

7-9-2009

# Macroeconomic Impact of the Financial Crisis on Armenia

King Banaian

*St. Cloud State University*, [kbanaian@stcloudstate.edu](mailto:kbanaian@stcloudstate.edu)

Follow this and additional works at: [http://repository.stcloudstate.edu/econ\\_wps](http://repository.stcloudstate.edu/econ_wps)



Part of the [International Economics Commons](#)

---

## Recommended Citation

Banaian, King, "Macroeconomic Impact of the Financial Crisis on Armenia" (2009). *Economics Faculty Working Papers*. Paper 1.  
[http://repository.stcloudstate.edu/econ\\_wps/1](http://repository.stcloudstate.edu/econ_wps/1)

This Article is brought to you for free and open access by the Department of Economics at theRepository at St. Cloud State. It has been accepted for inclusion in Economics Faculty Working Papers by an authorized administrator of theRepository at St. Cloud State. For more information, please contact [kewing@stcloudstate.edu](mailto:kewing@stcloudstate.edu).

## Macroeconomic Impact of the Financial Crisis on Armenia

King Banaian, St. Cloud State University\*

**ABSTRACT:** As a small, open economy with a small export sector, Armenia has experienced a large amount of stress from the financial crisis. The government exited a peg-like exchange rate regime after a drain of foreign reserves. The loss of reserves was put to loss of revenues from mining exports, but can also be put to the effects of global financial crisis on remittance inflows. Worldwide, the World Bank expects remittances to fall from US\$305 billion in 2008 to \$290 billion in 2009. In this paper I explore the effect of global crisis on the loss of reserves supporting the monetary system. Bank balance sheets expanded rapidly and, though small relative to GDP, accepted many assets tied to real estate. Banks' asset-liability mismatches have their root cause in changes to the flow of hard currency brought on by the crisis.

---

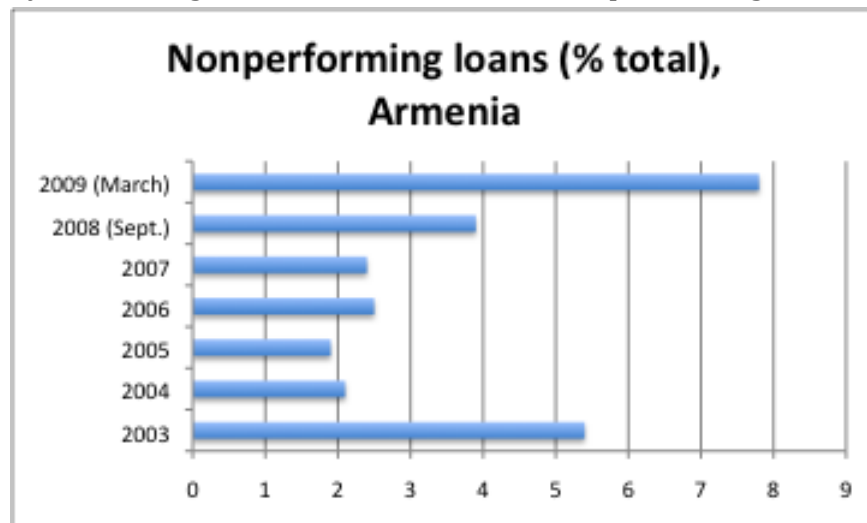
\* Fellow, Armenian International Policy Research Group. Paper to be presented at the workshop "The impact of global crisis on Armenia: empirical evidence", Yerevan, 9 July 2009. I thank Bryan Roberts, Armine Khachatryan, Ashot Mkrtchyan, Arman Gabrielyan, and Aghassi Mkrtchyan for advice and assistance. I am solely responsible for the contents herein.

After six consecutive years of double-digit GDP growth, the Armenian economy was caught in the downdraft of the global recession in 2008. GDP grew at a more moderate 6.8% pace in 2008. A significant contributor to growth had been the export of labor with the return of remittance income to Armenia. Private transfers had grown in 2006 and 2007 but fell late in 2008, and were 32.5% below 2008 levels in January-April 2009. GDP fell 15.7% in the January-May 2009 period from year-earlier levels and the IMF now expects GDP to contract 9.5% in 2009.<sup>1</sup> Around the world, remittances are down \$15 billion, or about 5% from 2008 levels.

