 and 2 provide the breakdown of remittances data for the CIS into these components for both inflows and outflows.

Obtaining data on remittances is not straightforward in that only a portion of the flows actually goes through some official financial channel or requires some other type of official report. Many of the migrant workers are illegal and thus do not report their earned income to their host country nor most probably to their home country for tax purposes. When the income in transferred back to their home countries, it may be recorded if the transfer goes through a bank or wire service, however often the money is carried by the person, friends or transport workers like bus drivers or even sent through the mail in letters. Physically sending or carrying the cash is especially used by illegal migrants to avoid having to fill out any documents, those poorly educated and unskilled who are especially unfamiliar with banking and money transfer services, and those with limited knowledge of the local language or customs.

The availability, speed, reliability and transaction costs are thought to be the major considerations in determining which method is used to transfer funds. Within the CIS the most popular mechanism currently seems to be through money wire services such as Western Union. The fees are generally low amounting to only a few percentage points, there are usually several currency options, and the transfer is quick with the funds available in a day or two.[10] Transfers through the banking system are generally

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[10] A study of the costs of sending funds from the U.S. to a number of the CIS including Azerbaijan, Belarus, Georgia, Moldova, and Russia found that it was similar to sending funds to other developing countries (Martinez, 2005).

more expensive and many migrants do not have bank accounts where they work nor do their families back home. Nevertheless, remittances are increasingly moving through official banking channels as the financial systems in these economies develop and as residents' confidence in the banking system is restored after falling during the banking system collapse following the 1998 Russian financial crisis. There is some evidence that remittances have been used by some banks in recipient countries to build a customer base.[11] The transfer of remittances allows banks to gather information about their customers, which in turn facilitates cross-selling of other financial products. Overall, a well-functioning banking system encourages remittances; however in the CIS financial depth is low and capital markets are not well developed. Cash transfers carried across borders by friends or relatives or sent through the mail are probably the cheapest method but they entail higher security risks.

A major difficulty in analyzing remittances within the CIS is that several of the countries do not provide remittances data (primarily due to the difficulties in obtaining this data), or if they do it is only partial in that it covers only one or two of the official components, or the estimates appear to be unreliable given other known information about the size of population flows, etc. More specifically, Turkmenistan and Uzbekistan do not provide balance of payments data consistent with IMF methodological procedures and their balance of payments (BOP) data do not appear in the IMF's *Balance of Payments Statistics* series nor do they provide remittances data on their web sites or in other official documents. Belarus does not provide data on the workers' remittances component, the Kyrgyz Republic does not provide data on the compensation of employees component (for inflows), and Tajikistan and Ukraine do not, in general, provide data on the migrants' transfers component. In addition, worker remittances as reported by Tajikistan include only those that go through official channels (World Bank, 2006). The overall reliability of much of the data from most of these countries is probably quite low. More generally, however, these are not problems associated only with the CIS; the majority of central banks in the developing countries do not provide reliable estimates of remittances (Martinez, 2005).

Generally with trade data for instance, if a given country does not provide data, it is possible to estimate that missing data from the trade statistics of its trading partners. However, this procedure requires that the data be provided on a bilateral basis and official remittance data are generally not provided on a bilateral basis. For example none of the CIS economies publishes remittances data on a bilateral basis. The degree to which it is calculated but unpublished on a bilateral basis is generally not made explicit in documentation provided by central banks concerning their statistical methodology. This is typical not just for the CIS but for most economies. For example, an IMF request to see if there was any bilateral remittance data to 33 developing countries yielded data form only 11. However, three of those providing bilateral information were from the CIS -- Kazakhstan, Moldova, and Tajikistan. In addition, officially published Russian statistics provide a breakdown between remittances to and from two country aggregates – the CIS and non-CIS countries. Thus the general absence of published bilateral remittance data eliminates the

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[11] A study of workers' remittances in Armenia shows that official channels are more widely used in transactions originating from Russia than from western Europe, due to much lower transaction costs, as banks have specifically targeted this type of business (Roberts and Banian, 2005).

possibility of obtaining any missing data from another country or double-checking available data.

Although bilateral remittance data are generally unavailable, it has been found, using that bilateral data that were collected for the above mentioned IMF study, that remittance flows can be reasonably modelled using a gravity model framework (Lueth and Ruiz-Arranz, 2006). Empirically, it is found that flows are larger between larger countries and become smaller as distance increases. In addition, that study found that flows are larger as the source country (of remittances) becomes richer and the destination country becomes poorer.[12] Given the fairly close association alleged to exist between migration levels and remittances (as discussed in section III), and the fact that migration flows have also been shown to be consistent with the gravity model framework (Peridy, 2006), it would appear likely that remittances would also be consistent with the gravity model framework.

The need to improve remittances data is widely recognized. The G7 Finance Ministers established an international working group led by the World Bank, and the UN Statistics Division has a Technical Sub-Group on the Movement of Natural Persons which are examining these issues. The general conclusion of these groups has so far been that transfers should be defined in terms of residence and thus should be described as personal transfers instead of workers or migrant transfers. A so-called Luxembourg Group has been set up to examine compilation methods and this group has so far concluded that numerous data sources need to be incorporated into remittances calculations. In addition, they found that household surveys and modelling approaches may also be useful with the optimal use of these different techniques being dependent on individual country circumstances. A number of the CIS, including Azerbaijan, Belarus, Moldova, and Russia have recently implemented procedures or surveys to improve the reporting of remittances. More specifically, Belarus has been examining ways to measure remittances sent through relatives or in letters, Moldova conducted a household survey on remittances in September-October 2004, and Russia has revised the reporting requirements of banking institutions (Martinez, 2005). In addition to more accurately collecting remittance data, there is a need for standardizing the definition of remittances. For example, should mortgage loans taken out in a country where a migrant works and invested back home in real estate be considered as a remittance? If this type of flow is included, then one of the major advantages of remittances, that is of not producing a future obligation, would no longer apply.

III. Remittance Flows in the CIS

Workers migrate for employment purposes in order to obtain jobs when none are available at home or to obtain better wages. Given that the per capita income of Russia is significantly above that of the other CIS, and given the historical and language factors, it is no surprise that Russia is the primary source for remittances in the CIS. Total remittance inflows (received) to the CIS-11 covering 1995-2005 are provided in table 3 while outflows (payments) are given in table 4. As explained in the previous section there are a number of missing values and some of the reported values

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[12] Our summary of their results is based upon the discussion in their text, although this does not match the results presented in their Table 4; we assume the latter is mislabelled.

below are calculated from only one or two of the three basic components of remittances. Between 2000-2006 remittance inflows into the CIS-11 have increased at an annual rate of over 35 per cent; while outflows (2000-2005) have increased at an annual rate of 31 per cent. Remittances to and from Russia covering 1995-2006 are provided in table 5 broken down into the three primary components (Russia does not provide data on remittance transfers from long-term migrants for 1995-2000) which are then further separated into flows with the world and those with the CIS-11. The overall trends in Russian remittances to the world and to the CIS-11 are plotted in chart 1 below.

Table 3
CIS-11 Remittance Inflows 1995-2006
(Millions of U.S. Dollars)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Armenia	65	84	136	92	95	87	94	131	168	336	395	505
Azerbaijan	3	0	0	6	54	57	104	181	171	228	693	813
Belarus	29	351	295	315	193	139	149	141	222	256	370	517
Georgia			284	373	361	274	181	230	236	303	346	485
Kazakhstan	116	89	60	72	64	122	171	205	148	166	178	187
Kyrgyzstan	1	2	3	25	18	9	11	37	78	189	322	450
Republic of Moldova	1	87	114	124	112	179	243	324	487	705	920	1,182
Tajikistan								79	146	252	467	1,019
Turkmenistan												
Ukraine		6	12	12	18	33	141	209	330	411	595	831
Uzbekistan												
CIS Total	215	619	904	1,020	915	900	1,094	1,537	1,986	2,846	4,286	5,989

Source: World Bank Remittance Database; shaded cells are estimates based upon the growth rate of remittances in those that have reported.

Table 4
CIS-11 Remittance Outflows 1995-2006
(Millions of U.S. Dollars)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Armenia		17	5	3	8	5	21	24	27	127	146	148
Azerbaijan	9	15	19	30	77	101	142	235	169	200	269	301
Belarus	12	192	141	111	76	58	77	68	65	81	94	
Georgia			6	5	39	39	26	26	29	26	29	24
Kazakhstan	503	423	522	471	356	440	487	594	802	1,354	2,000	3,036
Kyrgyzstan	32	33	29	50	51	45	54	57	55	82	122	
Republic of Moldova		6	20	24	25	46	59	57	67	67	68	86
Tajikistan								13	64	119	145	395
Turkmenistan												
Ukraine		1	4	3	3	10	5	15	29	20	34	
Uzbekistan												
CIS Total	556	687	746	697	635	744	871	1,089	1,307	2,076	2,907	

Source: World Bank Remittance Database

Remittances fell with the Russian currency crisis in the late 1990s but have increased since 2000. The increase in Russian outflows has been especially rapid having increased at an annual rate of almost 48 per cent a year between 2000 and 2006. The increase in total (world) outflows to over $11 billion in 2006 is explained primarily by the rapid increase in outflows to the other CIS which increased at an annual rate of almost 65 per cent per year over 2000-2006. The CIS share of Russian outflows fell each year between 1995 and 2000, but has increased each year since 2000; this share was below 50 per cent as recently as 2002 but is now over three-quarters. Total Russian inflows have increased much more slowly than outflows and are currently dominated primarily by inflows from outside the CIS. The CIS share of

inflows has declined from 81 per cent in 1995 to 27 per cent in 2006; the introduction of the workers' remittance component in 2001 only explains a small portion of this declining trend. Although the majority of Russian remittance outflows go to the CIS-11 (77.5 per cent in 2006), the majority of Russian remittance inflows come from outside the CIS-11 (73.3 per cent in 2006).

Table 5
Russian Remittances 1995-2006
(Millions of U.S. Dollars)

|		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Received (Inflows)													
Compensation	World	166	102	227	301	425	500	624	704	814	1,206	1,714	1,647
	CIS	0	0	1	0	0	0	0	0	0	4	6	7
Capital Transfers	World	2,336	2,668	2,041	1,624	865	775	416	423	339	364	583	678
	CIS	2,036	2,660	1,982	1,578	836	752	399	371	277	294	496	576
Remittances	World							363	232	300	1,098	820	983
	CIS							44	75	93	318	233	298
Total	World	2,502	2,770	2,268	1,925	1,290	1,275	1,403	1,359	1,453	2,668	3,117	3,308
	CIS	2,036	2,660	1,983	1,578	836	752	443	446	370	616	735	881
	% CIS	81.4	96.0	87.4	82.0	64.8	59.0	31.6	32.7	25.5	23.1	23.6	26.6
Payments (Outflows)													
Compensation	World	469	507	568	465	204	232	493	507	958	1,464	2,921	6,038
	CIS	216	309	379	303	136	148	329	327	613	1,017	1,944	4,476
	%CIS	46.1	60.9	66.7	65.2	66.7	63.8	66.7	64.5	64.0	69.4	66.6	74.1
Capital Transfers	World	3,469	3,529	2,934	2,086	1,204	867	908	931	969	1,,52	1,017	813
	CIS	2,259	1,840	1,471	946	437	297	261	238	245	231	260	291
	%CIS	65.1	52.1	50.1	45.3	36.3	34.3	28.7	25.5	25.3	22.0	25.5	35.7
Remittances	World							421	788	1,306	2,672	3,051	4,587
	CIS							246	485	805	2,103	2,475	4,101
	%CIS							58.5	61.5	61.6	78.7	81.1	89.4
Total	World	3,938	4,036	3,502	2,551	1,408	1,099	1,822	2,226	3,233	5,188	6,989	11,438
	CIS	2,475	2,193	1,850	1,249	573	445	836	1,050	1,663	3,351	4,679	8,868
	%CIS	62.8	54.3	52.8	49.0	40.7	40.5	45.8	47.2	51.4	64.6	66.9	77.5

Source: Russian Central Bank.

