The “Impossible Trinity” in Monetary Policy of Armenia

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Abstract This article reviews some of the key aspects of exchange rate and monetary policy choices with reference to developing countries. It analyses also the “the impossible trinity” in theory and practice of emerging markets, its specificity in the monetary policy of Armenia. The study finds that the floating exchange rate is optimal when combined with an active monetary policy in the case of emerging economies. Also the results suggest the necessity of a changing of orientation of the monetary policy of Armenia: it must contribute to economic growth rather than to be the means of a fight against inflation. The policy of maintaining a low level of inflation, aimed at squeezing the money supply and credit, impedes economic growth, export expansion and makes the system less resistant to external shocks. Then what monetary and exchange rate policy should follow Armenia in today’s realities, taking into account the integration processes within the framework of EAEC? Just to these problems this article is devoted.

Keywords Exchange rate - Monetary policy - “Impossible Trinity”/ “The Mundell-Fleming Trilemma” - Economic growth - Emerging economies - Inflation targeting

JEL classification E31 - E52 - E58 - F31 - G28

Introduction

The range of local currency crises as well as global financial-economic crisis emphasizes the necessity of reviewing the approaches of monetary and exchange rate policy as well. The choice of a monetary and exchange rate policy framework is one of the most crucial decisions that economic policymakers (and ultimately politicians in many cases) are called upon to make. The choice is far-reaching, for several reasons. First, the policy framework has widespread implications for all economic agents and, second, it affects key macroeconomic outcomes (inflation, competitiveness, responsiveness to economic shocks). That’s why the questions of exchange rate and monetary policy choices are paramount and always in the sphere of scientific interests of many researchers.

Below we attempt to summarize the results of recent scientific findings what monetary and exchange rate policy emerging markets in contemporary states should adopt, to analyze the
problems of current monetary and exchange rate policy in Armenia from viewpoint of creating compatibility advantages for economic growth and economic integration within EAEC as well, and finally, to introduce new approach of currency regulation to solve the disparity problem on the money market.

The theories of exchange rate and monetary policy choices in emerging markets

According to Larrain (2001) the only realistic option for many emerging economies is exchange rate flexibility. A workable model involves the adoption of inflation targets as the main anchor for monetary policy, coupled with a monetary policy reaction function that, in addition to reacting to the output gap and other determinants of inflation rate, also reacts partly to movement in the nominal exchange rate. Moreover, as concludes the author, there are no clean floats in the real world. Large industrial countries such as Canada and the United Kingdom, smaller OECD countries, such as Australia and New Zealand, and middle-income countries, such as Mexico and Peru, all practice floating with varying degrees of market intervention (so-called “dirt floating”). Even the United States, usually regarded as the cleanest of the floaters, intervenes occasionally in the foreign-exchange market. The main reason for intervention is clear. Clean floating means high volatility of nominal exchange rates that in its turn almost always means greater volatility of the real exchange rate, because prices move sluggishly. This volatility causes volatility in output and distorts financial system, thus the policymakers want to mitigate it.

As noted by Svensson (2000), there are additional reasons for managing the exchange rate under inflation targeting. The exchange rate affects inflation through two channels. Through direct exchange-rate channel for the transmission of monetary policy to inflation, the exchange rate affects domestic currency prices of imported final goods, which enter the consumer price index (CPI) and hence CPI inflation. Any scheme to control the rate of inflation at a short horizon must thus control, to some extent, the behavior of the nominal exchange rate. This fact helps to explain the prevalence of managed or “dirty”, floats in the real world.

Calvo and Reinhart (2001), analyze the behavior of exchange rates, reserves, monetary aggregates, interest rates, and commodity prices across 155 exchange-rate arrangements and find that nominal-exchange-rate volatility is lower in countries that have floating regimes. Broda (2001) confirms that flexible-exchange-rate regimes are better able than fixed regimes to buffer the real shocks. Chang and Velasco (2000c) model showed that currency-board makes balance-of-payments crises less likely only at the price of making bank crises more likely. The price of low inflation may be endemic financial instability. Flexible rates, by contrast, may help restore financial stability. Moreover, flexible exchange rates play an insulating role in the presence of real external shocks and, for some parameter values, fluctuations in home output and investment are larger and more persistent under fixed than under flexible exchange rates. The results of some investigations found also strong relation between the choices of monetary and exchange rate

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policy and the level of financial development (M2/GDP). Thus, countries with less developed financial markets (M2/GDP average 0.3) tend to use monetary aggregate anchors; countries with more developed financial markets (M2/GDP average 0.6) tend to target inflation; economies with high levels of credibility such as the EU, USA and Japan use more other types of targets including output.