In many developing countries the expectation is for growth to continue but at a much slower rate. After growing 6.6% in 2007 and 5.8% in 2008, the IMF expects growth of 2.5% in 2009 and 3.8% in 2010 in the Middle East and central Asia.<sup>2</sup> But in Armenia things have been much worse. On June 22, 2009 the IMF offered additional support to the Armenian economy. Deputy Managing Director Murilo Portugal offered this assessment:

*Since the approval of the stand-by arrangement in March 2009, the external economic outlook has deteriorated significantly for Armenia. Falling private transfers and capital inflows have aggravated external imbalances and affected household incomes and investor confidence. Construction activity, the main driver of growth in previous years, has collapsed, and the economy is experiencing a deep contraction.*

The banking system began to show signs of wear as well. While no bank has failed since the start of the recession and bank capitalization ratios are substantially higher than prudential standards, 7.8% of bank loans were in arrears in the first quarter of 2009, double its level from six months earlier. While the national average is not greatly concerning, some observers believe non-performing loans on some



<sup>1</sup> Nienke Oomes, IMF resident, quoted in Hasmik Mrktchyan, "Armenia GDP to contract 9.5% -- IMF" Reuters, June 24, 2009.

<sup>2</sup> International Monetary Fund, World Economic Outlook, April 2009.

bank portfolios are approaching levels that threaten those banks' capital base. To raise capital, many banks are selling assets.

After the Central Bank of Armenia (hereinafter CBA) used a significant portion of its reserves to maintain the peg of the Armenian dram against the U.S. dollar, the government relented and permitted a devaluation and float of the currency on March 2, 2009. The float was supported with a new program from the International Monetary Fund that included a loan more than four times the size of what had been previously contemplated for Armenia. The Fund's own assessment of the situation had changed dramatically in three months, with estimates of exports, remittances and foreign direct investment slashed for 2009.

There is temptation to place Armenia's issues in the broader context of global financial crisis and refer to its difficulties as an example of contagion. Usually contagion is a problem revolved around financial interconnections. Many observers last year thought that, because the Armenian banking system has little exposure to the international financial markets, it would weather the United States' financial meltdown last September rather well. But Armenia is not isolated in all economic spheres. In particular, its goods market and its labor market are open towards Russia, following historical connections created earlier in the 20<sup>th</sup> Century.

Much of the trouble the Armenian economy, I argue, is an example of economic interdependence with the Russian economy. A recent report from the World Bank finds that Russian GDP is expected to decline 7.9% in 2009 after growing 5.6% in 2008.<sup>3</sup> Unemployment has risen from 6.4% to 9.4% in the first quarter of 2009. The construction sector, which hires many seasonal Armenian workers, fell 21% in the same period. (More than half of Armenian emigrant workers work in Russia.)

I explore in this paper the connection between the loss of income from remittances, particularly from Russia, and the instability of the Armenian financial sector. I will review Armenian banking in the next section. Growth of the sector has been heavily managed by the Central Bank of Armenia, which has protected the sector from excesses but may have restricted the diversification to those areas chosen by CBA. I will then review the international sector, studying the impact of the financial crisis on both the exports of goods and of labor from Armenia. An appraisal of the impact of the loss of remittance income on the economy is estimated in a third section, using both research by Banaian and Roberts [2006, 2007] and by Mkrtchyan, Dabla-Norris and Stepanyan [2009]. In the concluding section I offer a few thoughts on how reforms could help insulate the Armenian economy from swings in remittance income.

---

<sup>3</sup> World Bank, Russian Economic Report 19, June 2009.

## Financial activities in Armenia

Financial intermediation in Armenia has been a persistent source of concern for policymakers since the first banks were established. The presence of a large foreign-based bank in HSBC Armenia has been a common topic for discussion, with foreign capital in the banking system rising above 50% in 2007, while the number of banks in the country consolidated from 74 in 1994 to 22 today. HSBC continues to dominate the deposit business in banking, holding more than 50% of deposits in 2006 and xx% today. Dabla-Norris and Floerkemeier [2007, p. 10] testify to the nature of the market:

*Banks differ greatly in size, outreach effort, and customer base. Around half of all Armenian banks are very small with negligible market shares in deposits and loans, which contributes to the sector's overall low banking productivity. A number of these banks concentrate their activities in trade financing, money transfers, and private banking, rather than in deposit-taking and loan-making. Other banks serve a large number of small-scale depositors and borrowers. While they may have comparatively large shares of the overall deposit and credit markets, the size of financial service per customer can be extremely small, with some banks having average loans and deposits as low as US\$200 per customer.*

This diversity makes it difficult to make sweeping statements about the state of the banking *system* but also exposes the possibility that some banks may be much more greatly harmed by the financial crisis than aggregate data would tell.