Generally, remittances, like aid, primarily go in one direction, i.e., a country is either a remittee (destination country of financial flow) or a remitter (source country of financial flow). Russia, however stands out as somewhat unique in being both a major remitter (10th in the world in 2003) and a remittee (19th in 2003). Nevertheless, overall outflows from Russia are much larger, and their relative size as been increasing through time as outflows have increased from 130 per cent of inflows in 2001 to 346 per cent in 2006. Within the CIS Russian outflows have increased from 189 per cent of inflows in 2001 to 1,007 per cent in 2006. Thus, whether looking at Russian remittances to the world or to the CIS, outflows are now much larger than inflows.

In addition to the large migrant inflows into Russia, workers from central Asia are also going in significant numbers to Kazakhstan due to its closer location, less overt discrimination than in Russia, a more similar climate, and the similarity of the Kyrgyz and Uzbek language to Kazakh. In addition to the legal migrants, there are an estimated 400,000 illegal migrants (or 2.5 per cent of the population) in Kazakhstan today (Economist, 2007). Although immigration only recently began to exceed emigration, Kazakhstan has been primarily a remitter for some time as its emigrants have provided minimal remittances. All of the remaining CIS are on net mostly

recipients of remittance flows. Unfortunately, besides Russia, none of the other CIS publishes remittances broken down into a CIS/non-CIS division so it is not possible to accurately determine what per cent of CIS-11 remittances come from countries outside the CIS.

Chart 1

**World and CIS Remittances to and from Russia, 1995-2006**
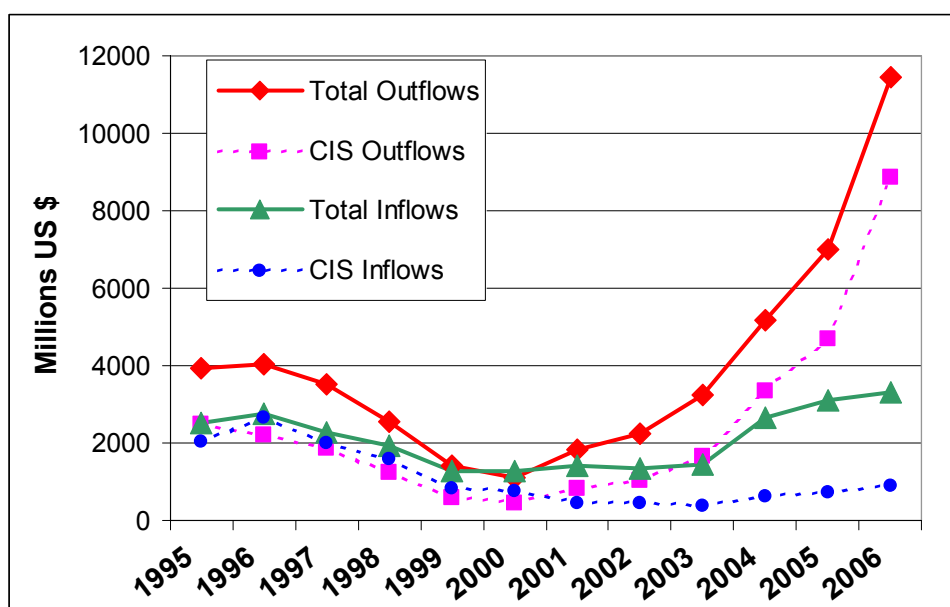
Source: Russian Central Bank.

It is interesting to compare reported Russian remittance outflows with reported CIS-11 remittance inflows. This is graphed in chart 2 using the data from tables 3 and 5. These two series track each other rather closely between 1998 and 2005. CIS-11 inflows prior to 1998 would seem suspect given their often very small values. A number of the three subcomponents of remittances for several countries are missing values during these years; realistically these are missing values and not zeros as considered in the graph. Since some of the inflows into the CIS-11 come from countries other than Russia, their reported inflows should be greater than Russian outflows to the CIS-11. Using data from 2005, CIS-11 total inflows (from table 3) were $4,286 while Russian outflows to the CIS-11 were $4,679; the CIS-11 inflows data do not include Turkmenistan or Uzbekistan since they do not report this data. Thus there is at a minimum a $393 million discrepancy. However, with the almost doubling (89.5 per cent increase) in reported Russian outflows to the CIS in 2006, and the significantly smaller increases in reported inflows by the CIS-11, this discrepancy increases to almost $3 billion in 2006. In section V an attempt is made to determine whether this is due to under-reporting by those with official remittance data or if it can be reasonably accounted for by estimates of remittances to Turkmenistan or Uzbekistan. However, CIS inflows, once adjusted for these two countries, should not just match Russian outflows (to the CIS) but should exceed them since they include remittances from other countries as well.

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Chart 2

Russian Outflows to the CIS-11Compared to CIS-11 Inflows, 1995-2006
(Millions of U.S. Dollars)
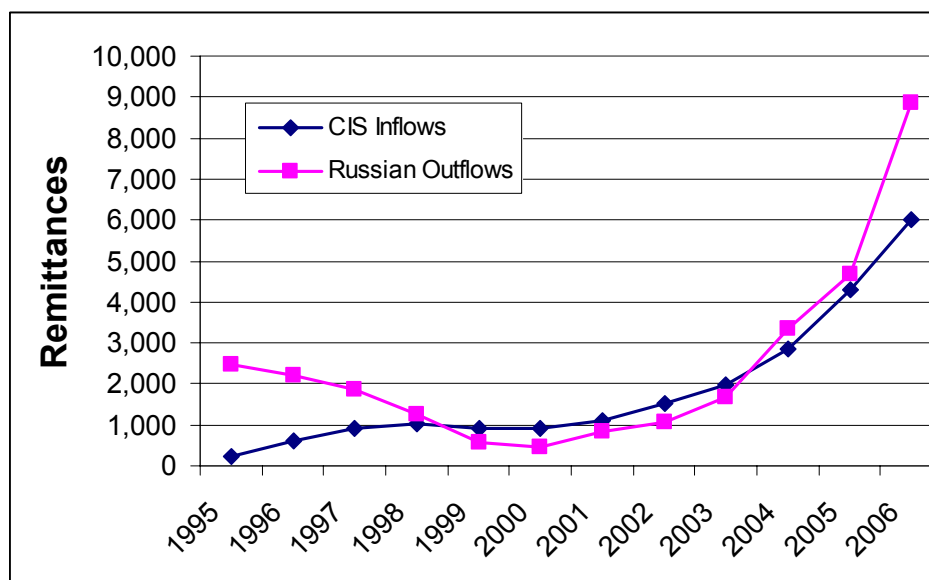
Source: Russian outflows from the Russian Central Bank; CIS inflows from table3.

Total migrant remittances from Russia to the CIS-11 have been increasingly dominated by compensation of employees and current transfers. The remaining constituent of total remittances, capital transfers, which in 2001 represented almost one third of this total, accounted for just 3% in 2006. Capital remittances have remained relatively stable during that period on an absolute basis, without reflecting changes in migratory outflows to the CIS. In fact, the correlation between both series is negative. This is a somewhat surprising result, since the estimation of capital transfers is allegedly based of the number of migrants returning to their countries. This apparent discrepancy may be salvaged if we consider that only part of the reported migration outflows concern migrants permanently returning to their countries. In line with this interpretation, relatively constant capital transfer outflows would suggest that the number of migrants returning home permanently has remained roughly unchanged. Changes in outflows could be explained by increased churning of temporary migrants.

The factors leading to the outward migration from central Asia and the Caucasus have evolved over time. After the breakup of the Soviet Union, people moved to avoid the conflicts that arose in the newly created FSU, and specific ethnic groups attempted to move back to the region of their heritage. Kazakhstan, where ethnic Russians accounted for almost half of the total population, lost over 3 million people (or almost 20 per cent of its population) due to emigration after 1989 (Schrooten, 2006). This type of migration is likely to have only a one-off impact on migrant remittances, as the newcomers repatriate their assets to their new country of residence. Ties with the original country of residence are likely to be weak and therefore, these immigrants are unlikely to send sizeable remittances back to where they previously lived. This return of ethnic Russians to their homeland resulted in

significant capital transfers remittances paid to Russia; this factor has diminished over time. As an example, capital transfers as reported in the Kazakh balance of payments is provided in chart 3. Not only has the magnitude of capital transfers fallen since 2001 but its share of total remittances paid fell from almost 75 per cent in 2001 to around 2 per cent in 2006. There is a very obvious seasonal pattern to these capital transfers as they peak in the summer and fall in the winter. The cause of this is less clear, but perhaps is due to the fact that people tend to move in the summer months due to better weather and the school calendar.

Chart 3

Capital Transfers due to Migrant Activity, Payments from Kazakhstan
2001QI-2007Q3
(Millions of U.S. Dollars and Ppercentages)
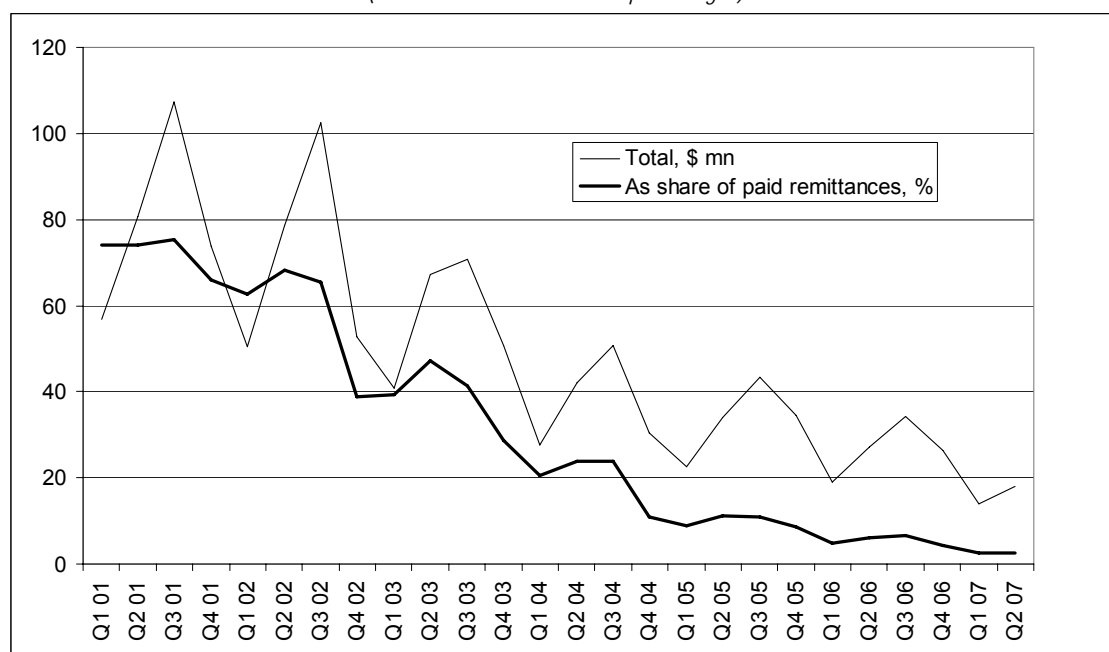
Source: National Bank of Kazakhstan

More recently, however, economic considerations have dominated remittance flows within the CIS as living standards and wage levels vary tremendously amongst the Former Soviet Union (FSU). Some economic data for variables likely to be important in explaining remittances are provided in table 6. For example, Russian per capita income is almost 10 times that of Tajikistan while the wage that a Tajik can get in Russia is also close to ten times their local wage. Although the typical CIS migrant may have less human capital than the typical Russian, there is some survey data which finds that the typical CIS migrant has higher human capital than the typical Russian. However, because many of the CIS migrants are not legal and not eligible for social assistance, they have lower reservation wages than domestic residents and therefore may end up getting paid less. Language difficulties and discrimination may also be significant in keeping migrant wages low.

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Table 6

Basic Economic Data on the CIS Relevant for Remittances

	Per Capita Income 2005	Percent of Russia 2005	Wages as Percent of Russia 2005	Annual Employment Growth 2000/05	Annual Population Growth 2000/5	Real GDP as Percent of 1989 2006
Armenia	4,428	46.2	37.7	-3.0	-0.4	130.6
Azerbaijan	4,374	45.6	41.4	0.8	0.8	129.0
Belarus	6,906	72.1	72.3	-0.4	-0.5	135.0
Georgia	3,362	35.1	34.5	-1.0	-1.1	49.0
Kazakhstan	6,927	72.3	84.3	3.2	0.4	123.0
Kyrgyzstan	1,695	17.7	20.8	1.8	0.9	87.0
Republic of Moldova	2,151	22.4	34.7	-2.7	-0.2	49.5
Russia..	9,584	100.0	100	0.9	-0.3	93.7
Tajikistan	1,134	11.8	9.6	3.9	2.1	60.5
Turkmenistan	5,067	52.9		2.3	1.4	98.5
Ukraine	6,193	64.6	52.2	0.5	-0.8	64.3
Uzbekistan	1,790	18.7	23.0	2.6	1.5	137.8
CIS - 11 (excluding Russia)...........	4,636	48.4		1.1	0.2	88.8

Source: UNECE Database and calculations by authors.

