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**Remittances from Russia:  
Macroeconomic implications of possible  
negative shocks**

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The German Economic Team Moldova ("GET Moldova"), which has been active in Moldova since 2010, advises the Moldovan government and other state authorities such as the National Bank of Moldova on a wide range of economic policy issues and on financial sector development. Our analytical work is presented and discussed during regular meetings with high-level decision makers. GET Moldova is financed by the German Federal Ministry for Economic Affairs and Energy.

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## Remittances from Russia: Macroeconomic implications of possible negative shocks

### Executive Summary

Remittances are an important financial inflow to Moldova. In 2013, Moldova received net remittances of USD 2.6 bn, amounting to almost 32% of GDP. Remittances from Russia of USD 1.5 bn made up almost 60% of total remittances received by Moldova. As remittances from Russia are currently perceived to be subject to severe cyclical and political risks, this paper investigates the short-term macroeconomic effects of remittances shocks. We do not make any judgement on the likelihood of shock magnitudes but analyse a range of different shock scenarios corresponding to the loss of 5%, 10%, 25% and, for reference only, 50% and 100% of remittances from Russia.

We find that there will be limited effects of possible shocks on GDP, but strong effects on consumption expenditures and hence the standard of living of the population. A shock corresponding to the loss of 5% of remittances from Russia will lead to a reduction of consumption expenditures of almost the same magnitude, by USD 75 m or 0.95% of GDP. The effect on GDP is limited to 0.17%, as GDP is only indirectly affected by remittances and much of the aggregate demand reduction affects imports rather than domestic production. Particularly because of reduced imports, the government budget balance will also be affected. A 5% shock would lead to a reduction of government revenues by 0.18% of GDP (see table below).

**Table ES 1: Macroeconomic effects of remittances shocks**

Shock: Reduced remittances from Russia		Effects					
		GDP		Consumption		Government Revenues	
%	USD m	USD m	%	USD m	% of GDP	USD m	% of GDP
-5.0	-76	-14	-0.17	-75	-0.95	-14	-0.18
-10.0	-153	-27	-0.34	-150	-1.90	-28	-0.36
-25.0	-382	-67	-0.84	-377	-4.75	-71	-0.89
-50.0	-764	-131	-1.65	-755	-9.52	-141	-1.78
-100.0	-1,528	-250	-3.15	-1,521	-19.17	-281	-3.55

*Source: Own Calculations*

To validate, we also review the 2009 global economic crisis, which led to a strong combined shock in Moldova through exports, FDI and remittances. In line with the results of our model, the combined shock caused only a limited negative response of GDP whereas consumption, investments (caused particularly by the FDI and export decreases) and imports dropped sharply. Analysis of the 2009 crisis thus broadly confirms our model's results.

In response to a possible remittances shock we recommend a continuation of the monetary policy of inflation targeting (and hence flexible exchange rates) to avoid increases in the current account deficit and contribute to external stability. Under consideration of obligations with the IMF and other relevant partners, fiscal contraction should be avoided, if possible. Furthermore, new sources of income should be explored both abroad (work permits in third countries) and domestically (active drive for more FDI) to compensate part of the income loss associated with a shock.

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## **1 Introduction**

Remittances – money transfers to the home country from citizens working abroad – are a major source of income for the Republic of Moldova. According to our calculations, based on data by the National Bank of Moldova, net remittance inflows attained a value of USD 2.6 bn in 2013, amounting to almost 32% of GDP. Even higher values were recorded before the global financial crisis of 2008/2009. Remittances by Moldovan citizens working in the Russian Federation make up a very high share of currently almost 60% of the total remittance income of Moldova.

For the Moldovan economy, the remittance income is highly relevant both from the perspective of domestic economic development – as a major determinant of domestic consumption demand and associated tax revenues – and from the perspective of the international balance of payments. The geographically highly concentrated dependency on remittances may, however, also make the Moldovan economy vulnerable to exogenous shocks transmitted through the remittances channel.

Due to slow growth in the Russian Federation, the completion of construction works related to the Sochi 2014 Winter Olympic Games as well as the possibility of disruptions due to current political tensions, remittance flows from Russia to the Republic of Moldova may decline significantly in the near future (“negative remittances shock”). This paper makes a qualitative and a quantitative assessment of the direct macroeconomic impact of shock caused by reduced remittance flows (in the following referred to in shorthand as “the shock” or “remittance shock”) from the Russian Federation on the economy of Moldova under different scenarios.