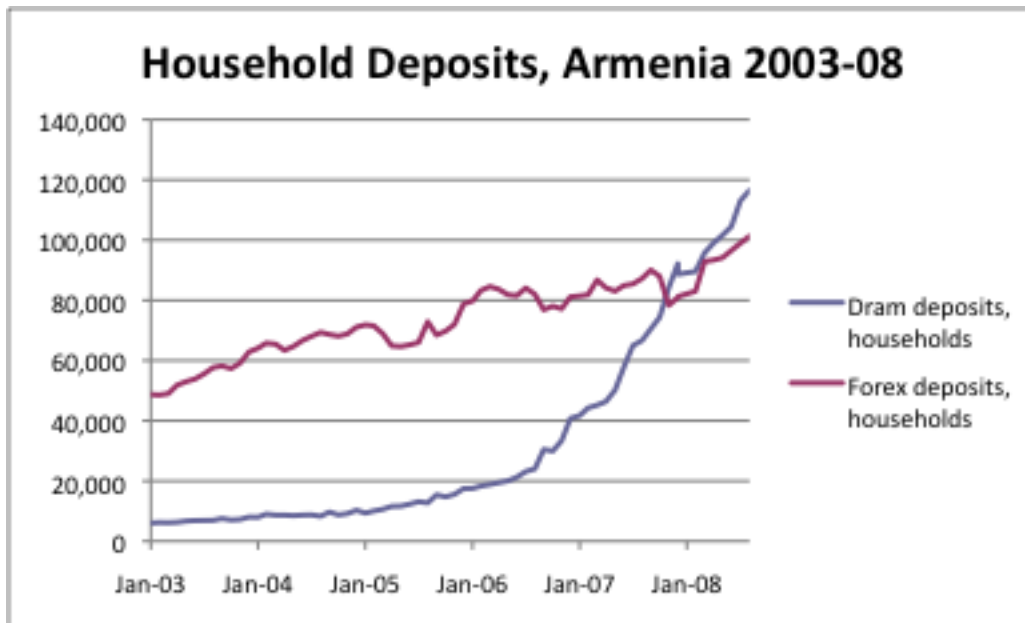
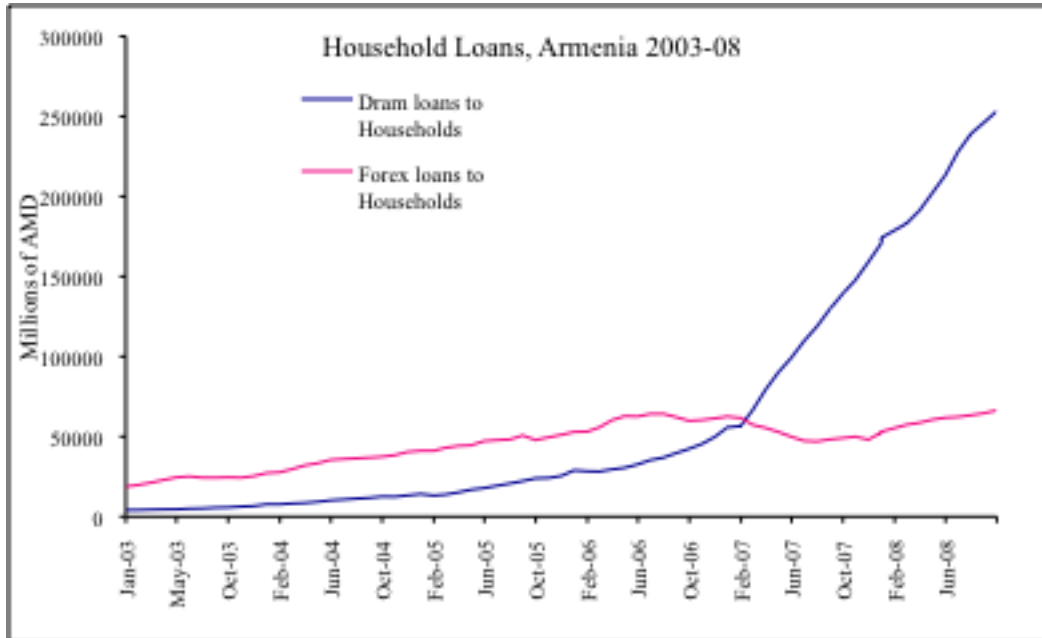
Intermediation has always been low, with a credit to GDP ratio of 6% at the end of 2003. Through concerted bank policy of the government (assisted by western donor organizations), that level had risen to near 12% at the end of 2007. Such rapid expansion of credit (over 30% per year in 2006 and 2007) would give at least some people pause to consider loan quality. Nevertheless, because liquidity and capital levels were so high, concerns over bank lending practices were overshadowed by calls for greater intermediation.

Dollarization has declined dramatically in the last two years, at least in terms of deposits. (I have no information on the level of cash dollarization.) Firms in Armenia have long shown a preference for holding demand deposits in local currency, but both firms and households preferred their time deposits in dollars. But as the Armenian dram appreciated through the middle part of the decade, more and more households were lured into the local currency even for their time deposits. Lending to households accelerated in 2007, and most loans were denominated in dram.<sup>4</sup> Charts 1 and 2 show this below.

---

<sup>4</sup> The movement in firms is similar but less pronounced, omitted here to save space.