Notes: Per capita income is based upon 2000 PPP; wages for Georgia are for 2004 and for Uzbekistan are for 2003; employment growth for Turkmenistan is for 2000/2003; growth rates use compound rate.

Based upon the empirical analysis of Lueth and Ruiz-Arranz (2006) the per capita income of the recipient countries is strongly and negatively related to remittance inflows. For this variable (as with many of the others) the size of the estimated coefficient depends significantly on the structure of the estimated equation; i.e., what set of variables is included in the regression including whether the regression includes region, country or country-pair fixed effects.[13] Generally, however, their empirical results find that a doubling of the per capita GDP of the recipient country is likely to reduce remittances to only a fourth. Thus for example, controlling for other factors (such as GDP, distance, etc.) Uzbekistan would have 16 times the remittances from Russia as Kazakhstan due to the fact that the former's per capita income is only one fourth that of the latter. Workers, of course, migrate because of wages and as can be seen in the table the per capita income (used in the regressions) is a close proxy for wages.

Besides wage differences, in economies with significant unemployment or underemployment, the availability of jobs is another major consideration leading to emigration. Unemployment statistics for these economies is not provided in the table because in most of these countries this statistic is based upon official registered unemployment which is quite low but is not comparable to widely used western concepts based upon labor force surveys. In addition, those without jobs can usually find some type of subsistence work in agriculture or the informal sector. As an alternative, data are provided showing that GDP levels (as well as per capita GDP) remain significantly below what they were in 1989 and employment growth has been relatively modest over the last five years (although population growth has been low as well).

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[13] All their regressions include time fixed effects and the usual gravity variables such as GDP, distance, etc.

More recently, the demand for labor in Russia has increased significantly due to that economy's recent rapid economic growth and the fact that the Russian population has declined (despite inward migration of over 7 million from the CIS-11 between 1991 and 2004 (CBR, 2005)) by over 6 million between 1990 and 2006 (148.3 million to 142.2 million) due to a number of factors primarily associated with heath issues such as excessive drinking, AIDS, and TB. The negative natural growth of the population in Russia has therefore been partly offset by net migratory inflows from other CIS countries, some of which such as Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan have growing populations (see table 3). Thus in recent years economic migration has become the major factor explaining migratory inflows in the CIS. This has resulted in a reversal of the declining trend of net migration inflows to Russia as economic migrants have replaced the flow of ethnic Russians returning to their homeland. The need for migrant inflows may only increase in time for Russia, as currently there are projections that the population of Russia will decline by another 11.5 million (or 8 per cent) between 2005 and 2020 (UN PD, 2006). CIS workers, especially those from Ukraine, Moldova and to a lesser degree the Caucasus have increasingly been going to the EU new member states (NMS). As western Europe has liberalized immigration from the NMS, shortages have arisen at home for some labor categories; this has increased the opportunities for CIS workers to emigrate to the NMS in order to fill these vacancies.

CIS remittances have increased rapidly over the last five years and especially over the last year. Russian outflows to the CIS increased by a factor of ten between 2001 and 2006 ($836 million to $8,868 million). What is the underlying explanation for this? There are three possible reasons why remittances have increased; these are: 1) workers are sending much larger amounts back home, 2) more workers have migrated, and 3) officially recorded remittances have increased because of improved documentation and statistical estimation procedures.[14] There are several reasons why workers might be sending increasing amounts back home. The most obvious and easy to document is the increase in wages that has occurred over this time period. Focusing on Russian outflows over the last five years (2001-2006)[15], total remittance outflows increased at an annual rate of 60.4 per cent. Over this period, rouble wages increased at an annual wage of 27.1 per cent (table 7). Much of this wage increase was a real wage increase as consumer inflation averaged only 12.5 per cent a year. Given that the rouble dollar exchange rate was relatively stable, the increase in Russian wages in nominal dollar terms averaged 27.9 per cent a year. Note that Russian GDP increased at an annual rate of 26.6 per cent in dollar terms so the wage increase is basically consistent with GDP growth. Hypothesizing that if the stock of migrants that were sending remittances in 2000 had stayed fixed, then the amount of remittances sent would increase at the rate of wage growth (27.1 per cent); thus the volume of remittances would have been expected to increase from $838 million in 2001 to $2,859 million in 2006. However in 2006, remittances had increased to $8,868 million or over three times the level expected based upon Russian wage growth. Thus almost 68 per cent of remittances in 2006 cannot be explained by the stock of migrants in

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[14] For example, Mexico's central bank concluded that the almost doubling of recorded remittances from the United States between 2002 and 2004 was due largely to a change in the regulations governing reporting by money transfer companies (Martinez, 2005).

[15] Russian data prior to 2001 did not contain information on the worker remittance component and thus 2001 is the earliest year which would be generally comparable with 2006.

2001 or by the wage increases that occurred between 2001 and 2006. There are a number of other possible reasons why the amount being sent back per migrant might have changed, such as a changing wage differential between Russia and the home economy, or a change in economic conditions back home, or a changing country composition of migrants; however neither these nor any other reason seem plausible as an explanation as to why migrant behaviour in this respect would have changed so significantly. Thus we conclude that the rapid increase or an almost tripling of remittances in real terms must be largely due to the other two explanations, that being increased immigration or improved reporting of remittances.

Table 7

Estimation of How Wage Changes Affected Russian Remittance Outflows, 2001-2006

	2001	2002	2003	2004	2005	2006	Annual % Change
Russian Monthly Wages, Roubles	3240	4360	5499	6740	8555	10728	27.1
Annual Wage Increase	45.7	34.6	26.1	22.6	26.9	25.4	
Russian Consumer Inflation	21.5	15.8	13.7	10.9	12.6	9.7	12.5
Exchange Rate	28.1	31.3	30.7	28.8	28.3	27.2	
Russian Wages, Dollars per Month.....	115	139	179	234	302	394	27.9
Annual Wage Increase, $	51.4	20.8	28.6	30.7	29.2	30.5	
GDP, Billions of $	307	345	431	592	764	979	26.1
Remittances to CIS-11, Millions $	836	1050	1663	3351	4679	8868	60.4
Adjusted 2001 Remittances by Wages	836	1010	1298	1696	2192	2859	27.9
Unexplained Increase in Remittances .		40	365	1655	2487	6009	
Per Cent Unexplained		3.8	21.9	49.4	53.2	67.8	

Source: Russian Central Bank, Russian Federal Statistics Service, International Monetary Fund.

It is possible that this increase in remittances (over 2001-2006) is due to an increase in migrants, as remittances are likely to be closely related to the stock of migrants, although a number of considerations, such as the length of stay and the wage differential between the home and destination countries are likely to affect this relationship. In fact, the World Bank has attempted to estimate remittances directly from migration data. However, data on migration within the CIS are poor, both in terms of estimating yearly flows and in estimating the stocks from various countries. Data on the stock of migrants are muddled in the CIS by the large number of migrant flows composed of people moving back to their ethnic roots after the breakup of the Soviet Union. Thus there is no obvious way to estimate the number of migrants that are likely to make remittances from this existing data. World Bank estimates of these migrant stocks from each of the CIS to the other CIS countries is presented in table 8. What is readily apparent is that most CIS migrants have primarily moved to other CIS countries, and the stock of foreign migrants in a CIS country is composed mostly of migrants from other CIS countries. Also, Russia is the primary destination for CIS migrants and is the destination for more than half of emigration from each of the other CIS. Depending on how it is calculated (inflows or outflows), migration within the CIS accounts for between 13.5 to 16.2 per cent of world migration. These data are significantly different from some other estimates and may be of limited value; for example CIS-11 emigration to Russia is estimated to be 11.4 million in table 8 but Russian authorities put the figure at 7 million.

Table 8
CIS Migrant Stocks
(Thousands)

Source / To:	ARM	AZE	BEL	GEO	KAZ	KYR	MOL	RUS	TAJ	TUR	UKR	UZB	CIS	TOT	%CIS
Armenia			6.6	20.3	6.0			485.5		7.8	69.1		595	813	73.3
Azerbaijan	119.4		4.1	8.9	31.6			853.4		8.5	120.3		1,146	1,365	84.0
Belarus				0.4	45.2		2.8	943.8			358.8		1,351	1,800	75.1
Georgia	55.0		2.0		2.1			634.4			94.1		788	1,025	76.9
Kazakhstan	1.1		0.8	0.5		8.0		2,607.1		20.2	324.8	213.2	3,176	3,710	85.6
Kyrgyzstan				0.2	4.4			467.5	10.6		39.1		522	615	84.8
Rep. of Moldova ..			2.8	0.1	7.9			279.9			218.8		510	706	72.2
Russia	23.9		743.3	125.7	1,809.0	113.4	159.3		64.0	69.4	4,788.4	436.0	8,332	11,480	72.6
Tajikistan				0.2	10.4	8.0		386.3			42.9	245.8	694	797	87.1
Turkmenistan........	1.1			0.2	0.7			176.8			33.0		212	260	81.3
Ukraine	3.5		154.3	8.5	220.9	9.5	204.7	3,590.5		5.4	321.2		4,519	6,082	74.3
Uzbekistan	1.6		1.0	0.9	149.7	125.0		925.9	198.0	94.6			1,497	2,186	68.5
CIS Total	206		915	166	2,288	264	367	11,351	273	206	6,411	895	23,340	30,838	75.7
World Total..........	235	182	1,191	191	2,502	288	440	12,080	306	224	6,833	1,268	25,740	190,590	13.5
CIS Per Cent........	87.4		76.8	86.8	91.4	91.7	83.4	94.0	88.9	92.0	93.8	70.6	90.7	16.2	

Source: University of Sussex and World Bank.

This dataset however does not provide information on yearly flows and that is what is needed in order to determine to what degree migration can explain the surge in remittances since 2001. The Russian Statistical Service, however, provides a dataset with yearly estimates of migration flows (both net and gross) from the CIS; these are presented in chart 4 and table 9. Also, in table 9 the yearly increase in migration that would be necessary to explain the increase in remittances (after adjusting for wage changes) is determined to be slightly over 25 per cent. Over the five years this cumulative increase in the stock of migrants would need to increase by over 210 per cent; thus the migrant population would have had to triple between 2001 and 2006 in order to fully account for the increase in (wage adjusted) remittances. According to Russian FSS estimates the cumulative increase in migrants between 2001 and 2006 is between 750 thousand to a million depending on whether net or gross immigration is used. The net figure would be the preferred estimate if those leaving had been sending remittances back home, but if they were not previously sending remittances to the other CIS, because perhaps they had no close family there, the gross number would be appropriate.

These estimates, however, are unable to explain the rapid increase in remittances that has occurred since 2001. Firstly, there is no correspondence between the annual increases in remittances and the increases in migration to Russia. For example, there was a 39.6 per cent increase in remittances in 2005 and an 89.5 per cent increase in 2006, but the migration increases were essentially the same in these two years. Secondly, the number of reported migrants is not sufficient to explain the magnitude of the increase in remittances. For example, the cumulative increase in migrants between 2001 and 2006 of 750 thousand to a million is not large enough to account for an increase in remittances of over $6 billion; this would require that each migrant sent $6,000 home. Given an average yearly wage of under $5,000, this is not plausible. Even as an upper estimate, these million addition migrants are likely to account for only an additional $1.5 to $2 billion; thus of the over $8 billion increase between 2001 and 2006, $2 billion is likely due to wage increases and perhaps $1.5 to $2 billion to recorded migration flows. Thus almost half of the increase remains unexplained and is likely due to either a rapid increase in undocumented migration

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that is not reflected in the population data or to a significant change in how remittances are calculated. The fact that there is a widening gap between reported Russian outflows and CIS inflows (chart 2) is circumstantial evidence of a change in Russian reporting. This issue is addressed again in the next section where country detail on remittances and population flows are explored.