To understand what monetary and exchange rate policy is optimal for the country it is necessary to present the Mundell-Fleming “Trilemma”. Countries have some choice over the combination of policies – monetary independence, exchange rate stability and financial integration – that they adopt but cannot have all three at once. The Mundell-Fleming “Trilemma” in Figure 1 below illustrates the impossibility to have all three options simultaneously: a country must choose two out of three.

Figure 1 The Mundell-Fleming Trilemma


Option (a) - country can fix its exchange rate and conduct independent monetary policy, but only by maintaining controls on capital flows (like China);
Option (b) - it can leave capital movement free and retain monetary autonomy, but only by letting the exchange rate fluctuate (like Britain or Canada);
Option (c) - it can maintain free capital movement and stabilize the currency, but have no independent monetary policy, i.e. no ability to adjust interest rates to fight inflation or recession (like Argentina or most of Europe).


To understand the nature of the impossible trinity consider what happens to a country trying to combine tight monetary policy with an exchange rate target in the context of open financial markets. Tight monetary policy leads to high risk adjusted interest rates, this attracts capital inflows and put upwards pressure on the exchange rate. Stabilizing the exchange rate requires absorbing foreign exchange and accumulating reserves. This creates domestic liquidity which in turn lowers the interest rate and offsets the original purpose of monetary tightening. The excess

liquidity needs to be re-absorbed by the central bank at high cost through sterilization operations. The policy combination is unstable. The monetary policy either becomes ineffective, or leaves high and eventually unsustainable costs for the central bank. Effects of the “impossible trinity” are obviously considered at the example of Armenia presented below.

Aizenman, Hutchison & Noy (2011) estimates the monetary policy reaction function of the central banks of 16 inflation-targeting emerging economies and finds that unlike central banks of inflation-targeting industrialized economies, central banks of inflation-targeting emerging economies do not follow a “pure” inflation targeting strategy, but respond systematically to the real exchange rate shocks. The finding is even stronger for countries with high degree of dependence on commodity exports\textsuperscript{10}.

As noted by Ostry, Ghosh & Chamon (2012), inflation targeting central banks in emerging markets do in practice target exchange rate stability in addition to using interest rate policy in accordance with the Taylor rule. The study concludes that foreign exchange market intervention under inflation-targeting monetary policy regimes can be effective in terms of increasing the credibility of the central banks and inhibiting speculative inflows\textsuperscript{11}.

There is no “best” policy framework, which is suitable for every situation and can work in different circumstances. However, as experience suggests emerging markets should combine active monetary policy (monetary or inflation targeting) with flexibility in the exchange rate. This does not exclude the possibility of foreign exchange market interventions for stabilizing market shocks called by unpredictable fluctuations of exchange rates.

**Review of exchange rate and monetary policy in Armenia in context of integration within EAEC**

It is obvious that small open economies such as Armenia in case of high exchange rate volatility of foreign currencies faced special difficulties in choosing the mechanisms and regimes of exchange rate regulation. In case of high exogenous dependence of money market of Armenia from Russian economy through export, foreign direct investments and private transfers, the central bank of Armenia faces a problem in maintaining the officially adopted floating exchange rate regime. Instead of following “inflation targeting”, CBA actually conducts “exchange rate targeting” aimed to hold back the devaluation of the national currency. This policy has its description. Free floating leads to devaluation of national currency and thus to inflation, that in case of high rates of poverty means an increase of social expenditures. On the other hand, the pegged exchange rate regime that is actually conducted by the CBA through the policy of obligatory reserves of the bank liabilities nominated in foreign currencies, leads to a decrease in export and profitability of the banking sector as well. Thus the monetary and exchange rate policies are used to solve first of all the problem of insuring macroeconomic stability. Moreover due to unavailability of an appropriate forecasting model, uncertainty of macroeconomic factors as well as high monopolization of economy, it is almost impossible for monetary authorities to implement really inflation targeting. Instead of this CBA intervenes and regulates exchange rate.