**Charts 1 and 2. Household Loans and Deposits, Armenia 2003-08**



Source: Central Bank of Armenia (CBA)

Table 1 shows the effect of the crisis on bank balance sheets. Capital and liquidity were adequate to handle the initial crisis. But demand for foreign currency shot up largely as a flight to safety. Asset and deposit growth stalled in the fourth quarter,

liquidity began to decline and banks started to seek additional support from foreign investors. Demand deposits switched from dram to foreign exchange.

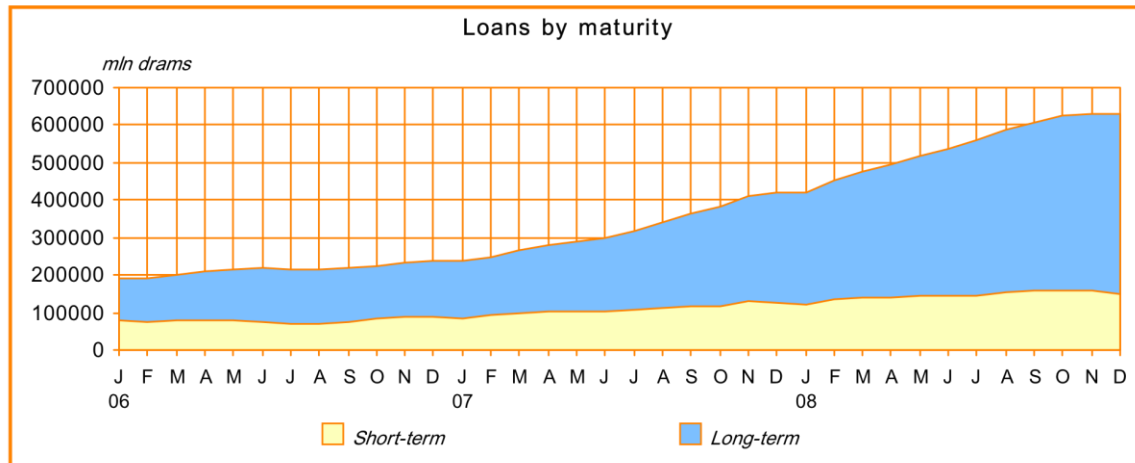
**Table 1. Consolidated Commercial Bank Balance Sheet, 2005-2008**

	2005	2006	2007	2008
Cash	26984964	30570217	39091529	40968000
Reserves	120411078	123608438	138938157	175138200
Securities	65576558	93623489	112190196	74766600
Loans to firms	104216049	114550929	192424384	278734000
Loans to households	73789943	108972461	206255267	332837000
Loan loss reserves	-3413727	-4562064	-7701615	n/a
Other assets	53109280	57754017	83261361	121756200
Total assets	440674145	524517487	764459279	1024200000
Demand deposits				
Households	52577898	58826297	67943187	61503000
Firms	92537273	102147492	141869783	124583000
Time Deposits				
Households	67071720	84719541	130082101	173470000
Firms	49151646	53911522	58618738	89100500
Govt deposits	16275264	18063406	19303041	6308000
Other liabilities	68299588	86677690	175065605	333535500
Capital	94760756	120171539	171576824	235700000
Total Liab/NW	440674145	524517487	764459279	1024200000
capital/assets	21.50%	22.91%	22.44%	23.01%
liquidity indicator	33.45%	29.39%	23.29%	21.10%

\*-2008 data from different source, approximate for Q4.

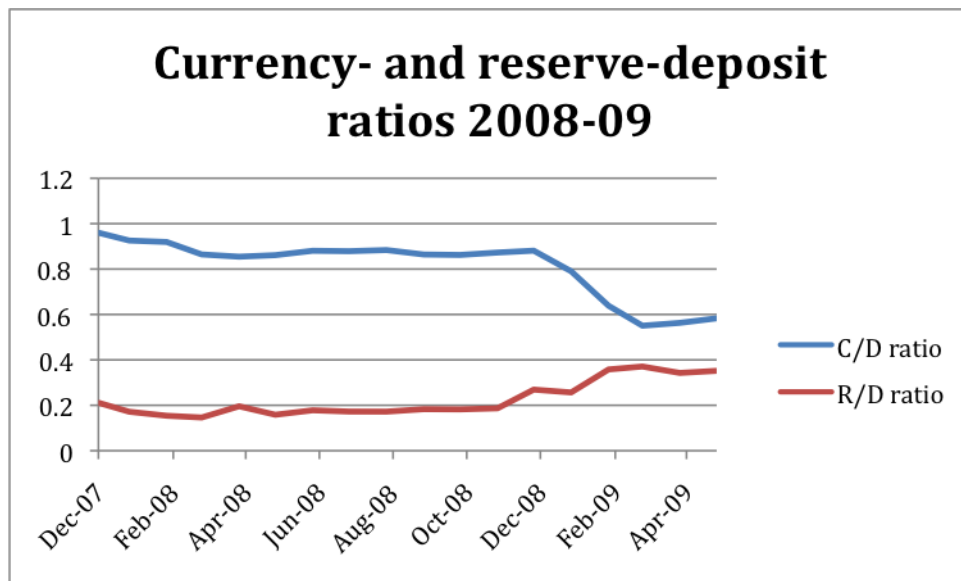
Source: 2005-2007 National Statistics Service, 2008 CBA