Chart 4

Net migration to Russia from the CIS

2000-2006
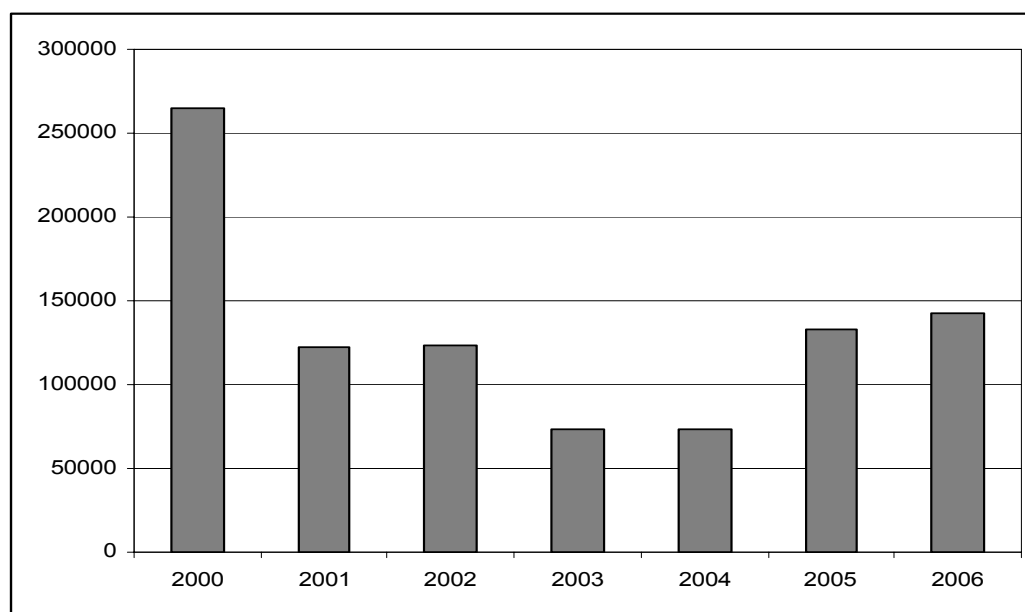
Table 9

Estimation of Migration Flows Needed to Explain Russian Remittance Outflows, 2001-2006

	2001	2002	2003	2004	2005	2006	Annual % Change
Remittances to CIS-11, Millions $	836	1,050	1,663	3,351	4,679	8,868	60.4
Adjusted 2001 Remittances by Wages	836	1,010	1,298	1,696	2,192	2,859	27.9
Yearly Needed Increase in Migration Stock		4.0	23.2	54.2	8.1	45.3	25.4
Cumulative Increase in Migrant Stock		4.0	28.1	97.5	113.5	210.2	
Reported Net Migrant	122,080	122,969	73,580	73,357	132,489	142,395	
Cumulative Net Inflows	193,271	315,796	414,070	487,539	590,462	727,904	
Reported Gross Inflows	183,650	175,068	119,661	110,374	168,598	177,657	
Cumulative Gross Inflows	265,212	444,571	591,936	706,953	846,439	1,019,567	

Migrant remittances from Russia to other CIS countries display a seasonal pattern, which is most marked for the compensation of employees and current transfers (chart 5). These items tend to peak in the summer and decline in the winter when there are fewer employment opportunities in sectors where the presence of migrants is particularly strong, such as construction, agriculture and retail informal trade. Current transfers, which are payments made by permanent residents in Russia to CIS residents, would be expected to display somewhat lower seasonality. However,

their employment in sectors with a seasonal employment pattern impart some seasonality to this series.

Chart 5

**Migrant Remittances from Russia, Quarterly Balance of Payments Data
2001 QI-2007 QI**
(Millions of U.S. Dollars)
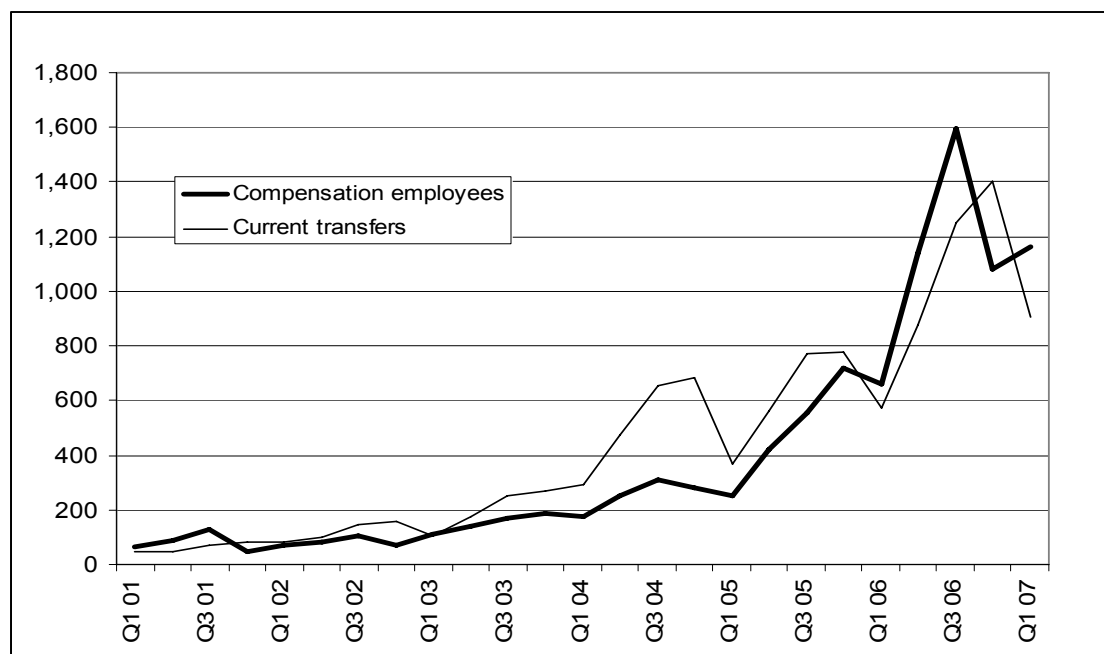
Source: Russian Central Bank.

IV. New Data on Cross-Border Financial Flows from Russia, Kazakhstan and Moldova

A. Russia

Besides reporting data for remittances (including its three components) Russia reports data on two other types of financial flows that are different but closely related to remittances. These two data sets include one that estimates all cross-border payments between physical persons and a subset of this that records payments only through post offices and money transfer companies.[16] The primary reason for examining these two additional databases is that: 1) they provide some underlying detail about the nature of remittances, and 2) they provide detailed bilateral country specific values which can therefore be used to potentially estimate bilateral remittance data (see section V) which is not officially reported and may not even be unofficially calculated. Obtaining this bilateral data is of significance in that it potentially allows a calculation of remittances to those CIS-11 economies which either do not provide remittance data or provide questionable estimates.

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[16] This information, when available, is sometimes used by central banks in making their calculations of remittances. This appears to be the case for the three economies discussed here as well as for Armenia (Roberts and Banaian, 2004), but exactly how it is used is generally not transparent, except in the case of Kazakhstan discussed in section IVB.

The total amount of Russian cross-border outflow payments between physical persons (table 10) was $18.8 billion in 2006 ($21.4 billion in 2006QII-2007QI) while the amount that was conducted through money transfer systems and post offices (table 11) was only $6.0 billion ($6.6 billion in 2006/7). These numbers compare to total official Russian remittance outflows of $11.4 billion in 2006. Clearly this larger data set of financial flows contains some transfers related to activities not considered as part of remittances such as payments for goods and services by individual traders or consumers. These three types of financial flows are described in more detail in appendix I and the web link to their location on the Central Bank of Russia's web site is provided. The diagram in appendix II shows in what ways these three financial flows differ from one another and where they overlap each other. For example, in 2006 $1.5 billion was transferred abroad by Russian residents to pay for goods and services (data on purchases of goods and services by non-residents in Russia is not reported by the CBR).

Table 10

Total Cross-Border Payments from Russia between Physical Persons, 2006QII-2007QI
(Millions of U.S. Dollars)

	2006QII	*2006QIII*	*2006QIV*	*2007QI*	*2006/7*	*% of CIS*
Armenia	154	218	257	154	783	11.4
Azerbaijan	126	172	199	149	646	9.4
Belarus	14	17	20	17	68	1.0
Georgia	98	129	132	108	467	6.8
Kazakhstan	36	42	47	36	161	2.4
Kyrgyzstan	114	157	156	119	546	8.0
Republic of Moldova	119	174	185	125	603	8.8
Tajikistan	204	347	341	206	1,098	16.0
Turkmenistan	4	5	6	5	20	0.3
Ukraine	279	352	419	324	1,374	20.1
Uzbekistan	220	368	310	183	1,081	15.8
CIS –11 Total	1,368	1,981	2,072	1,426	6,847	100
World Total	4,278	5,204	5,986	5,946	21,414	312.8

Source: Russian Central Bank.

Table 11

Total Cross-Border Payments from Russia through Postal Offices or Money Transfer Companies, 2006QI-2007QI
(Millions of U.S. Dollars)

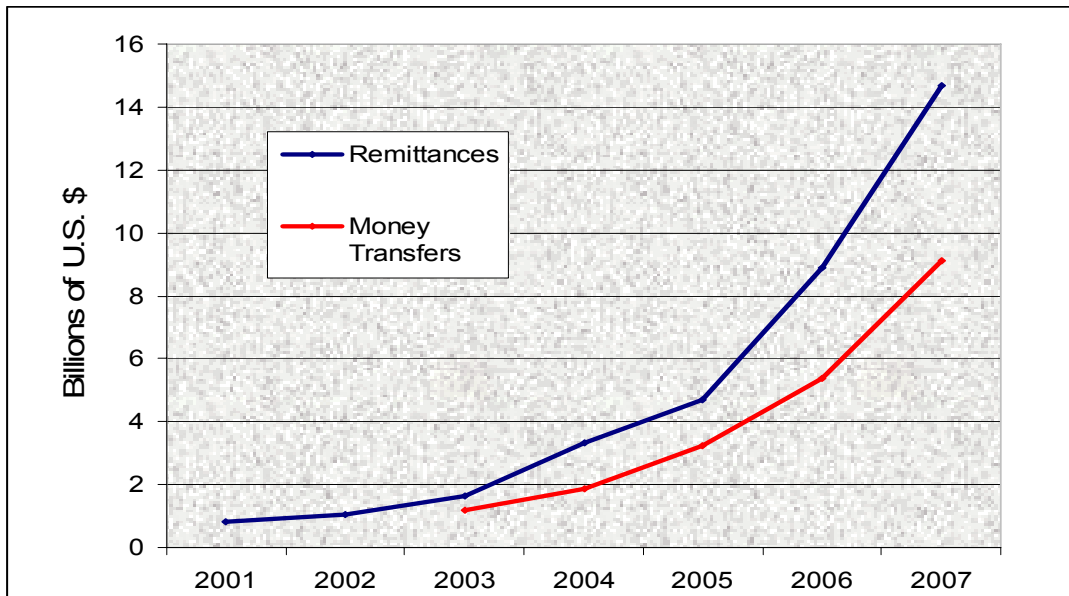|	2006QI	2006QII	*2006QIII*	*2006QIV*	*2006*	*2007QI*	*2006/7*	*% of CIS*
Armenia	73	129	183	219	604	133	664	11.3
Azerbaijan	62	94	133	151	440	115	493	8.4
Belarus	6	10	13	14	43	14	51	0.9
Georgia	44	81	106	113	344	102	402	6.8
Kazakhstan	12	22	26	26	86	23	97	1.7
Kyrgyzstan	53	102	141	142	438	99	484	8.2
Republic of Moldova	67	115	167	176	525	114	572	9.7
Tajikistan	123	187	323	324	957	198	1,032	17.6
Turkmenistan	3	4	5	6	18	5	20	0.3
Ukraine	127	210	273	317	927	220	1,020	17.4
Uzbekistan	135	210	355	300	1,000	178	1,043	17.7
CIS –11 Total	709	1,162	1,723	1,788	5,382	1,201	5,878	100.0
World Total	815	1,290	1,911	1,988	6,005	1,372	6,561	111.6

Source: Russian Central Bank.