It is worth to mention that the exchange rate policy is essential from the viewpoint of integration processes within the Eurasian Economic Community (EAEC). This creates for


Armenia new opportunities to increase the export potential. But the actually conducted exchange rate policy of Armenia restrains the integration opportunities and, in contrast, slowed the economic development dynamic. Deepening of integration within EAEC means the creation of common markets and, particularly, a common financial market, that is essential for the enlargement of economic connections and trade between countries and the increase for mutual investments as well. At the same time the deepening of financial markets’ integration implies the creation of institutional basics of monetary coordination through the development of common aims and approaches for conducting of monetary policy. In its turn successfully monetary coordination implies the necessity of integration and convergence of the economic structures and business-cycles of all the member countries. The very important challenge for synchronized macroeconomic policy and particularly monetary policy is the rate and the volatility of inflation and exchange rate. Special attention must be paid for such problems as dedollarization of economies, decrease of inflation rates, increase the efficiency of transmission channels of monetary poly and so on.

Some authors analyze the problems of monetary and exchange rate policy integration within EAEC. Thus, Dabrowski (2016) analyzes the detailed history of arising and solving of currency crises in post-soviet countries and emphasizes the importance of implementing “inflation targeting” and conducting structural and institutional reforms. At the same time he concludes that for small economies in the post-soviet area the pegged exchange rate regime should be more profitable because of low levels of trust of economic agents towards monetary authorities. Knobel and Mironov (2015) analyze the actual readiness of CIS countries for creating a currency union on the base of criteria of optimal currency zones as well as pros and cons of such idea. The results of comparative analysis clearly showed the countries that will experience economic advantages from currency integration with Russia. The list of countries that meet at least half of the criteria (7 из 13) involves Moldova, Ukraine, Tajikistan, Belarus and Kazakhstan. Authors conclude that in case of more synchronized business-cycles in the above mentioned countries it is really possible to decrease the potential losses and increase the advantages of currency integration with Russia as well as to gain sustainable development of currency union in the future. Unfortunately, the results of some researches evidence, financial integration within EAEC and the creation of currency union bring not so much advantages for Armenia. The main cause is insufficient development of mechanisms of monetary and exchange rate policies, lack of tight economic and trade relations with other union members except Russia and so on.

Monetary policy in Armenia is actually used as a mechanism for smoothing out the influence of exogenous and endogenous factors as well as for the provision of short-term macroeconomic and financial stability. Unfortunately, till now the monetary authorities of Armenia fail in implementing true inflation targeting because of institutional failures of the economy, especially the low level of financial sector development (extremely low level of market capitalization a little more than 1% of GDP, absence of long-term financial instruments and so on). In this case the instruments of monetary policy don’t work efficiently for smoothing out of exogenous shocks. Thus, instead of “inflation targeting” CBA de facto implements traditional instruments of exchange rate targeting as currency interventions and since December 2014 also a new instrument for the provision of exchange rate stability -

extremely high rate of banks’ reserves against liabilities denominated in foreign currencies. This creates so-called “stagnation trap” and prevents high rates of economic growth. The investigation of the reasons of inflation present that the main factors affect the level of inflation in Armenia are high non-competitive prices because of high monopolization of commodity markets. On the contrary, the influence of monetary factors like money supply is insignificant\textsuperscript{14}. In conditions of high monopolization and dollarization of the economy as well as insufficient development of financial intermediation CBA during last decades conducts inefficient exchange rate policy, first (2003-2007) allowing considerable evaluation of national currency then (2008-2017) providing stability of exchange rate (see Figure 2), thus creating macroeconomic distortions and reducing potential of economic growth.

**Figure 2 Private transfers’ inflow in RA (mln. USD) and dynamic of exchange rate (2006-2017)**

![Graph showing private transfers' inflow and exchange rate dynamics](image)

Source: Data of CBA – www.cba.am

Since the beginning of adopting the inflation targeting regime CBA has faced problems with regulation of inflationary pressure because of the absence of open market operation instruments and high uncertainty of macroeconomic factors. In such cases it is almost impossible to implement efficient forecasting models. That’s why during the last decade CBA failed quarterly to reach the target\textsuperscript{15}. According to the official policy of CBA the main instrument of monetary regulation is the refinancing rate. However the experience of the last five and more years evidences that the policy of high interest rates has no positive effect in terms of reducing inflationary pressure. On the contrary, the strengthening of the interest rate policy leads to enhancing the inflationary pressure (see Figure 3). Due to the current exchange rate policy CBA succeeded in maintaining the stability of the exchange rate and avoiding inflationary pressure. But as the other post-soviet countries and the main trade partner of Armenia RF follow free floating policy, the Armenian economy faces the problem of export reduction in these countries as the result of the loss of compatibility of Armenian goods.