Loans increasingly took on longer terms, as most of these household loans went to mortgages or automobiles. Meanwhile deposits were still relatively short term, so that banks began to experience the possibility of intermediation spreads – banks began to borrow short and lend long.



Source: CBA.

Reserves rose during the crisis, jumping in February 2009 to 35.8% of deposits from 18.7% in November 2008. At the same time demand for cash dram fell from 87% of deposits to 64% in the same interval. The changes virtually offset each other in terms of the money multiplier, and CBA held the monetary base close to year-ago levels,



### Remittances as a form of contagion or interdependence?

In an interconnected world recessions in one country can lead to difficulties in its trading partners. Countries trade output goods and services, and inputs like labor and capital. All of those items will be affected by changes in economic activity in one country.



Orosco [2008] using survey data from CBA found that approximately one-third of Armenian households receive remittances from family members abroad. On average this comes to \$1600 per household. 77% of those surveyed reported that the money came from Russia (and another three percent from Ukraine; the largest non-CIS country that was a source of remittances was the United States.) Most funds were used to support current expenditures rather than saved; very little was saved. 70% was applied to current consumption and about ten percent for education.

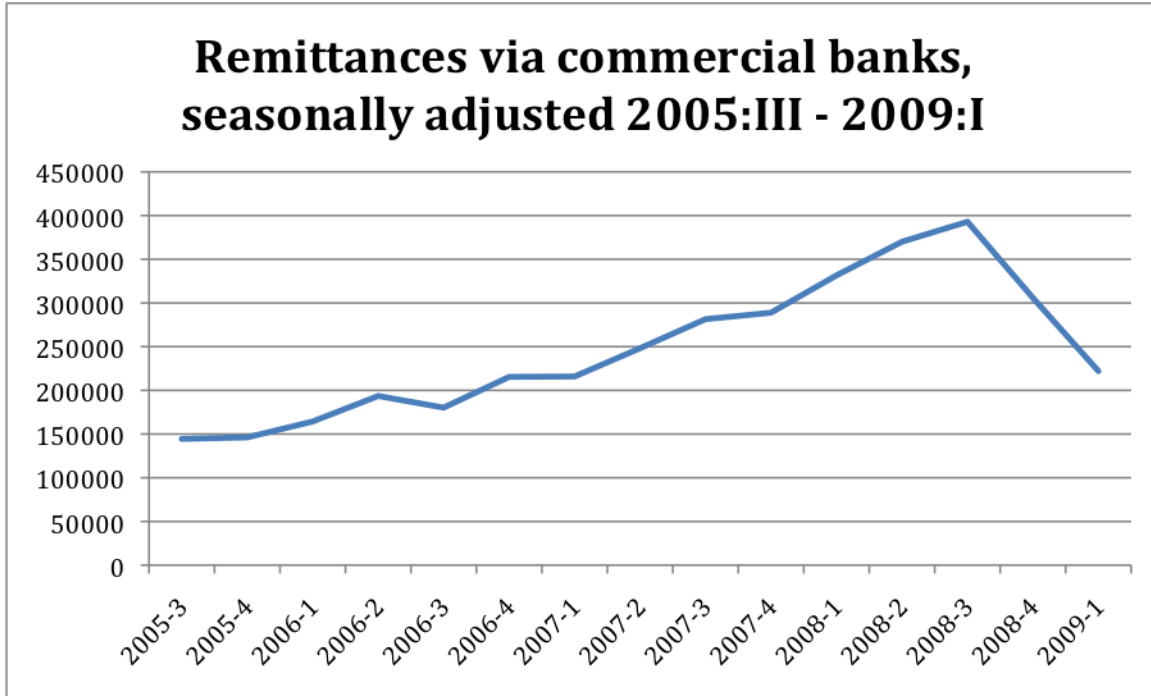
**Table 2. Net Migration, Armenia 2002-07**

Year	To CIS countries	Outside CIS
2002	8039	1173
2003	6315	1306
2004	6445	1268
2005	6196	1612
2006	5266	1452
2007	5013	1436

Source NSS, The Demographics Handbook of Armenia 2008

Orosco estimates that the range of remittance income is between US\$400 million and US\$ 1 billion, or 3.4% to 8.4% of 2008 GDP. Other estimates (Banaian and Roberts [2006, 2007]) put the number at more than double this, and Stratfor [2009] estimates remittances as “one-fifth” of GDP. It is worth noting that some of the difference comes from the latter studies including migrant workers who return within a year; they are not included in the CBA/Orosco survey due to a difference in definitions.