Both of these two datasets of financial flows separate transactions between the CIS-11 and non-CIS economies. The two data sets differ significantly for flows to the non-CIS economies. In 2006, of the $18.8 billion in cross-border outflows, $12.5 billion went to non-CIS countries, and of this, only $622 million was transferred by money transfer systems or post offices. Thus the vast majority of outflows to the non-CIS were conducted through the banking system. The average size of transactions in the two datasets varied considerably with the average cross-border transaction being $8,153 but the average transaction using a money transfer service being only $1,334. The datasets were much more similar for transactions going to CIS-11 countries. In 2006 total cross-border flows to the CIS countries equalled $6.3 billion with $5.4 billion transferred by money transfer systems or post offices. The average size of the transactions was similar in the two cases (obviously since there is so much overlap) at slightly over $500. Thus cross-border outflows to the CIS-11 primarily use money transfer services and are composed of relatively small transactions. Alternatively, the most significant difference between these two data sets is that CIS flows are only a third of the larger dataset while they account for almost 90 per cent of the smaller dataset.

The dollar amount of cross-border outflows using money transfer systems and post offices has increased dramatically over the last several years. As recently as 2003, outflows amounted to only $1.3 billion; thus they have increased by over 66 per cent a year over the three years. If growth continues for the rest of 2007 at this rate or at the quarterly rate of 2006, these outflows will be over $10 billion in 2007 with over $9 billion going to the CIS. Note that over this same period of 2003-2006, total Russian remittances increased at an annual rate of over 52 per cent, while Russian remittances to the other CIS increased at an annual rate of almost 75 per cent per year. The close relationship between the growth in remittances and money transfers is shown in chart 6. The CIS-11 accounted for a larger percentage of money transfers (89.6 per cent in 2006) than total remittance outflows (77.5 per cent) given in table 5, but this percentage was rather close to that of the workers' remittances component (89.4 per cent).

Both Russian cross-border payments and money transfers to Belarus are quite small amounting to less than one per cent of Russian flows to the CIS-11 (tables 10 and 11); these values are especially low compared to Armenia and Georgia. Reported total remittance inflows to Belarus as reported by that country are similar to those of Armenia and Georgia in 2005 (table 3); the stock of emigrants to Russia from Belarus is considerably larger than those from Armenia and Georgia (table 8). Thus the fact that these cross-border payments are only 11 to 16 per cent of those to these two other countries seems inconsistent. Of course, Belarus borders Russia and thus a higher percentage of funds could be physically transmitted, but this border effect doesn't seem that strong in other countries bordering Russia.
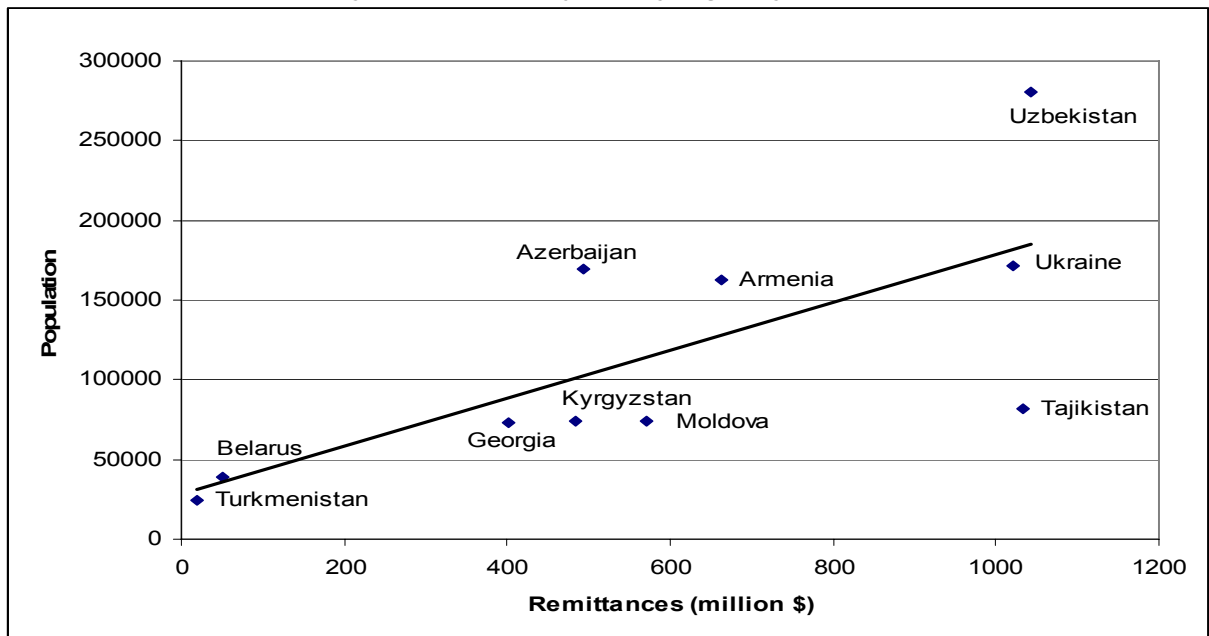
Chart 6

Remittances and Money Transfers from Russia to the CIS-11, 2001-2007

Chart 7

Money Transfer Migrant Remittances from Russia 2006 QII-2007QI and Russian Population by Nationality Census 2002, Adjusted by Migratory Flows

A number of researches have hypothesized that remittance flows should be related to the stock of migrants. Thus for example Ratha and Shaw (2006) have proposed estimations of bilateral remittance flows based upon knowledge of

migration flows. There is a reasonably close relationship between these money transfers to a given CIS-11 economy and the size of the migrant population from that country in Russia. However, instead of using the migrant stocks presented in table 8 which seem to be overly weighted by permanent resettlements after the breakup of the Soviet Union, an alternative measure is estimated using population data by nationality from the 2002 Russian census that has been adjusted by net migration flows up to 2006. In chart 7 this migrant stock is plotted against money transfers for the period 2006QII-2007QI. Kazakhstan appears as an outlier, with a level of remittances well below what would be expected given the estimated number of migrants from this country living in Russia. With the exclusion of this central Asian country (it has also been dropped from the chart), the correlation between both series is 70%. Temporary, seasonal migration, which is an important source of remittances, is not adequately covered in these population figures, thus weakening the relationship between the two variables considered here.

There is also a suggestive relationship between the increase in net migrants from a CIS-11 country and the change in wire transfers to that country. In chart 8 the increase in wire transfers from Russia between 2006QI and 2007QI is plotted against the change in net migration to Russia in 2006. As with the overall level of money transfers and migrants in chart 7, Kazakhstan and Uzbekistan are outliers; given the flow of migrants, the magnitude of the money transfers to these countries are low relative to the other CIS-11 economies. Of the two, Uzbekistan is perhaps more of an anomaly in that money transfers seem quite low given the number of migrants in Russia and there are few obvious explanations for this. However, Uzbekistan is one of the largest recipients of money transfers as would be expected based upon the migration data.

<div align="center"><strong style="color:#993333">Chart 8</div>

<div align="center">Change in Money Transfers to the CIS-11 and Net Migration to Russia, 2006</div>
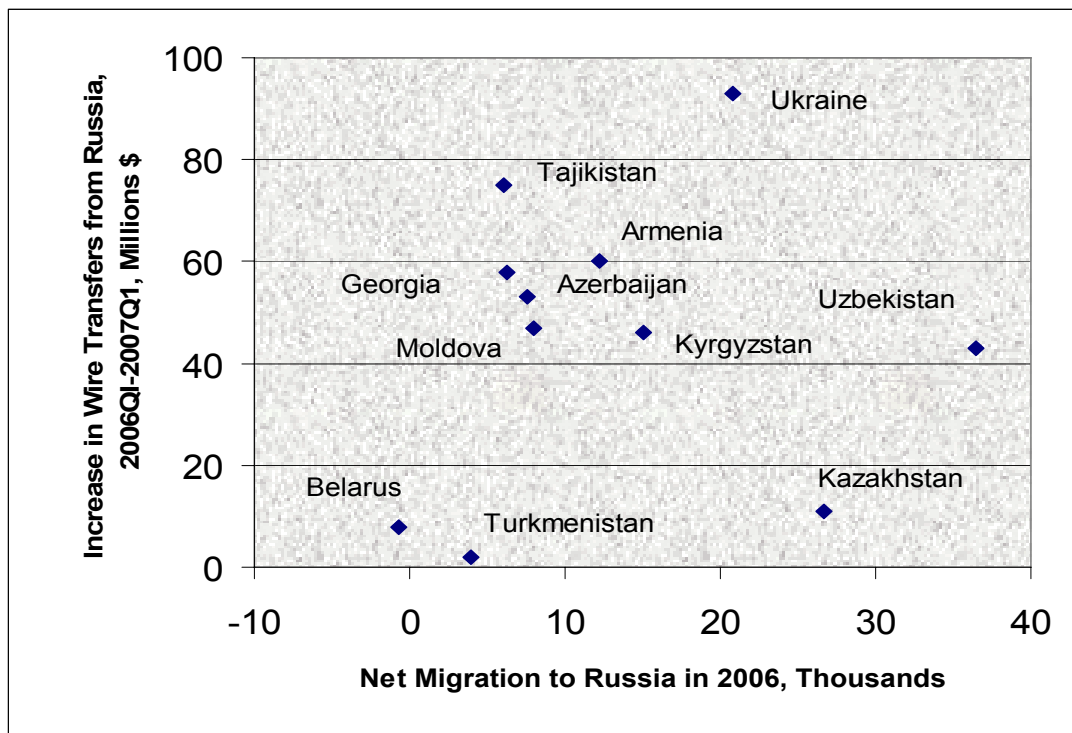
There are several reasonable explanations as to why remittances to Kazakhstan may be lower than what the migrant flows would suggest based upon the other CIS-11 economies. As discussed, the percentage of migrants from Kazakhstan that is ethnic Russians returning home instead of economic migrants is probably much greater than for the other CIS-11. Kazakhstan also shares a long border with Russia and it is relatively easier for them to return home with cash or send it with others. In the gravity model estimates of Lueth and Ruiz-Arranz (2006), remittances to a country that shares a border are one-half of what they would be otherwise. Clearly this is not due to the fact that real remittances are only half as much, but is due to the fact that official remittances are half as much due to the fact that a much higher percentage of the transfers are moving through undocumented channels. Of course this border effect (as discussed earlier for Belarus) would also reduce remittances to a number of the other CIS-11 which also border Russia.

In addition, using the gravity model estimations discussed at the beginning of section III, the higher per capita income of Kazakhstan would reduce remittances to only a sixteenth or less of what they would be to the other central Asian CIS (not including Turkmenistan) after controlling for other factors. The gravity framework as proposed by Lueth and Ruiz-Arranz (2006) however does not include the number of migrants as their other variables are supposed to capture this factor. For example the economic sizes and per capita incomes provide an alternative way of capturing this variable. An alternative approach is to incorporate the migrant stocks directly into the estimation and then ask what other factors affect the remittances per migrant. Ratha and Shaw (2006) have suggested the following formulation for estimating the influence of per capita income differences on remittances per migrant:

$$R = Y_h + (Y_f - Y_h)^\beta$$

where remittances per worker are expected to be a function of the per capita income of the home plus some difference between the income of the host (foreign) and home countries. They estimate β to be about .75. This formulation appears reasonable if asking how increases in the foreign (host) country's income affects remittances from a given home country. The result being that a worker will send home at least what he could have made at home plus and additional amount that increases as the host country gets richer. However, if the question is addressed instead from the host country perspective, of how the income level of the home country affects remittances from a given host country, the formulation suggests that workers from richer countries will send back more income than workers from poorer countries. This is counter to a frequently suggested relationship that the larger the income gap, the larger is the likely amount of remittances to be sent back home. This would also appear to be inconsistent with the spirit of the gravity model estimates, although this assessment would not necessarily be true from a purely technical point of view since the gravity formulation does not strictly address remittances per migrant; for example, a lower per capita income could increase remittances by increasing the number of migrants even if the transfer per migrant fell.