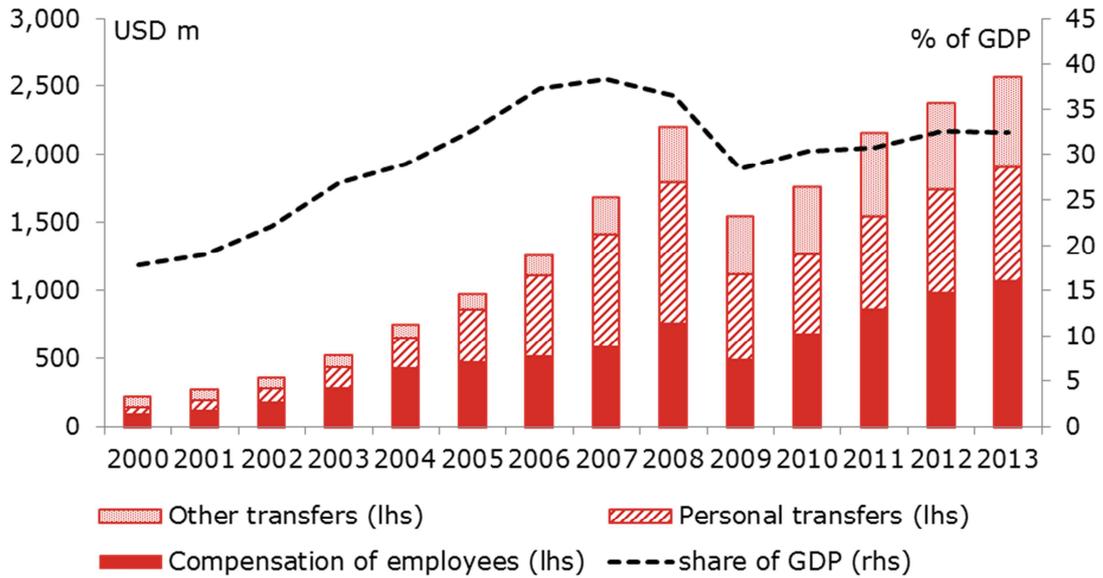
## **2 Remittance flows to Moldova: Description**

Moldova is among the group of countries with the highest remittance inflow/GDP ratio in the world. According to the World Bank, Moldova ranked 5<sup>th</sup> globally in 2012, clearly behind Tajikistan and the Kyrgyz Republic, but with values similar to those of Nepal, Lesotho or Armenia<sup>1</sup>.

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<sup>1</sup> World Bank, 2013. Tajikistan, 48%, Kyrgyz Republic 31%, Nepal and Lesotho 25%, Moldova 24%, Armenia 21%. Due to different definitions of remittances, World Bank data for Moldova differs from the National Bank data used in this paper.

**Figure 1: Net remittances to Moldova, 2000-2013**

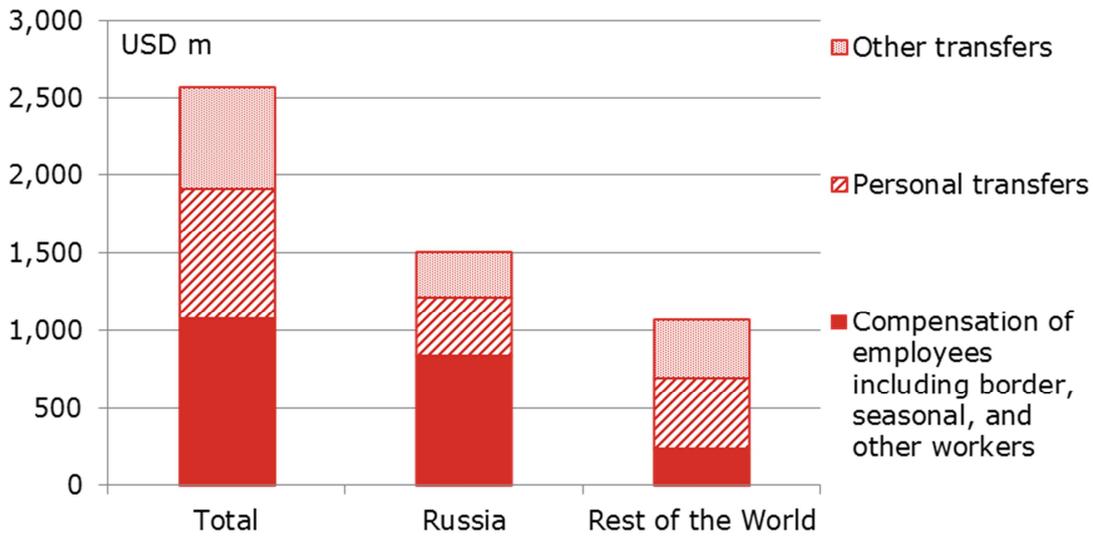


Source: National Bank of Moldova, own calculations

Net remittance inflows to Moldova have steadily risen since the start of the Millennium until the global financial crisis in 2008/2009 and have since recovered considerably, amounting again to USD 2.6 bn in 2013, equivalent to 32% of GDP. As remittances do not correspond to productive activities conducted in Moldova, they are not a *part* of Moldavian GDP, but form *additional* financial resources that boost aggregate demand in Moldova.