Data on remittances is of course notoriously difficult. Some money comes via wire transfer through banks and money transfer organizations (MTOs) such as Unistream and Anelik. The flow of remittances is quite seasonal, peaking in the third quarter. To ease perception, I have seasonally adjusted the data (using moving averages). The fall in remittances began earlier than the decline in currency ratios or pressure on the dram, in the fourth quarter of 2008. The data only reflects the balances at commercial banks. For MTOs, the transactions tend to be much smaller (average size AMD 281,000, or less than US\$1000, as opposed to AMD 13.8 million remitted via commercial banks) but far more used, and they followed a similar pattern of stalling in the fourth quarter.



As noted above, the Russian economy has slowed dramatically since December 2008, and as a result its demand for labor from other countries has fallen. The Russian government announced early in 2009 that it would reduce the number of work permits given to emigrants from countries of the Commonwealth of Independent States by half, from 4 million to 2 million. Stratfor reported that approximately “250,000 workers are said to have left Russia, including Tajiks and many Georgians ejected after the war with Russia in August.” Worldwide remittances were anticipated by the World Bank to fall 5-8%. They note that the decline was likely to be pronounced since the Russian ruble has declined by 35% since August 2008. Nevertheless, the World Bank expects some resilience in remittance income in part because those workers sent home may take accumulated savings with them.<sup>5</sup>

The decline in exports of both goods and labor can be seen by noting that, between January and April of 2009, exports were 47.8% below their levels in the first four months of 2008 (from US\$338.3 million to \$175.6 million) while remittance net inflows fell from US\$318.1 million to \$207.6 million in the same time periods. Of that, the decline from Russia alone is almost the entire amount, from US\$277.8 million to \$173.6 million. That loss of remittance income represents a substantial decline in the supply of foreign exchange, which may have helped pressure the exchange rate of the AMD. The economic decline in Armenia reduced imports by 25% to US\$893.5 million, however.

<sup>5</sup> Dilip Ratha and Sanket Mohapatra, “Revised Outlook for Remittance Flows 2009-2011: Remittances expected to fall by 5 to 8 percent in 2009.” World Bank, *Migration and Development Brief* 9, March 23, 2009.

These losses represent a fundamental contagion that is the by-product of the linkages of a more globalized economy. Liang, Willett and Zhang [2009, pp. 3-4] explain:

*There is no one generally accepted definition of contagion. All concepts have in common, however, the general idea of developments in one market or country affecting those in another. While contagion often carries the connotation of the irrational transmission of shocks from one country to another, a broader definition that is also frequently used applies to any transmission effect including those through trade flows where a recession in one country is transmitted to others through the real sector. Often labeled economic interdependence, such fundamentals based contagion is perfectly consistent with fully efficient financial markets and may be considered the polar opposite of irrational contagion transmitted through market hysteria or other types of market inefficiency.*

*Between these extremes are a host of possible types of at least partially rational transmission mechanisms operating through financial sectors. ... This financial interdependence operates similarly to trade interdependence and gives rise to the prospect of countries being “innocent victims” of adversity in other countries. Generally, however, these forms of contagion are relatively mild unless a major trading partner or financial centers are involved. Thus, for example, while the Argentine crisis of 2001-2002 had detectable influences in markets in Asia, its major effects were on immediate neighbors. Russia’s crisis had much broader effects because these came largely through its effects on the major financial centers like New York...*

With a relatively small financial market, the Armenian economy was not prone to the financial contagion of the type that markets experienced in the Russian crisis. Much of the decline in capital inflows expected in Armenia (the IMF [2009] expects now for more than a billion U.S. dollars less capital flowing into the country due to FDI and other private capital flows) is a consequence of the trade decline rather than the result of financial contagion. The IMF discusses whether local banks “could be vulnerable to liquidity problems, reflecting the fragile confidence of the public in the banking system due to previous episodes of devaluations and bank runs in Armenia.” (p.6) But the source of the bank disturbance comes from the decline in dram lending, as noted above. By allowing depreciation, CBA gives the banks some breathing room to take declining remittances and convert them to dram.