Unfortunately this approach of using migrants to estimate remittances may be of limited usefulness for the CIS because the number of migrants is subject to much uncertainty since many migrants are either ethnic Russians moving back home with

no propensity to transfer funds or else they are illegal and poorly documented. The estimate of this formula also seems inconsistent with what little survey knowledge is available for the region. According to a 2005 survey, the average Tajik worker sends 48 per cent of his income home as remittances (World Bank, 2006). Using the estimated figure that workers earn 9 or ten times as much in Russia (table 6), after assuming half of this is used to cover living costs in Russia, the worker would send back income five times what he could earn back home. However by plugging these numbers into the above equation remittances per worker equal:

$$R = \$1,134 + (\$9,584 - \$1,134)^{.75} = \$2,015$$

Thus according to this equation, the typical Tajik worker would send home twice his potential domestic wage, not five times as suggested by the survey data. Regardless of which estimate is correct, the rationale for migrating is obvious since the income available for the family (back home) is still several multiples of what it would have been if the worker was employed domestically.

Chart 9

Average Money Transfers from Russia and GDP Per Capita of Recipient
(U.S. Dollars)
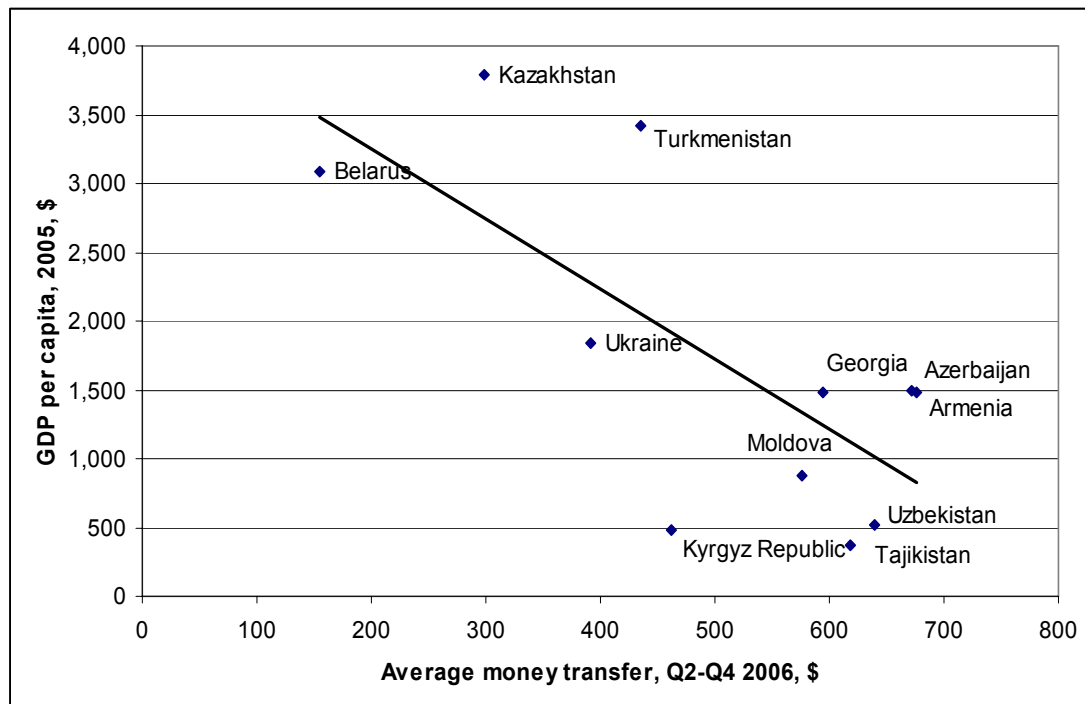
The two data sets of money transfers provided by the Central Bank of Russia also includes information on the average size of money transfers by destination. Assuming that there are no significant differences in the number of transfers per migrant per year across the different national groups, this can be considered as an acceptable proxy for the average value of transfers per migrant. In chart 9 the average amount of a money transfer is plotted against the per capita income of the recipient. There is a clear negative relationship between these two variables, with transfers to the poorer CIS-11 being much larger than those to the richer CIS-11. The rather small

sums for Belarus and Kazakhstan, although consistent with the empirical relationship identified in chart 9, nevertheless do seem to be something of an anomaly in that given their per capita incomes, these are rather small transfers which are all the more surprising given the relative ease (due to short distances and large common borders) with which this money could be physically carried back.

Based upon existing empirical analysis of remittance flows, there is an expectation that inflows will come from countries richer than the home country while remittances will be sent to countries poorer than the home country. The actual volume of these flows will depend on a set of factors which the gravity model framework attempts to estimate. However, with limited data there may not be a sufficient number of observations to properly make these estimations, especially if the focus is on a given country with limited data. With this Russian data on money transfers, there is only one year of data (although there is quarterly data, there would be insufficient variation in many of the independent variables to fully use this data) and only 28 countries. An alternative way to examine this relationship is to focus on the net transfers (inflows minus outflows) with the expectation that net flows should be positively correlated with the per capita income of the partner country. However, the actual size of the net flow will depend on a number of variables such as country size or distance that would need to be controlled for as well. In order to avoid these complications the net flow can be standardized by the size of the total flow (inflows plus outflows) and an index of net remittance intensity can be created. More precisely, a net remittance index (NRI) between countries i and j is created reminiscent of the intra-industry index used in trade analysis where:
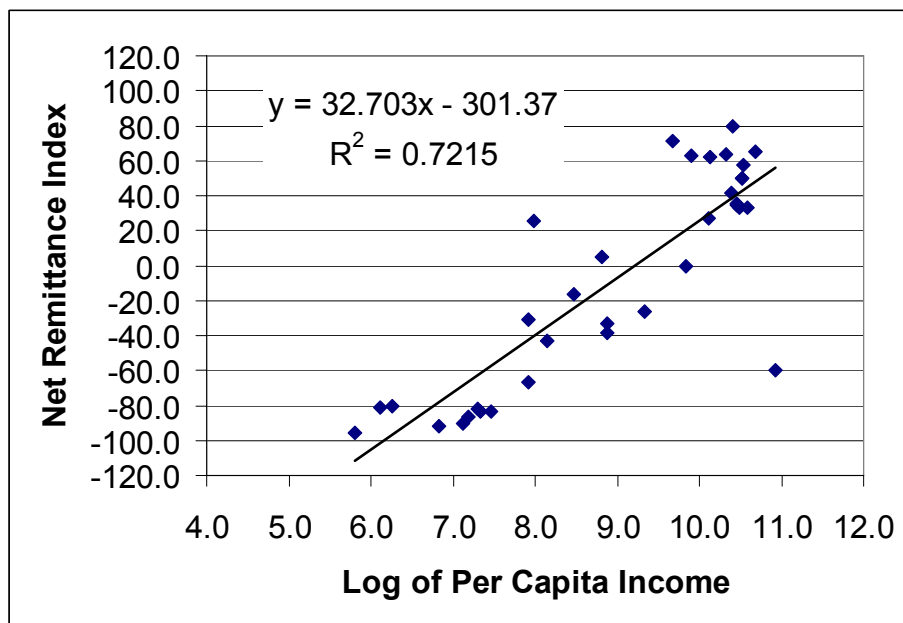
$$NRI_{ij} = ((RI_{ij} - RO_{ij})/(RI_{ij} + RO_{ij})) \times 100$$

and RI_{ij} represents remittance inflows from i to j and RO_{ij} represents remittance outflows from i to j. This index can vary from -100 to $+100$; it would have a value of zero for countries where inflows equal outflows and a negative value for countries that are net recipients. In chart 10 this remittance index (NRI) is plotted against the per capita income of the countries sending and receiving money transfers to Russia in 2006QII-2007QI. There is a strong positive relationship between the NRI and the per capita income of the partner country; the t-statistic is over 9 (statistically significant at the 99.9 per cent level) and the R-squared is .72. The one observation that stands out in chart 10 is Switzerland (lower right of chart); the unexpectedly high level of outflows is unlikely to be due to Swiss workers sending remittance transfers back to Switzerland. This observation suggests that this dataset does contain some other types of capital flow. In addition there was data for only one quarter for Switzerland and it is probable that more observations would have resulted in a more normal or expected value for Switzerland.[17] If Switzerland is dropped the empirical fit is much better with a t-statistic of over 12 and an R-squared of .84.

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[17] Several of the countries did not have data for all four quarters, but there would appear to be no real reason not to include them since the remittance index would not, in theory at least, be affected by the overall size of the flows.

Chart 10

Relationship between Net Remittance Index for Russia and Per Capita Income

Chart showing a scatter plot with trend line. Y-axis: Net Remittance Index (ranging from -120.0 to 120.0). X-axis: Log of Per Capita Income (ranging from 4.0 to 12.0). Equation shown: $y = 32.703x - 301.37$, $R^2 = 0.7215$

B. Kazakhstan

The National Bank of Kazakhstan has provided data (although they are not officially published on their web site) for this study on personal money orders by country of origin for 2003 and 2004. Theses data provide quarterly figures for these two years to all 11 of the other CIS and 8 other large economies, presumably the most important ones. Unlike the Russian data on money transfers, which do not match precisely any of the three remittance components (and maybe it shouldn't), the world total of the Kazakhstan data matches precisely its entry in its official BOP statistics for workers' remittances (IMF codes 2391 and 3391). The yearly totals for these inflows and outflows are provided in table 12.

What is perhaps most surprising about these remittance flows is the fairly small percentage of them that go or come from the other CIS. And within the CIS, Russian flows clearly dominate; in 2004 other than Russia, not one of the other CIS was the source or destination for even one per cent of total Kazakhstan flows. Given the anecdotal evidence of significant migration flows from the other central Asian CIS to Kazakhstan, these numbers seem surprising especially for the outflows. This suggests that unrecorded inflows to low-income neighbouring countries may be substantial. Physical proximity between Kazakhstan and the other central Asian countries may result in a comparatively lower use of official channels for transferring money in comparison with Russia.

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Table 12

Kazakhstan Personal Money Orders (Workers' Remittances) by Country of Origin, 2003-2004

	Inflows				Outflows			
	Millions $		Per Cent of Total		Millions $		Per Cent of Total	
	2003	2004	2003	2004	2003	2004	2003	2004
Armenia	0.02	0.06	0.06	0.11	0.65	0.94	0.16	0.12
Azerbaijan	0.04	0.13	0.10	0.24	0.71	1.82	0.17	0.23
Belarus	0.02	0.06	0.06	0.11	0.26	0.59	0.06	0.07
Georgia	0.04	0.18	0.10	0.34	0.35	1.11	0.08	0.14
Kyrgyzstan	0.12	0.47	0.32	0.89	0.30	0.77	0.07	0.10
Republic of Moldova	0.00	0.00	0.00	0.00	0.05	0.10	0.01	0.01
Russian Federation	5.43	15.40	14.17	28.78	38.48	132.20	9.14	16.41
Tajikistan	0.50	0.52	1.31	0.97	0.17	0.31	0.04	0.04
Turkmenistan	0.03	0.06	0.08	0.11	0.11	0.07	0.03	0.01
Ukraine	0.09	0.05	0.24	0.09	1.63	3.27	0.39	0.41
Uzbekistan	0.07	0.17	0.17	0.32	0.49	0.79	0.12	0.10
CIS Total	6.36	17.10	16.61	31.96	43.20	141.97	10.26	17.62
Other Countries	31.95	36.40	83.39	68.04	377.85	663.81	89.74	82.38
World Total	38.32	53.50	100.0	100.0	421.06	805.78	100.0	100.0

Source: Unpublished data provided by the National Bank of Kazakhstan

Since both this Kazak data and the Russian data introduced in section IV.A deal with money transfers, there would be some expectation that Russian outflows to Kazakhstan would be relatively close to reported Kazak inflows from Russia. Unfortunately the data from these two datasets are from different years and so no direct comparison is possible. However, Kazak worker remittances increased by 36 per cent from 2004 to 2006 (see table 17); thus if the Russian proportion remained fixed, inflows from Russia would be approximately $21 million (15.4 x 1.36) in 2006. Yet Russian money transfers to Kazakhstan (table 11) are reported by the CBR as $86 million. Thus there is a significant discrepancy between these two datasets by a multiple of four; this seems too large to be accounted for by slight differences is what is being conceptually measured.