Note that quantifying the total amount of remittances is no trivial matter and several approaches exist. Annex 1 describes in more detail the main approaches as well as advantages and disadvantages of the method chosen in this paper. We calculate net remittances based on the balance of payments statistics of the National Bank of Moldova, using a slightly different calculation method than the National Bank for data availability reasons. This data should correctly represent source country shares. However, the total figures are biased upwards. Some non-remittance inflows and offsetting streams of money cannot entirely be deducted from remittance figures within this approach. Our quantitative shock analysis is thus conservative as it over- rather than underestimates the sensitivity of the Moldovan economy to remittance shocks.

**Figure 2: Remittances from Russia, 2013**



Source: National Bank of Moldova

Russia plays a dominant role as a source country for remittances to Moldova. Remittances from Russia accounted for USD 1.5 bn, 58.4% of total remittances, in 2013. This dominance of Russia as a source country is due to the high volume of labour migration from Moldova to Russia, not due to the average value of remittances from Russia.

According to the World Bank, remittances per migrant from Russia to Moldova are significantly lower than those from EU countries – around 15% lower compared to Italy and 20% lower when compared with remittances from Germany.

Russia remains the most important destination for labour migration from Moldova due to a – up until today – liberal policy on migration from Moldova, language reasons and relative ease of finding work in the construction industry or agriculture. Estimates of Moldavian labour migrants in Russia differ considerably according to the sources used. The two most recent reliable sources estimate the number of Moldovan migrants in Russia at 223,600<sup>2</sup> or 206,000 long-term labour migrants (56% of Moldavian total long-term migrants) and 88,000 seasonal migrants (81% of total)<sup>3</sup>.

<sup>2</sup> Labour Force Survey, National Bureau of Statistics, 2013

<sup>3</sup> NEXUS Migrant Survey, 2013

### 3 The link between remittances and the economy: Qualitative analysis

Macroeconomic effects of a remittances shock can be structured in two categories:

- **Domestic macroeconomic effects:** Remittances are a driver of key aggregates such as consumption, investment, GDP and tax revenues.
- **External sector:** Remittances are a very important cash inflow to Moldova. A shock will have a pronounced effect on the current account deficit, the exchange rate or a combination of both.

Assessing the effect of a shock on the standard of living requires going beyond t macroeconomic variables and thus the scope of this paper. It requires extensive analysis of the distribution of remittance income, of labour market effects and adaptation. Nevertheless, reductions in consumption expenditures are a key indicator for the effect on the standard of living and should receive particularly strong attention in the following.

The macroeconomic impact of a remittance shock is determined by how remittance income is used by recipients and what possibilities for compensating income losses exist. Survey data on the use of remittances indicates that roughly half of remittance income is directly spent on consumption and the remaining half is saved and invested in a number of various ways.

**Table 1: Immediate usage of remittance income by recipients**

Consumption	49%
Saving	46%
...in Real Estate	25%
...in Cash	14%
...in Banks	7%
Investment in Business	5%
Sum	100%

*Source: Nexus (2013), IASCI/CIVIS (2010) for Bank/Cash separation of savings*

Although around half of the income is immediately used for consumption, the total impact on consumption will be larger due to second-round effects (e.g. money spent on real estate investments will be spent on consumption by the sellers of properties). The distinction between saving and investment in table 1 is further warranted because of the large proportion of cash savings. Other than money

saved in a bank, which banks use to provide credit to an economy, cash savings are an economically inactive store of value. Conversely, when savings are used to compensate for the negative effect of an income shock on consumption, decumulation of savings in cash other than savings in bank accounts will not reduce credit liquidity and investment volume.

### 3.1 Domestic macroeconomic variables

As the lion's share of remitted money is used for **consumption**, the effect of a negative remittance shock on this variable can be expected to be huge. As consumption is a key component of aggregate demand, this will also have a negative impact on the Moldovan GDP. However, when faced with a sudden income decrease, consumers will aim to stabilise consumption by using previously saved money in the short run and by aiming to replace lost income sources in the longer run. For example, labour migrants, who lost their earnings opportunity in one country, will look for a job in another country. Also, the pass-through from consumption expenditures to the Moldovan GDP is sharply reduced because of the high import share in Moldovan consumption.

The second immediate impact of a remittance shock will be on **investment**. Business investments and bank saving constitute 12% of the use of remittances. Cash saving and real estate investments by purchasing existing properties are not investments in a macroeconomic sense. Using up savings for consumption purposes will have only a limited negative impact on investment volume as most of this will come from cash savings rather than out of bank accounts. Compared to the consumption variable, the effect of a remittance shock on investment will thus probably be smaller, but still significant.