### **The Economic Effects of Remittance Drops**

The negative effect of the Russian economic decline on Armenia can be predicted in a number of ways. Banaian and Roberts [2007] identify four macroeconomic effects of a decline in remittances:

1. A direct effect from lost income to households (*income effect*), which may have Keynesian multiplier effects through consumption and investment;
2. An indirect effect from decreasing imports of goods as a result of their status as luxury goods (*import substitution effect*);
3. An indirect effect that decreases imports due to depreciation of the exchange rate as remittances are converted to drams (*exchange rate effect*); and
4. An indirect effect in the long run from an increase in the effective labor supply because fewer workers depart to foreign labor markets (*labor supply effect*). For the purposes of looking at the effect of a temporary shock like the Russian recession, I ignore this effect below.

Using a model developed by USAID for the Armenian Ministry of Finance it was estimated that the direct income effect on output of an AMD 100,000 decrease in remittances was to decrease investment and consumption each by AMD 35,000 in the short run. The long-run effect on consumption through the multiplier was expected to be a decrease of AMD 72,000.

A decrease in imports on the other hand would lessen the impact of a decline in remittances on Armenian production. If households facing lower income due to fewer remittances responded by substituting lower-costing domestic goods for imports, output would not be as adversely affected. Banaian and Roberts identify that decrease in imports from an AMD 100,000 decline in remittances as equaling 69,000. The exchange rate effect is much smaller in that model, perhaps no more than AMD 18,000 in their model. All together, the impact of an AMD 100,000 decline in remittances was found to decrease GDP by AMD 20,000 in the long run.

Since it appears that remittances decreased by about US\$39 million in the first four months of 2009 versus 2008, that makes for a \$7.8 million or about 3.5% decline in GDP due to remittances. I would argue that, since that number uses only remittances through the commercial banking system, this estimate is low but not by too much. Though more remittances come through MTOs, their volume is likely to be much lower. Compared to official GDP decrease of 9.7% for January-April, remittances would explain not more than half of the decline.

For the remainder, we can turn to evidence of declining capital flows for foreign direct investment and other private capital flows. The IMF [2009] estimates that, besides remittances and exports, another US\$589 million decline in FDI and private capital flows over the full year, or about 4.9% of 2008 GDP. This will certainly account for some of the additional decline. Most of this is attributable as well to the Russian output shock, since much of FDI and private capital flows are from Russian sources. If the drop in trade were to add 1% more to the decline in GDP (which is perhaps a conservative estimate), it would be reasonable to assert that the Russian shock causes most of the observed decline in output, rather than some financial contagion.

Mkrtchyan, Dabla-Norris and Stepanyan [2009] provide a more complete model for analysis of this issue. Using a small open economy model intended to illustrate the impact of various monetary policy rules (in the context of CBA's commitment to inflation targeting), they argue regarding a remittance shock and to a shock to foreign output. The distinction they draw between these two impacts is important. Consumption spending should fall due to a fall in remittances if that fall is exogenous, but it would be offset by an appreciation in the exchange rate. Overall, the impact on consumption would be mixed. In the case of a negative foreign output shock, however, the impact on consumption is unambiguously negative. A foreign output shock hits domestic output and consumption faster both through lower exports and because the home family of an emigrant sending remittances shares in the loss of the income in the host country. The shock is more temporary if it comes from foreign output. The implication for the Armenian economy would be a sharp but relatively short recession, self-reversing when Russian output recovers.

Mkrtchyan, et al., note that the period of dedollarization between the middle of 2006 and end of 2007 was a period where expectations of the exchange rate moved contrary to their model predictions:

*"The sustained appreciation created expectations of a continuing currency appreciation, and a resulting decline in the risk premium. This is also confirmed by actual data which show a rapid growth in demand for the domestic currency at the expense of the foreign currency." (p. 30)*

If there was a moment of irrationality in the Armenian economy it was presented in this belief that appreciation would continue. There is little doubt that such overconfidence played some role in the redollarization of late-2008, and that this is contributing to the tightening of credit for dram-denominated loans.

### Concluding thoughts

There is a danger in using a general story of contagion, broadly used to describe the experience of the western economies in the last two years, to describe what is happening in Armenia. Liang and Willett [2008, pp. 218-19] identify a difference between contagion and interdependence as applied to global crisis. Contagion is more common during crisis but for the most part is limited to a "few days or weeks."

*Medium-term responses from the currency and financial markets tend to be much more differentiated, although the determinants of these more focused medium-term responses can be quite complex, including both trade and financial linkages and a broad range of fundamentals including financial and political as well as economic considerations. Since information is often quite imperfect, perception of the fundamentals can shift without any change in the actual fundamentals themselves. Thus a crisis in one country can act as a wake-up call that generates re-evaluations of conditions in other countries.*

The difference between contagion and interdependence is important for policy-makers. Contagion is a problem for which there are some solutions (though these are limited, as recent events have shown), but interdependence begets its own solution: market interdependence is wealth-creating, encouraging division of labor and specialization.