In December 2014 the devaluation of the Russian ruble as a result of west sanctions and falling oil prices reflected enormously the Armenian economy through the reduction of foreign currency inflow as a result of decreased volumes of FDI, private transfers and export of Armenian goods and services. Since October 2014 the private transfers have significantly reduced. (see Figure 2) Thus, in 2015 in comparison with 2014 they reduced at 30.2%, with 2013 – at 41%. Such tendencies continued in 2016 and led to a 40% decline of private transfers in comparison with the previous year. Over this period the private transfers from Russia has cut down on more than 91%. Over the last years FDI has also significantly reduced at 55% in 2015 comparing with 2014, and on 82% - comparing with 2008 (see Figure 4), which mainly depends on the financial welfare of Armenian diaspora in Russia, institutional restrictions such as monopolization of economy, insufficient business climate and so on.

**Figure 3 Consumer Price Index (CPI), 1996-2017**

![Graph showing the Consumer Price Index (CPI), 1996-2017](graph)

*Source: Data of CBA – www.cba.am*

**Figure 4 FDI inflow and outflow from Armenia, mln. USD (2000-2016)**

![Graph showing FDI inflow and outflow from Armenia, 2000-2016](graph)

*Source: UNCTAD, World Investment Report 2016*
In such a situation CBA implemented the policy of exchange rate stability, which in its turn in parallel with the reduction of export leads to an increase in public debt and loss of profitability of the banking sector as a result of high rates of compulsory reserves against banks liabilities denominated in foreign currencies. Thus, the aggregate national debt of Armenia increased from 32% of the GDP in 2008 to 87% in 2016, and the public debt respectively from 16,3% to 54,5% (see Figure 5). The level of public debt in case of low tax collecting because of the continuing economic stagnation during the last 8 years (GDP in USD during the last 8 years concede the level reached in 2008), creates significant risks for a sustainable social and economic development as well.

Figure 5 Public debt, % of GDP (1999-2016)

Source: Ministry of Finance of RA/ Public debt report - www.minfin.am

Devaluation processes in November 2014 encouraged CBA to make currency interventions amounted 93,84 mln. USD, which consisted approximately 98,3% of all market operations. At the end of November 2014 CBA also increased the price of short-term dram liquidity gradually increasing the rate of Lombard repo from 8,25% to 10,25% and to 21% in December continuing the intervention on the exchange market. Since 8th December the same year a new mechanism of sailing foreign currency via daily organized auctions in advance declared amounts was introduced. Thus, CBA insures the decrease in daily trades from 6 mln. USD to 2 mln. USD. For mitigating future inflationary pressures and insuring inflation target CB increased the prime rate up to 8,5% and in January 2015 – up to 9,5%. In parallel CBA introduced a new mechanism for insuring exchange rate stability – high rates of reserves. Thus, on December 17th 2014 CBA increased the rate of reserves covers banks’ liabilities denominated in foreign currencies from 12% to 24% with the condition of accommodation reserves in the central bank only in national currency – the Armenian dram, which had simultaneous effect and led to a sharp evaluation of AMD next day. Formerly CBA claimed to put 6% of reserves in AMD, the last 6% - in currency of the deposit. The result of such a decision was a sharp decline on December 18th of USD exchange rate at 30,2 percentage points and fixed at the level 497 AMD for 1 USD. For deposits in AMD the rate of reserves remained at the level of 2%. Later on December 23, 2014 CBA revised newly the rate of reserves and decreased the rate from 24% to 20% that functioned till October 2016, when the rate was secondly declined to 18%, which acts till nowadays. So, the banking system of Armenia
has to additionally reserve approximately 170 bln. AMD, the overall level of reserves as of September 2016 amounted 532 mln. USD, which consists 5% GDP. It is worth to mention that in case of increased reserves’ rates, Armenian banks refused to sale foreign currencies and attracted expensive liquidity in drams at a 18% annually rate. This led to a significant increase of REPO agreements and REPO interest rates up to 20% in December 2014. Abovementioned situation led to additional demand for national currency and created following problems: significant reduction of issued credits, negative currency expectations, artificial increase of interest rates, worsening of the quality of banks assets, currency risk growth of banking sector and so on.

Such a policy of CBA, actually “exchange rate targeting” is considerably described with the necessity of serving enormous public debt, that in 2017 will reach the level of 60% of GDP, high level of depends of consumer market from import and so on. Thus, the maintenance of the macroeconomic stability in terms of low inflation as well as decision of budget problems, especially covering the payments for public debt, seems to be more crucial and is solved at the price of impeding the export. Considering the dynamic of export from Armenia in some CIS countries, including Russia – the main trade partner of Armenia, one can consider significant growth at 60% in 2016 (see Figure 6).