The impact of remittances on **GDP** stems from the decrease in aggregate demand through consumption and investment decreases. However, this effect is substantially reduced because of the high import dependency of the Moldovan economy. The Moldovan economy imports around 60% of its total final consumption. This indicates that around the same share of consumption and investment expenditures made from remitted money will be used for buying imported goods and services, thus reducing the impact of a remittances shock on the domestic economy. Despite of the high import share and the low share of savings in Banks reducing the GDP impact, it is to be expected that due to large

extent of current remittance volume to Moldova, the Moldovan GDP remains vulnerable to shocks through the remittance channel.

Finally, remittance shocks are likely to cause a strong effect on **public finances**, particularly because of the high importance of taxes on consumption for Moldovan government revenues. In 2012, internal taxes on goods and services (i.e. largely VAT) made up 43% of total government revenues, amounting to 16% of GDP. As a remittance shock will cause a sharper decline in consumption (which includes imports) than GDP, particularly VAT revenues will decline sharply.

### 3.2 External Sector: Balance of Payments and Exchange Rate

One of the most immediate effects of a reduction in remittance flows will be on the **current account**. As the current account deficit already is at an elevated level of around 7% of GDP, further increases in the current account deficit could put the international financing of Moldova at risk. The current account impact will be moderated by reduced imports due to the loss of consumer income.

The current account impact is strongly interrelated to adjustments in the **exchange rate**. The current monetary policy of inflation targeting implies a flexible exchange rate, provided that no large-scale price pressures are transmitted through the imports channel. Under current policy, a remittance shock would lead to a depreciation of the Lei, compensating most or all of the current account shock as the exchange rate adjusts to a new equilibrium in the foreign exchange market.

## **4 Macroeconomic implications of remittances shocks: Quantitative analysis**

We now quantitatively assess the annualised, short-run macroeconomic effects of an exogenous, negative shock in remittances to Moldova from Russia. We do not maintain a position on whether or at what magnitude a remittance shock is to be expected. We therefore provide values for a range of different shock magnitudes of 5%, 10% and 25% (around the order of magnitude of the 2009 shock) as well as extreme scenarios of 50% and 100% of remittances to Moldova from Russia. As the model is linear, effects can be easily extrapolated for any other shock magnitude.

#### 4.1 Modelling strategy

For transparency reasons, we do not employ a general equilibrium model, which would necessitate a complex computation of results without transparency of effect channels. Instead, we model the immediate impact of the shock on consumption, investment and real estate channels and compensation from dissaving. The model accounts for immediately reduced imports due to the consumer income loss as well as the use of savings to stabilise consumption. Substitution of lost earnings opportunities as well as a response of the domestic supply side to additional labour force capacities due to returning migrants are not considered, as these are unlikely to happen in the short run.

Our model builds on national accounts and budget data from the National Bureau of Statistics, remittance data from the National Bank of Moldova and the latest MEGA 2014 GDP forecast of 2.1% real GDP by the think-tank Expert Grup. As remittances data includes some overestimation of remittance inflows, our results should be seen as a conservatively high estimation of the macroeconomic effects of remittance shocks.

Some assumptions on the adjustment behaviour of exchange rate, imports and exports are required. If the Lei depreciates against foreign currencies after a shock, the current account effect will be partially or fully neutralised. If, however, the exchange rate were artificially stabilised, the current account deficit would strongly increase.

As the current monetary policy of inflation targeting implies a flexible exchange rate under some constraints, our model works on the assumption that a full exchange rate adjustment takes place and the pre-shock current account balance is restored. The exchange rate reaction depends on assumptions regarding import and export elasticities. We assume a short run import elasticity of 1 and an export elasticity of 0.2. This reflects that a large part of imports is used for consumption – which implies a relatively high sensitivity of demand to price or exchange rate changes – and that constraints such as market access restriction and short-run production inflexibilities restrict export sensitivity in the short run.

We also provide the values for another, hypothetical scenario, in which exchange rates remain constant. This scenario helps distinguish the imminent effects of the shock – caused by the loss of consumer income – from the effect of current account

rebalancing. It also illustrates the space in which the adjustment of variables may differ from the baseline scenario if current account rebalancing occurs only partially, for example due to inertia in variable reaction or policy choice.

#### 4.2 Quantitative analysis

Due to the high level of remittances from Russia, already smaller remittance shocks take significant magnitudes. A 5% shock implies a loss of USD 76 m in remittance inflows, equivalent to almost 1% of Moldovan GDP. Total baseline remittances from Russia in 2014 according to our data attain the value of USD 1.528 bn, almost 20% of Moldovan GDP.