The majority of these flows to and from Kazakhstan are with countries outside the CIS. The United States is by far the largest source of these money orders accounting for between a quarter and a half (depending on the year); Germany is second and the source of slightly over 10 per cent. China is the largest destination for outflows accounting for between a quarter and a half (depending on the year); other significant destinations include Turkey, Germany and the United States. It is also worth noting that the country distribution differs quite noticeably between the two years; this is unlike the Russian money transfer data whose country distribution seems more stable.

An anomaly of this data is that in absolute dollar terms the inflows from Russia are so small relative to the outflows. In 2003-4, outflows to Russia amounted to $170.7 million while inflows were only $20.8 million. This same pattern exists (to a lesser degree) in the Russian data on money transfers for 2006/7 where transfers from Kazakhstan to Russia amounted to $163 million while transfers from Russia were only $97 million. Although there may be an incentive for Kazaks to go to Russia since it has a per capita income 38 per cent above that of Kazakhstan, there would be far less of a reason for Russians to go to Kazakhstan. Nevertheless this pattern also exists for the rich advanced economies for which there is data. Over 2003-4

Kazakhstan received inflows of $57.3 million but sent out $421.9 million; thus the anomaly is not just money transfers to Russia, but the fact that Kazakhstan appears to transfer more to richer countries than it gets from them. The importation of foreign expertise from advanced economies (including Russia) to develop their energy resources is a possible explanation for these figures. However, Kazakhstan received inflows of only $5.1 million but sent out $448.4 million to countries poorer than itself; this is consistent with the belief that migrants generally go to richer countries. Analyzed from a different perspective, 95.2 per cent of money order inflows came from richer countries and 4.8 per cent from poorer countries (over 2003-4); but for outflows 56.9 per cent came from richer countries while 43.1 per cent came from poorer countries. Thus in percentage terms, inflows are more concentrated in coming from richer countries relative to outflows.

C. Moldova

Like Kazakhstan, Moldova does not release remittance data on a bilateral basis, but provided for this study previously unpublished data on money transfers from abroad by natural persons via commercial banks of Moldova. This data covering 2003-2006 is presented in table 13. This data like the Russian money transfers data (and unlike that of Kazakhstan) does not correspond precisely to any of the three components of officially reported remittances; thus if it is being used at all in the estimation of remittances by the NBM it is being significantly adjusted in some manner. Based upon funds transferred through commercial banks, this data differs from the Kazak data but would be somewhat similar to the difference between the two Russian datasets. This data supports, what is largely suggested by much of the other data, that there are limited remittances amongst the CIS-11; Russia appears to be the only CIS country with which it receives significant remittances. Given Ukraine's size, geographical proximity, much higher per capita income, and shared history and language, it is quite surprising how small the remittance flows appear to be. In addition, as shown in table 8, Ukraine is listed as the second largest destination (after Russia) for its emigration with a stock of Moldovan migrants almost as large as that of Russia; thus there is some fundamental mismatch between the migration flow data and the money transfer data. As such it would appear that the Moldovan money transfer data can probably not be used to estimate Moldovan remittances amongst the CIS. The division of remittances between the CIS and non-CIS suggested by this data may be more realistic. Although emigration is estimated to be much higher to the CIS (Russia and Ukraine), the wage levels are higher in the non-CIS and thus a smaller stock of migrants could be sending back significantly larger amounts per worker.

The money transfers from Italy seem large given the size of its migrant stock. The World Bank Migration Matrix (WB-MM, 2007) estimates the number of Moldovan migrants in Italy as 6,927 while those in Romania total 39,292, the U.S. 22,811, Israel 19, 243, and Portugal 3,564. Thus even considering wage differentials, the Italian value seems distorted. The fact that the money transfers from Russia and Italy seem extremely large raises the question whether these countries dominate these flows due to some financial market consideration. For example, maybe the banks or money transfer services processing these money transfers have their headquarters in these two countries and for this reason are being credited as the ultimate source of the funds even in cases where they are coming from some other country. The degree to which these two countries have some special financial tie to Moldova could not be

determined. However, as evidence of Italian ties to the Moldovan financial system it should be noted that Veneto Banca of Italy was the first foreign bank to enter Moldova with its acquisition of Eximbank, but that did not happen until May 2006 (EBRD, 2006).

Table 13
Money Transfers from Abroad to Moldova by Natural Persons via Commercial Banks
of Moldova, 2003-2006
(Millions of U.S. Dollars)

	2003	2004	2005	2006	*% of Total in 2006*
Russia	66.31	124.30	276.92	367.30	43.0
Other CIS	1.20	1.47	3.8	7.62	0.9
Non- CIS	249.78	296.64	402.52	479.63	56.1
Italy	67.69	81.45	137.04	163.11	19.1
Portugal	25.74	31.56	31.45	25.24	3.0
Spain	7.93	14.39	22.95	27.53	3.2
Ireland	3.87	9.26	14.97	22.23	2.6
Great Britain	6.96	10.82	18.12	20.08	2.3
Greece....................................	4.74	12.38	15.63	15.34	1.8
Turkey	3.03	6.50	11.89	14.68	1.7
Israel	9.36	17.22	14.86	13.58	1.6
Germany	13.35	13.22	11.64	11.85	1.4
Romania..................................	2.05	3.82	4.67	9.80	1.1
France	4.15	6.49	21.07	8.87	1.0
Cyprus....................................	2.59	5.32	6.90	7.50	0.9
World Total	317.29	422.41	683.24	854.55	

Source: National Bank of Moldova.

V. New Estimates of Remittances in the CIS

In this section the data on cross-border financial flows (described above) is used to make estimates of remittance flows to the other CIS including those economies which do not provide this information or those whose data is questionable. Given that Russia provides data on total remittances to the CIS-11 (but not to the individual countries) the procedure is to determine how remittances are distributed amongst the CIS-11 using the cross-border financial flows and then apply this distribution to total CIS-11 remittances in order to get individual CIS-11 country remittances. Obviously each of the CIS-11 receives remittances from other countries besides Russia, but it is reasonable to assume that Russia is the largest source, and if nothing else, the Russian estimate would provide the minimum value which is a significant improvement upon some of the existing missing values in the BOP data.

As discussed, total transfers to the CIS-11 in the dataset of wire and post transfers (summarized in table 11 and further described in appendix I.3) which totalled $5,878 million in the 2006QII/2007QI year was 86 per cent of the total for CIS-11 transfers of $6,847 million in the more inclusive cross-border financial payments dataset (summarized in table 10 and further described in appendix I.2) covering the same period. Thus essentially the vast majority of cross-border financial payments from Russia to the other CIS are conducted through money transfer companies and postal offices. More importantly, however, (considering the objective of this section) is the fact that the country distribution of these two datasets is extremely similar with a simple correlation coefficient of over 98 per cent; these

distributions are provided in right-hand columns of tables 10 and 11). The distribution for most of the destination countries differs by less than a percentage point and in no case is it over three percentage points.

The more inclusive cross-border financial payments data are further sub-divided into payments made by resident and non-resident individuals on a bilateral basis. These outflows to the CIS-11 countries are provided in tables 14 and 15. The overall amount of flows of the two types is fairly close with residents transferring $3.1 billion in 2006/7 while non-residents transferred $3.7 billion. The motive of these two groups might vary significantly in terms of their correspondence to true remittances and thus a different country distribution of these two classes of cross-border financial payments would raise questions as to which distribution would be most appropriate for estimating true remittances. Luckily, the country distribution of these two types (i.e., resident and non-resident) of cross-border financial flows are highly correlated at over 99 per cent; thus the distinction between resident and non-resident payments is not significant in obtaining a useful country distribution that can be used to estimate remittances.

Table 14

Total Cross-Border Payments from Russia by Resident Individuals, 2006QII-2007QI
(Millions of U.S. Dollars)

	2006QII	2006QIII	2006QIV	2007QI	2006/7	% of CIS
Armenia	67	90	112	77	346	11.1
Azerbaijan	54	73	86	72	285	9.2
Belarus	7	8	11	9	35	1.1
Georgia	48	62	63	53	226	7.3
Kazakhstan	17	19	23	19	78	2.5
Kyrgyzstan	47	62	65	60	234	7.5
Republic of Moldova	53	74	83	67	277	8.9
Tajikistan	89	145	149	103	486	15.6
Turkmenistan	2	2	3	3	10	0.3
Ukraine	134	162	197	162	655	21.1
Uzbekistan	95	154	135	91	475	15.3
CIS –11 Total	613	851	927	716	3,107	100

Source: Russian Central Bank.

Table 15

Total Cross-Border Payments from Russia by Non-Resident Individuals, 2006QII-2007QI
(Millions of U.S. Dollars)

	2006QII	2006QIII	2006QIV	2007QI	2006/7	% of CIS
Armenia	87	128	146	77	438	11.7
Azerbaijan	71	99	113	77	360	9.6
Belarus	7	9	9	8	33	0.9
Georgia	50	67	69	55	241	6.4
Kazakhstan	19	23	24	17	83	2.2
Kyrgyzstan	67	95	90	59	311	8.3
Republic of Moldova	66	100	102	58	326	8.7
Tajikistan	116	203	192	103	614	16.4
Turkmenistan	2	3	3	2	10	0.3
Ukraine	146	190	222	162	720	19.2
Uzbekistan	125	214	175	91	605	16.2
CIS-11 Total	756	1,131	1,145	709	3,741	100

Source: Russian Central Bank.

As a first estimate, the calculated country distribution for cross-border financial transfers (as calculated in table 11 and reproduced as data column one in table 16) is applied to the annual values of Russian remittances to the CIS (the top row of table 16) in order to obtain individual country estimates of Russian remittances. These estimates are presented in the non-shaded sections of table 16. The 2006 distribution, since it is the only one that is available, is applied backward to the earlier years (2001-2005). An alternative procedure might be to use migrant flows to somehow adjust this distribution for earlier years, but our assessment is that the migration numbers are so unreliable that they would not improve the estimates.

Table 16

Estimation of CIS Remittances from Cross-Border Payments from Russia through Postal Offices or Money Transfer Companies, 2000-2006
(Millions of U.S. Dollars)

	Distribution	2006	*2005*	*2004*	*2003*	*2002*	*2001*	*2000*
Russian Remittances to the CIS-11	100.0	8,868.0	4,679.0	3,351.0	1,663.0	1,050.0	836.0	445.0
Armenia	11.30	1,001.8	528.6	378.5	187.9	118.6	94.4	50.3
Azerbaijan	8.39	743.8	392.4	281.1	139.5	88.1	70.1	37.3
Belarus	0.87	76.9	40.6	29.1	14.4	9.1	7.3	3.9
Georgia	6.84	606.5	320.0	229.2	113.7	71.8	57.2	30.4
Kazakhstan	1.65	146.3	77.2	55.3	27.4	17.3	13.8	7.3
Kyrgyzstan	8.23	730.2	385.3	275.9	136.9	86.5	68.8	36.6
Republic of Moldova	9.73	863.0	455.3	326.1	161.8	102.2	81.4	43.3
Tajikistan	17.56	1,557.0	821.5	588.3	292.0	184.3	146.8	78.1
Turkmenistan...................................	0.34	30.2	15.9	11.4	5.7	3.6	2.8	1.5
Ukraine	17.35	1,538.8	811.9	581.5	288.6	182.2	145.1	77.2
Uzbekistan	17.74	1,573.5	830.2	594.6	295.1	186.3	148.3	79.0

Source: Calculation by the authors.

A fuller discussion of how these numbers correspond to the reported CIS remittance inflows in table 3 will follow after introducing several other factors. However, at his juncture it is worth pointing out that these estimated Russian remittances are greater than the total reported remittances for five of the CIS-11 including Armenia, Georgia, Kyrgyzstan, Tajikistan, and Ukraine; in four of the cases (all but Georgia) the estimates are larger by over 50 per cent. In addition, of course, these economies are likely to get remittances from other countries as well, including non-CIS countries; adding these to the Russian estimates would further increase these estimated inflows above their reported values. In addition, this procedure provides some estimates for Turkmenistan and Uzbekistan; two countries for which previously there were no reliable estimates. These estimates suggest that remittances are quite small for Turkmenistan as one might possibly expect from the "isolationist" policies that it has followed. This result is further supported by the fact that the estimated migrant stock (table 8) in Russia from Turkmenistan is the smallest of any of the CIS. Uzbekistan, on the other hand, is found to have the largest remittance inflow in the CIS (about equal to Tajikistan or Ukraine); its estimated stock of migrants in Russia is sizable but far from the largest. One estimate that seems quite low is that of Belarus. Belarus has a sizable migrant population in Russia, but for some reason they do not appear to be using either the banking or money transfer services to send funds home.