Nonetheless, some policy implications of the current crisis can be drawn:

- I feel that *banking policy* has been by and large sound, with some reservations on mortgage lending marked below. Because of low leverage ratios in the Armenian banking system, the amount of credit destruction that has to occur as capital is destroyed by loan losses will be less than in the West. (A bank with 10% capitalization rate has to reduce credit by \$10 for each dollar of bank capital destroyed; for a bank with 25% capitalization, only \$4 of credit is lost.) There is a good deal of variety in banks, however, that is masked by using system amounts. Smaller banks tend to be less profitable, and mergers may be prudent at this time.
- The *mortgage market* has been the subject of much work by the CBA, the government, and donor organizations. Projects have tried to develop a secondary mortgage market, and some have proposed mortgage-backed securities. It has been quite a successful project thus far, with mortgages the fastest growing asset on bank balance sheets. But this growth put more dram-denominated assets onto banks, without any necessary increase in the amount of dram deposits. If banks borrow in foreign currency and lend in dram, they face substantial exchange rate risk. These considerations may have put some additional strain on banks in the current recession. Policymakers may wish to reconsider whether putting this additional exchange rate risk onto the banks can and should be mitigated.
- *Exchange rate policy* changed this past March, with CBA choosing to return to a flexible exchange rate regime. While this may make much sense in terms of inflation control, it may increase the amount of exchange rate risk faced by banks that borrow in dollars and lend in drams (whether encouraged by banking policy or not.) Good control of inflation will be the best policy for banks but, as we have seen in the last year, not all bank troubles begin with inflation.
- *Remittances*, as we have seen, are a part of Armenia's globalization policy. The preponderance of emigration of labor to Russia and other CIS destinations implies that Armenia's exposure to Russian shocks will continue to be the predominant source of external economic instability. But they should not be seen as contributing to contagion and regulation of remittance flows should continue to be light. Encouraging diversification of neighbors to whom Armenian labor might emigrate would be somewhat helpful, but the size and historical significance of the Russian economy is likely to favor it as the Armenian destination for years to come. One could also consider how Armenia manages its emigrant workers. Some countries have a more active program for placement, for providing information to potential émigrés, and

for managing the return flow of workers and their remittances. The Philippines provides but one example.

- *Trade*, which all at this conference have said should stay open, should be seen as trade both in outputs – goods and services – and in inputs – labor and capital. As noted above, Russia’s decision to reverse the flow of work permits to CIS migrant workers serves as protectionism of a different sort. Beyond that, it is worth noting that Armenia’s trade patterns are still the product not only of history but current impediments. The border to Turkey remains closed; trade with Iran creates issues with western allies; Georgia’s political uncertainties create problems as well. It would be worthwhile for policymakers to think more about whether putting so many eggs in the Russian basket is wise, and if not, what could be done to diversify trading partners.

## Bibliography

Banaian, King and Bryan W. Roberts. 2005. "Remittances in Armenia I: How Big Are Remittance Flows to Armenia, and How Much Does It Cost to Send Them?" *Armenian Journal of Public Policy* 2(1): September.

Banaian, King and Bryan W. Roberts. 2007. "Remittances in Armenia II: The Impacts of Remittances on the Economy and Measures to Enhance Their Contribution to Development." *Armenian Journal of Public Policy* 2(2): January.

Dabla-Norris, Era and Holger Floerkemeier. 2007. Bank Efficiency and Market Structure: What Determines Banking Spreads in Armenia? International Monetary Fund working paper WP/07/134, June.

International Monetary Fund, 2009. "Republic of Armenia: Request for Stand-By Arrangement", Washington DC: Country Report 09/140, May.

Liang, Priscilla and Thomas D. Willett. 2008. "Contagion." In Reinert, Kenneth, Ramkishen S. Rajan, Amy Joycelyn Glass and Lewis S. Davis, eds., The Princeton Encyclopedia of the World Economy. Princeton, New Jersey: Princeton University Press.

Liang, Priscilla, Thomas D. Willett and Nan Zhang. 2009. "Contagion and Global Financial Crisis." Claremont, CA: Claremont Institute for Economic Policy Studies. Paper presented to Western Economic Association International annual conference, Vancouver BC Canada, 29 June 2009.

Mkrtchyan, Ashot, Era Dabla-Norris and Ara Stepanyan, 2009. "A New Keynesian Model of the Armenian Economy." International Monetary Fund working paper WP/09/66, March.

Orosco, Manuel [2008]. "Remittance Transfers to Armenia: Preliminary Survey Data Analysis." United States Agency for International Development microREPORT#117, September.

Stratfor [2009]. "Shrinking Remittances and the Developing World." February 3, 2009.  
[http://www.stratfor.com/analysis/20090203\\_shrinking\\_remittances\\_and\\_developing\\_world](http://www.stratfor.com/analysis/20090203_shrinking_remittances_and_developing_world) last accessed 19 June 2009.