**Table 2: Annualised macroeconomic effects of remittance shocks with flexible exchange rate and constant current account balance**

Shock: Reduced remittances from Russia			Effects								
			GDP		Consumption		Investments		Government Revenues		Exchange rate
%	USD m	% of GDP	USD m	%	USD m	% of GDP	USD m	% of GDP	USD m	% of GDP	% change of USD/MDL
-5.0	-76	-0.96	-14	-0.17	-75	-0.95	-25	-0.31	-14	-0.18	-0.96
-10.0	-153	-1.93	-27	-0.34	-150	-1.90	-50	-0.63	-28	-0.36	-1.94
-25.0	-382	-4.81	-67	-0.84	-377	-4.75	-124	-1.57	-71	-0.89	-4.95
-50.0	-764	-9.63	-131	-1.65	-755	-9.52	-249	-3.14	-141	-1.78	-10.29
-100.0	-1,528	-19.26	-250	-3.15	-1,521	-19.17	-500	-6.30	-281	-3.55	-22.34

Source: Own calculations

#### 4.3 Domestic macroeconomic effects: Weak effect on GDP, but strong effects on consumption and government budget balance

The principal domestic effect of the shock is the reduction of domestic **consumption**. A 5% remittances shock of USD 76 m leads to a decrease in consumption expenditure by USD 75 m. The combination of imminent consumer income loss and current account rebalancing thus implies that the reduction in consumption is of almost the same value as the shock itself. **Investments** also decrease noticeably. In the case of a 5% shock (0.96% of GDP), investments decrease by 0.34% of GDP.

The effect on **GDP** is much smaller compared to the consumption effect. Only 20% of the shock is transmitted into GDP – a remittance shock of 0.96% of GDP leads to a GDP decrease by 0.17%. The reason for the relatively moderate GDP effect is that

more than half of the aggregate demand decrease is borne by import demand. The considerable international openness of the Moldovan economy thus helps reduce the shock's impact on GDP. The increase in export volume following an exchange rate adjustment further reduces the effect of a remittance shock on Moldovan GDP.

A significant effect will occur on the **public budget**. Government revenues decrease particularly due to the drop in consumption, lowering VAT and similar revenues, and the drop in GDP, affecting income tax and social security revenues. A 0.96% of GDP shock will cause (without assessing any possible increases in expenditures) the government budget balance to deteriorate by 0.18% of GDP.

#### 4.4 External sector: Strong reaction of exchange rate and imports

Under the current monetary policy of inflation targeting, the exchange rate of the Moldovan Lei is in effect flexible. An increase of the current account deficit due to a remittances shock would thus cause the Lei to depreciate. This would then allow the current account to rebalance as imports decrease and exports increase.

The magnitude of the exchange rate adjustment required to rebalance the current account at its pre-shock level is crucially determined by the import and export elasticities used in the calculation. The higher the sensitivity of imports and exports to the exchange rate is, the lower the **exchange rate reaction** can be. As mentioned above, we use an import elasticity of 1 and an export elasticity of 0.2 here to capture the characteristics of the trade flows to and from Moldova. Under these elasticities, the magnitude of the exchange rate adaptation is roughly equivalent to the shock's size in relation to GDP.

An important effect of the exchange rate adjustment is that it affects not only the *volume* of imports, but also their *real value*. The loss in consumption stated in the above table does not yet take into account that the real value of the imports has decreased further due to less goods being imported for the same amount of Moldovan Lei. The exchange rate adjustment thus can considerably amplify the loss in **standard of living**, particularly for large shocks. A shock of 0.96% of GDP leads to a loss in real consumption value of 1.4% that includes the effects of the income loss, import reduction and real value decrease due to the exchange rate adjustment.

The assumption of rebalancing of the current account because of the flexible exchange rate has important **consequences for the effect of the shock on the**

**domestic macro variables.** The import reduction required to achieve a current account rebalancing implies a considerable decrease of consumption and investment expenditures (on top of the direct shock effect of reduced income) as large shares of these expenditures are spent on imported goods and services. On the other hand, the growth of exports due to the depreciated exchange rate lessens the shock's negative impact on GDP.

The strength of the effect of current account rebalancing on consumption, investment and GDP depends on the relation of import and export elasticities. If the relative elasticity of Moldovan exports to the exchange rate were larger in comparison to imports, a smaller reduction in imports (and hence consumption and investment) would be required to rebalance the current account as export increases would close a larger part of the gap.

#### 4.5 Composition of the macroeconomic effect: Relative contributions of income decrease and exchange rate adjustment

In order to provide more transparency about the relation of the direct impact of the shock – the reduction of disposable income – and the impact of current account rebalancing, we finally present the outcome values of a hypothetical scenario in which the exchange rate is held constant and the current account deficit consequently increases in response to a shock. As exchange rate adjustment may be only partial and pressures for exchange rate fixing might arise in the event of a shock, this scenario also gives indications of current account effects in these cases.