Figure 6 Indicators of foreign trade and exchange rate, (2000-2016)

Armenian goods replaced foreign goods because of west sanctions and embargo. However, such a growth is considered on the basis of a significant reduction of exports from Armenia to the RF in 2014-2015 (the highest level was reached in 2013). According to NSS RA in 2015 comparing with the previous year’s exports from Armenia to Russia has reduced at 26,5%, comparing with 2013 – at 36,4%. Despite of integration as well as trade advantages within EAEC, the exchange rate policy conducted by CBA impedes the opportunities for enlargement of the export of Armenian goods on the Russian market. On the contrary the pegged exchange rate policy during the last 8-9 years has led to a significant loss of compatibility of Armenian goods also on west markets and strengthened the positions of importers. Continuing chronical deficit of trade balance sheet creates disadvantages for Armenian producers both on local and foreign markets as well. At the same time because of in practice conducted “exchange rate targeting” monetary authorities of Armenia couldn’t reached their main aim – a low level of
inflation. Uncertainty on the money market discouraged the economic agents and led to a loss of trust towards the actions of monetary authorities, thus enhancing inflationary expectations and inflation rates primarily in consumer sector.

The devaluation of USD led to a decline in real incomes of the population through the private transfers. The volume of transfers depends on the state of the Russian economy as well as on the exchange rate policy in Armenia. As they inflow mostly in USD, the policy of exchange rate stability aimed to strengthening Armenian dram, led to reduction of dram equivalent of transfers thus negatively influencing the level of national welfare.

Conclusion

Resuming, the policy of maintaining the exchange rate stability creates very difficult problems for the economy. The Mundell-Fleming “Trilemma”, i.e. the impossibility to combine simultaneously the three policies - exchange rate stability, free capital flow and independent monetary policy – that obviously take place in monetary policy of Armenia, causes financial crisis as it was explained above. In other words, the monetary authorities of Armenia try to change the “impossible trinity” in a “possible” one. But as the experience evidences, countries, that follow such a policy, come anyway to financial collapse. Classically “The Mundell-Fleming Trilemma” can be described as follows: tight monetary policy leads to high adjusted interest rate, that attracts foreign investments’ inflow, thus influence the exchange rate. The monetary authorities intervene on the exchange market, stabilizing the exchange rate. This creates additional domestic liquidity that must be re-absorbed by the central bank. Eventually, the monetary policy becomes inefficient and leads to unsustainable losses. In the case of Armenia the same is considered with the only difference - the foreign currency inflow is not in form of investments, but in form of private transfers from the diaspora. In favor of floating exchange rate policy insist considerable part of modern economists, who examine emerging markets. Only free floating policy is able to restore the compatibility of the Armenian export and allows really to reap advantages of economic integration within EAEC. The monetary authorities of Armenia have to return to free floating only intervening in case of high volatility for smoothing out sharp fluctuations. Moreover, it is necessary legally to forbid the banks to conduct open market operations (i.e. currency speculations as well as trade with securities)\(^\text{16}\). It is necessary from the viewpoint of excluding currency risks from the banking sector. The reviewing of currency position standard is supposed to play an essential role in solving the current problems of the banking sector. Instead of the actually used standard of currency position introduce the standard of “by currency parity” that defend banks from high currency risks and helps banks to increase the creditability. Secondly, it is necessary to implement a new approach for creating of reserves that depend on the maturity of liabilities\(^\text{17}\). For example, implement 0% against long-term liabilities, and 100% - against short-term deposits and demand account. This approach allows to mitigate the artificial demand for national currency, to reduce significantly currency and interest rate risks as well as to solve liquidity provision problem for banking sector.

Concerning monetary policy, given the non-monetary nature of inflation in Armenia, it is pointless to fight it with the methods of monetary restraint. Achieving a low level of inflation is seen as the main goal of the current monetary policy of CBA. But, on the contrary, monetary policy should promote economic growth and not serve as a means of combating inflation. The reduction of inflation at any cost will lead to a limitation of the potential for economic growth. The current


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The policy of monetary authorities, which took responsibility for itself only for inflation, can contribute to a decline in economic activity and employment, which, in turn, will lead to an increase in the long-term level of inflation. Therefore, it is necessary to expand and reduce the cost of lending, without fear of accelerating inflation.

References