After Russia, the only other economy with significant remittance outflows is Kazakhstan; while Russia accounted for 71 per cent of total CIS outflows in 2005, Kazakhstan accounted for 20 percent with the remainder of the CIS accounting for

less than 10 per cent (table 2). Therefore in order to estimate CIS remittance inflows, it is necessary to account for how Kazakhstan's outflows are distributed to the other CIS. A very rough estimate of this is possible using the Kazak money transfer data provided in the previous section. Unfortunately, the personal money orders remittance flows for which there is bilateral data are only one of the three components of total remittances. Thus the country distribution of the other two flows must somehow be estimated based upon the distribution of the remittance component. Kazakhstan's total remittance data for 2003-2006 broken up into the three components is presented in table 17. The top row of inflows and outflows (labelled as remittances) corresponds to the data in table 12. For inflows, this component for which there is bilateral information, accounts for only about a third of the total; for outflows, however this component accounts for well over one half of the total. The country distribution of the money order remittance flows is significantly different in 2003 and 2004. Although there is no available information about the country distribution of the other two flows, some insight about this can possibly be gained from examining the CIS/non-CIS distribution for these three components which is available for Russia.

Table 17

Kazakhstan's Remittances by Component 2003-2006

	Millions $				Per Cent of Total			
	2003	*2004*	*2005*	*2006*	*2003*	*2004*	*2005*	*2006*
Inflows								
Remittances	38.3	53.5	55.8	73.0	26.0	32.3	31.2	38.9
Compensation	3.9	3.9	6.3	10.6	2.6	2.3	3.5	5.7
Transfers	105.3	108.5	116.4	103.9	71.4	65.4	65.2	55.4
Total Inflows	147.5	165.8	178.4	187.5	100.0	100.0	1000.0	100.0
Outflows								
Remittances	421.1	805.8	1,158.5	1,999.5	52.5	59.5	57.9	65.9
Compensation	229.8	413.7	734.7	961.9	28.7	30.6	36.7	31.7
Transfers	150.8	134.2	106.9	74.9	18.8	9.9	5.3	2.5
Total Outflows	801.7	1,353.7	2,000.0	3,036.3	100.0	100.0	100.0	100.0

Source: IMF Balance of Payments Statistics Yearbook.

The percentage of Russian remittance flows to the CIS relative to the world for the three remittance components varies by component and for each component the CIS percentage has varied significantly by year (see table 5). Thus any precise statements about the CIS distribution of Russian flows are difficult to make. Overall however, the CIS percentage is much greater (about twice) for compensation and remittances than capital transfers, and the former two have roughly a similar CIS percentage although recently it has been higher for remittances. If we apply the same CIS percentage from Kazakhstan's workers' remittance outflows (10.3 per cent for 2003 and 17.6 per cent for 2004, table 12) to their compensation outflows, and apply a percentage of one-half of those above (5.2 per cent to 8.8 per cent) to capital transfer outflows, an estimate for overall Kazakhstan remittance outflows to the CIS is possible. This would yield the estimates provided in table 18.

The total outflows to be CIS are estimated to be rather small; more importantly but consistent with Kazakhstan's own remittance data, most of the outflows go to Russia. Thus for estimating outflows to the other CIS, the evidence would tend to suggest that Kazakhstan outflows are very small. This conclusion is of course at variance with anecdotal evidence about migrants from the other central

Asian CIS although the estimated migrant stock (table 8) from these economies is not particularly significant (Uzbekistan may be an exception). As discussed, the possibility that money transfers from Kazakhstan to the other CIS are being recorded as going to Russia, because they are being conducted through a Russian money transfer service, needs to be addressed; but that is beyond the scope of this paper.

Table 18
Estimates of Kazakhstan's Remittance
Outflows to the CIS 2003-2004
(Millions of U.S. Dollars)

	2003	2004
Worker Remittances	43.20	141.97
Compensation	23.58	72.89
Capital Transfers	7.84	11.81
Total CIS	74.62	226.67
Total World	801.7	1,353.7
CIS Per Cent of World	9.31	16.7

Therefore we conclude that CIS-11 remittances to the other CIS-11 are quite insignificant and can be largely ignored. The issue remains of how to estimate non-CIS flows especially in the cases where estimated inflows from Russian are greater than reported total inflows. Estimates of CIS emigration show that approximately one-quarter of emigrants from most of the CIS (including Russia) have gone to non-CIS countries (table 8). Given that most of these destination countries probably have per capita incomes as great or greater than Russia, the migrants' ability to send home remittances would be at least as great.

Despite the fact that the population data on migrants suggest that three-quarters of Russian emigrants have gone to other CIS countries, Russia receives approximately three-quarters of its remittance inflows from outside the CIS (table 5). Given that the other CIS countries have a similar percentage of emigrants outside the CIS, it is reasonable to expect that they also receive a sizable proportion of their remittances from outside the CIS. Also we have remittance inflow data (only the worker remittance component) for Kazakhstan, and they report that 68 per cent of inflows in 2004 (83 per cent in 2003) came from outside the CIS. Likewise, the Moldovan data suggest that a majority of inflows come from outside the CIS. Although there is not sufficient data with which to make reliable estimates of non-CIS inflows for all of the CIS-11, what can be concluded is that the inflows from Russia do not represent a reasonably close estimate of total inflows to the CIS-11. While only speculative, the available evidence would tend to suggest that it is quite possible that inflows from Russia represent only a half of total inflows into the CIS-11. The Russian proportion may be greater for central Asia as compared to the Caucasus and eastern Europe, but there is no firm empirical basis for making this assessment.

Combining all this information, it would appear reasonable to speculate that the estimates of Russian remittances to the CIS-11 as provided in table 16 could be doubled (based on non-CIS inflows) in order to arrive at a figure for remittance inflows for each of the CIS-11. This produces some very large estimates relative to officially reported remittance inflows. For the CIS-11 overall estimated remittance

inflows are three times their reported value. Some of this is due to the fact that we have values for Turkmenistan and Uzbekistan; but even without them our estimates are 2.5 times larger than official inflows. The magnitude of increase varies significantly amongst the CIS-11. The largest estimate relative to official figures is for Armenia where we have an estimate of $2 billion while official inflows for 2006 are only $505 million. Thus our estimates are four times bigger than the official estimates. On the other hand, we have no reason to question the official Belarus remittance data. Our estimates for the other CIS-11 relative to official inflows are 83 per cent above for Azerbaijan, 150 per cent above for Georgia, 57 per cent above for Kazakhstan, 225 per cent above for Kyrgyzstan, 46 per cent above for Moldova, 206 per cent above for Tajikistan, and 270 per cent above for Ukraine.

VI. Implications and Summary

A major objective of this paper has been to examine the remittance data released by the governments of the CIS economies and determine their overall consistency and point out where the data appear to be incorrect as well as estimate likely values for missing values. Various other sources of data, thought to be highly correlated with remittances, have been introduced including money transfers and migration. What then can we conclude about CIS remittances? Foremost, the data on remittances as released by their central banks is fundamentally inconsistent; some of it must be incorrect because there is no logical way to reconcile them. This is not a matter of five or ten percent, but often a factor of several hundred per cent. It is difficult to isolate where the errors lie as it comes down to a "he said" and "she said" type of situation, and it is impossible for us to assess whose data practices are the most accurate. Unfortunately because of the large number of inconsistencies and missing or unknown data, it is not possible to determine with a high degree of confidence where the problems actually lie. Questions about the accuracy of remittance data are widespread and it is possible that a close examination of this issue for other regions would turn up many of the same inconsistencies. Due to questions about remittance data, other researchers have suggested their estimation based upon the stock of migrants. We cannot assess the overall accuracy of that approach, however, it seems ill suited for the CIS region for various reasons. Most importantly, there has been substantial migration for non-economic reasons and much of the economic migration is undocumented. The money transfer data provided by Kazakhstan, Moldova, and Russia are promising in that they provide important bilateral information that is useful for the analysis of remittances more generally and as a method of reconciling inconsistencies, but there are limits to what can be deduced from them and they appear to have some anomalies of their own. Attempts to improve data on remittances need to be pursued along numerous dimensions, but the use of anonymous surveys might be especially promising given that those making and receiving remittances often have valid reasons for trying to conceal these flows by avoiding official channels such as banks or money transfer services. Increased micro analysis of individual behaviour would allow various other pieces of macro data to be better assessed and reconciled.

With these qualifications in mind, the analysis here suggests that a number of the CIS are significantly undercounting remittance inflows. It is reasonable to suggest (but far from certain) that actual remittances for some of these economies could easily be two or even more times what is commonly reported. There are at least three other

studies that have examined remittances using other methods primarily based upon survey data, that have also concluded the official estimates are too low by a factor of two or more. These include Mellyn (2003) for the Philippines, Korovilas (1999) for Albania, and most relevant for this study, Roberts and Banaian (2004) for Armenia.

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Appendix Table 1

Official Development Aid
2001-2005
(Millions of U.S. Dollars)

	2001	2002	*2003*	*2004*	*2005*
Armenia	198	293	249	254	193
Azerbaijan	232	349	301	176	223
Belarus	-	-	-	-	54
Georgia	300	313	226	314	310
Kazakhstan	148	188	270	268	229
Kyrgyzstan	189	186	200	261	268
Republic of Moldova	122	142	118	120	192
Tajikistan	169	168	148	243	241
Turkmenistan	72	41	27	37	28
Ukraine	-	-	-	-	410
Uzbelkistan..	153	189	195	246	172

Source: OECD.

1. Balance of payments data

Data on migrant remittances have been routinely provided by the Central Bank of Russia as part of its balance of payment releases. Quarterly and annual data are available, with a breakdown between CIS and non-CIS countries. Total remittances can be obtained as the sum of compensation of employees (non-residents) and current and capital transfers by migrants (residents).

(See balance of payment excel file for quarterly and annual data)

In addition to the balance of payment data, the CBR has started more recently to provide additional information, sometimes with a national breakdown of the origin and sources of flow, on cross-border individual payments. It is important to note that the coverage of these flows does not correspond with the definition of migrant remittances.

2. Cross-border operations by physical persons (residents and non-residents)

This covers all type of payments between physical persons through the banking system, postal offices and money transfer companies. A distinction between CIS and non-CIS is also made.

(See crossT-border operations, total)

A country quarterly breakdown is available since 2006QII.

(See total cross-border individual payments by country)

This presentation includes not only items that should be considered remittances, such as compensation of employees and transfers but also payments for goods and services. For residents only, a breakdown of operations by finality is available (payment of goods, services, wages, transfers, self-payments, other).

(See total cross-border by individual residents by type)

There are two other important differences with remittances:
a. It includes only actual flows. There is no allowance for unrecorded transactions. Only that part of the compensation of employees that is transferred abroad through the banking system or other organisations is included. Part of the compensation of employees, as recorded in the balance of payments, may not be transferred to the country of origin but used to pay for food and accommodations (recorded as exports).

b. It does not include non-cash transactions, i.e. there is no estimation for remittances in the form of cash physically carried by individuals across borders.

3. Cross-border payments through postal offices and money transfers companies.

This records actual operations but excluding those that take place through the banking system. As usual, a distinction between CIS and non-CIS transaction is made. Includes money transfers by the following services: Anelik, BLIZKO, Contact, InterExpress, Migom, MoneyGram, PrivatMoney, Travelex Worldwide Money Ltd, UNIStream, Western Union, AsiaExpress, Allur, Bistraya Pochta, GutaSprint, Zolotaya Korona, LIDER.

(See cross-border payments through postal offices and money transfer companies)

A country quarterly breakdown is available since 2006QII. The limitations discussed above regarding its relations with the concept of migrant remittances also apply.

(See cross-border payments through postal offices and money transfers companies by country)

Cross-border payments

Remittances

Individual's purchase of goods (imports) paid by bank

Seasonal and migrant compensation transferred home by bank

Seasonal and migrant compensation wired home

Physical cash carried across border

Individual's purchase of goods (imports) paid by wire

Seasonal compensation spent or taxed locally

Cross border payments through post and transfer services

Migrant compensation spent or taxed locally

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