**Table 3: Hypothetical scenario – macroeconomic effects without exchange rate adjustment**

Shock: reduced remittances from Russia			Effects									
			GDP		Consumption		Investments		Government Revenues		Current Account	
%	USD m	% of GDP	USD m	%	USD m	% of GDP	USD m	% of GDP	USD m	% of GDP	USD m	% of GDP
-5.0	-76	-0.96	-20	-0.25	-37	-0.47	-12	-0.15	-10	-0.12	-47	-0.59
-10.0	-153	-1.93	-40	-0.51	-75	-0.95	-24	-0.31	-20	-0.25	-94	-1.18
-25.0	-382	-4.81	-101	-1.27	-187	-2.36	-61	-0.77	-49	-0.62	-234	-2.95
-50.0	-764	-9.63	-202	-2.54	-375	-4.73	-122	-1.54	-98	-1.23	-469	-5.91
-100.0	-1,528	-19.26	-404	-5.09	-750	-9.45	-244	-3.08	-196	-2.47	-937	-11.82

Source: Own calculations

It is clearly visible in this scenario that already for limited shocks, the current account deficit increases quite sharply. That it does not increase by exactly the shock size is due to partial neutralisation of the shock in the import channel. A share of remittances (ca. 50%) is finally spent on imported goods and services. In the event of a shock, this reduces the shock impact on the current account deficit before exchange rate adjustment. Still, the impact on the current account deficit is significant. Our analysis shows that without exchange rate adjustment, larger shocks would seriously endanger the financing of Moldova's current account.

**Table 4: Decomposition of macroeconomic effects of a shock of 1% of GDP**

	Effect in % of GDP		
	Income loss	Current account rebalancing	Total
GDP	-0.26	0.09	-0.18
Consumption	-0.49	-0.49	-0.98
Investment	-0.16	-0.16	-0.32
Government revenues	-0.13	-0.06	-0.19

*Source: BE calculations*

Table 4 presents a decomposition of a shock's effects through the income loss and current account rebalancing channels. The negative effect of a shock on consumption and investment (and to a lesser degree on the government budget) is considerably increased by current account rebalancing as imports are further reduced. The effect on domestic GDO, on the other hand, is reduced by current account rebalancing due to increased exports.

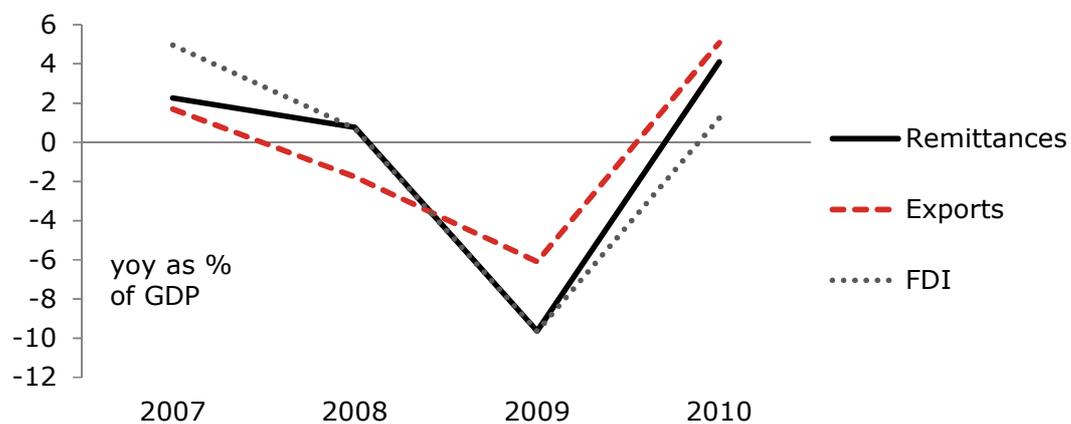
#### 4.6 Conclusion

Our analysis shows that the main effect of a remittance shock will be a sharp reduction in consumption and consequently the standard of living, further increased by a rise in import prices due to exchange rate adjustment. Also, fiscal effects of considerable magnitude should be expected. The effect on GDP is, however, quite limited, as a large share of the reduction in aggregate demand affects the demand for imported goods and services.

### Box 1: Macroeconomic Effects of the combined external shock in 2009

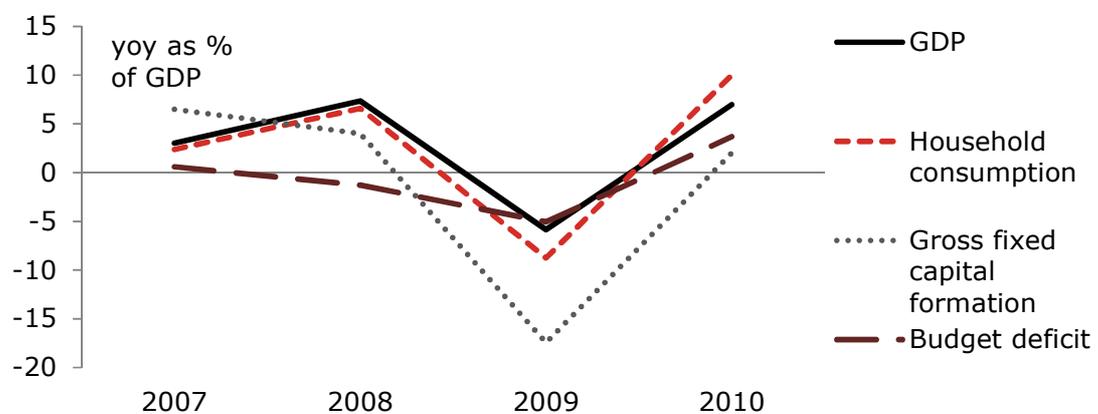
The crisis of 2009 is an important example to study the effect of shocks transmitted through the balance of payments on the Moldovan economy. As the banking system of Moldova was almost unaffected by the global financial crisis that started in 2008, the global economic crisis was transmitted into Moldova through three shocks: Reductions in remittances, exports and foreign direct investment. Comparing the combined effects of these three shocks on the domestic and external sector macroeconomic variable with our model of the effects of remittance shocks serves as a benchmark whether the effect sizes we modelled are credible.

**Figure 3: Economic shocks in 2009**



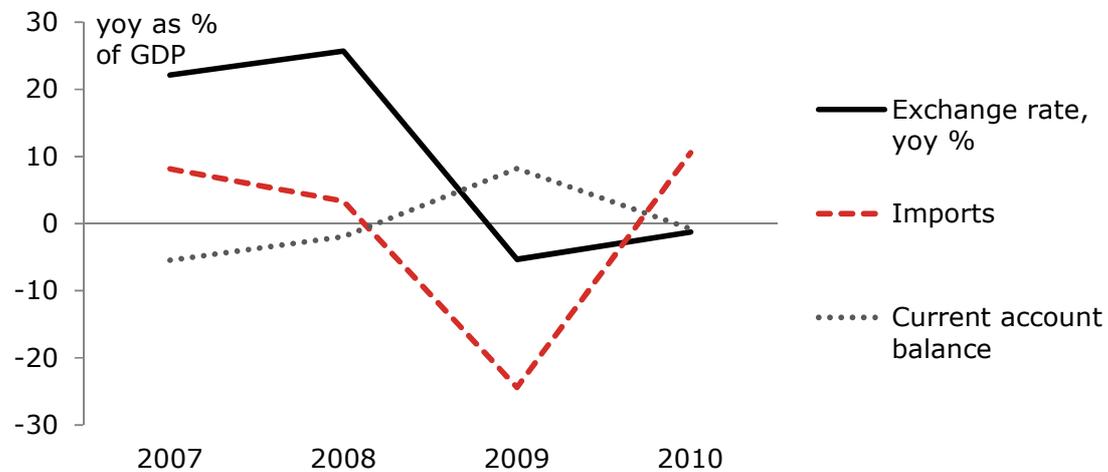
Source: National Bank of Moldova, National Bureau of Statistics

**Figure 4: Effects on domestic macroeconomic variables**



Source: National Bureau of Statistics

**Figure 5: Effects on the external sector of the Moldovan economy**



*Source: National Bureau of Statistics, IMF, own calculations*

In 2009, Moldova experienced a shock amounting to ca. 25% of GDP as remittances, exports and FDI declined at the same time. As around two thirds of this shock were transmitted through exports and FDI, the main channel of domestic adjustment was investment, which sharply dropped in 2009 as should be expected in times of a global economic crisis. A significant contraction of (real) household consumption of 8.7% of GDP also occurred, similar in amount to the 9.6% of GDP reduction in remittances. GDP, however, only declined by 5%.

A striking feature of the crisis' effects is the very sharp reduction in imports of 24% of GDP, caused by the import impact of the combined investment and consumption reduction. This strong crisis absorption through the imports channel largely explains, why the shocks' impact on GDP was so limited. Combined with a sharp reversal of the exchange rate trend from significant appreciations in the past to a real depreciation of 5% versus the USD, the import reduction even caused the current account balance to improve in 2009.

We consider these results as indicating the accuracy of our predictions in section 4. The strong reduction in gross fixed capital formation witnessed in 2009 was probably primarily caused by the shocks in exports and FDI. However, the large reduction in consumption expenditures, the limitation of the GDP effect because of reduced imports and the significant effect on the budget deficit at 20% of the shocks' magnitude are exactly in line with the predictions of our model.

## **5 Policy recommendations**

A large-scale macroeconomic shock, as considered here, necessitates policy action on several different levels. This includes active measures as well as explicit or implicit decisions about monetary or fiscal policy. Although it would be impossible to eliminate the effects of a shock on the Moldovan economy, sound economic policy will help to limit the effects of a shock. In particular, crucial decisions must be taken on

- Macroeconomic policy in the short run
- Substitution strategies to compensate the income loss

### **5.1 Macroeconomic policy in the short run**

In the event of a large remittances shock, there will be strong calls for artificially stabilising the exchange rate of the Moldovan Lei. Despite the legitimacy of concerns for preserving purchasing power of the Lei, we strongly advocate a continuation of the present policy of inflation targeting that implies a flexible exchange rate as long as inflationary pressures are limited as is likely when a negative shock hits the economy.

The quantitative analysis has clearly suggested that in the case of a sudden reduction in remittances of any of the magnitudes considered here, an artificial stabilization of the exchange rate will not be sustainable. Instead, it would lead to a quick depletion of international reserves, a sharp increase in the current account deficit and external debt and, eventually, a loss of access to financing of the current account deficit.

The second key choice in the short run must be on fiscal policy. The shock will lead to a widening of the government deficit particularly because of the loss of revenue from consumption-related taxes and tariffs. It will also create demands for increased government spending both to alleviate the social hardship caused by the shock and for stabilisation of aggregate demand.

As Moldova has prudently improved its government balance over the past years (government deficit of 1.8% of GDP in 2013, public debt stock of 24% of GDP), under consideration of obligations with the IMF and other relevant partners, automatic stabilisers should be allowed to work and fiscal contraction be avoided in order not to aggravate the social effects of a possible remittances shock. Exploration of new sources of income by affected individuals will also contribute to a reduction of the budget deficit over time.

## 5.2 Substitution strategies

Replacing the income loss created by a remittance shock must be a key policy objective after a shock. Strategies aimed at creating new sources of national income should be developed in advance both to ensure quick implementation in the event of a crisis and to reassure markets of Moldova's long-term solvency.

Two broad substitution strategies are available: Creating jobs for returning migrant workers in Moldova and creating new opportunities for them to work in other countries. First preference should be given to creating jobs in Moldova in order to strengthen the Moldovan domestic economy. As this strategy may be subject to quantitative constraints in the short run, policy should also strive to create opportunities for Moldovan labour migrants to get working permits and find work in third countries. The recent agreement over work permits for 1000 additional construction workers in Israel<sup>4</sup> is a positive example of such measures. As the economy in the EU is now slowly recovering, space for initiatives aimed at developing opportunities for Moldovan workers in the EU should also exist.

As a substantial return migration to Moldova would create significant additional capacities on the Moldovan labour market, the Moldovan government should seize the opportunity to strengthen the domestic economy of Moldova in the event of a large shock. At present, the labour market in Moldova, although clearly highly price competitive, is often regarded as lacking spare labour capacities. Substantial return migration of Moldovan citizens after a shock would combine the price competitiveness of Moldova with a sharp increase in labour supply. This should be actively communicated to foreign investors in a bid to attract them into Moldova and be complemented with retraining programmes, preparing return migrants for the jobs likely to be created by additional FDI. In the long run, reducing the dependency of the Moldovan economy on remittances – and consequently reducing the vulnerability to remittance shocks – can only be achieved through developing earnings opportunities domestically.

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<sup>4</sup> <http://www.allmoldova.com/en/moldova-news/1249057490.html>

## **Annex: Measuring Remittances**

The two most important sources of data for assessing the volume of remittances to Moldova are the National Bank of Moldova and the World Bank. Balance of payments data from the National Bank of Moldova is based on actual ITRS data enhanced by an estimation model accounting for unofficial flows as well as refining the country breakdown of data by including data from the Moldovan Labour Force Survey and other sources<sup>5</sup>. World Bank data on remittances suffers from a problematic definition of remittances, particularly due to including the capital account-term “migrant transfers” (see e.g. IMF, 2008). Remittance data is then attributed to sending countries by employing econometric method based on Ratha and Shaw (2007) and using World Bank bilateral migration estimates.

In this paper, we use data from the National Bank of Moldova, calculating remittances as the sum of the balance of payments items “Compensation of Employees” and, in the category “Current Transfers” the items “Personal Transfers” and “Other Transfers”<sup>6</sup>. The breakdown by countries in this data source is mainly driven by the 2013 Labour Force Survey, which corresponds well with other credible sources such as the IASCI-CIVIS Migrant Survey 2013, and should be considered as superior to the World Bank Data that relies on extrapolation from previous values.

In this paper, we work with net remittance data, in which remittances from Moldova to other countries are subtracted and some offsetting expenditures (such as taxes paid to the sending country) are accounted for. Net remittances data should nevertheless still be taken as an upper limit for remittances as some offsetting expenditures and non-remittance payments cannot be deducted.

The term “compensation of employees”, for instance, captures wages, salaries, and other benefits paid by employers to employees when parties belong to different residencies, which includes for instance the salaries of local staff of the Russian Embassy in Moldova. Also, expenditures in Russia by Moldovan guest workers are subsumed under the larger item of “travel” and thus cannot be subtracted from the data. The term “other transfers” also includes payments unrelated to remittances such as charitable contributions and, to our information, some payments distinct from remittances, but similarly affected by shocks, such as payments for services rendered in Moldova for foreign principals (e.g. software programming).

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<sup>5</sup> See National Bank of Moldova, 2013

<sup>6</sup> Note that our calculation method differs from that used internally by the National Bank of Moldova for data availability reasons.

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