ГРОШІ, ФІНАНСИ І КРЕДИТ

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MANAGING FX RISK IN PARTIALLY DOLLARIZED BANKING SYSTEMS

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Introduction. Foreign exchange risks in partially dollarized economies' banking sector is presented in 4 ways: Open FX position – currency mismatch of assets and liabilities. This particular type of risks is similar to all banking systems independent of the dollarization issue.

Revaluation of existing provisioning on foreign currency denominated loans expressed in National Currency. In particular, when the loan is impaired, provisioning is made in local currency, at the existing exchange rate. Change in the exchange rate leads to revaluation of provisioning made for foreign currency denominated loans.

To address this issue, it is possible to include net loans instead of gross loans in calculating of net open FX position. In this case losses (gain) resulting from revaluation of FX loan losses provisioning will be offset by gain (losses) from net open position But this will lead to increase of the dollarization of the asset side, expressed in dollarization of loans, which will negatively impact loan quality due to currency induced credit risks (CICR, *see discussion below*).

Review of research on the issue. Revaluation of foreign currency denominated assets expressed in local currency increases leverage and hence decreases the capital adequacy ratio, since Tier 1 capital is denominated only in local currency.

To solve this problem it is possible the banks to keep capital in the same currency in which the risk exists. Rationale behind this proposal is that capital is held to offset unexpected losses, thus if risk is in certain currency, capital should also be denominated in the same currency in order to avoid foreign exchange risk (which would be exactly the same as longing the open position to change the capital by the same amount). But like the previous case, there is tradeoff: increased dollarization on the passive side will lead to increased dollarization on the assets side of the balance sheet, which will be expressed in dollarization of loans and hence increased CICR.

CICR is the most important, it appears to be the indirect effect of depreciation on loan quality, since in partially dollarized systems FX position of the borrowers is often un-hedged, what means that banks borrow in FX and lend in FX, but the FX risk shifts to the borrowers and enters back the bank balance sheet as currency induced credit risk. The solution looks to be the long FX position, but together with increase in CICR the problem is that, while in case of the national currency depreciation bank will gain from the open FX position and will lose from the increased materialized CICR, in case of the national currency appreciation the positive effect from un-hedged borrowers is much smaller as compared to what it would be negative from depreciation, while the effect from balance sheet is the same, linear in

both cases. Nonlinearity of CICR is another argument, why using long FX position is not the best way to eliminate CICR exposure. In particular, while elasticity of increase in NPLs due to the national currency depreciation is strongly non-linear, as the mentioned direct risk from the open position is linear. Moreover, all above mentioned solutions leading to increase in CICR, means that new FX loans, which are issued instead of the old national currency loans have the highest CICR, provided that banks are aware of the problem and try as much as possible to grant the national currency decreased dollarization of deposits, however this is not achievable in short term. The market can't hedge the risk since all market participants are short. The government should hedge CICR via selling non-deliverable forward contracts to banks, which will enable the banks to issue the national currency denominated loans. The contract should be included in the calculation of the banks' balance sheet FX position and the overall FX position (balance sheet plus off-balance sheet), not off-balance sheet position. It forces bank to use contracts to decrease the dollarization rate of its balance sheet assets, not to sell the contract to someone else, who would like to bet on the national currency depreciation, currency loans to those borrowers, who are the most exposed to CICR.

In a small open economy with low foreign sovereign debt and a large share of import VAT in government revenues, the government is long via its cash flows and can be a natural hedge of a short position of the private sector

Taking into account the inflow based growth of emerging countries, it is expected real exchange rate to appreciate during booms and depreciate during recessions via both the prices and/or the nominal exchange rate. Consequently, even if the government is not long, and its FX position from its cash flows is balanced, the government still benefits since it will save during booms and stimulate the economy during recessions.

The hedging smoothes, a so called V-shaped curve, effect on the exchange rate depreciation in partially dollarized economies, which arises from materialized CICR. Therefore, the government benefits from the higher tax base as compared to what it would be otherwise.

The hedging strengthens the independence of the central bank, both from government, as well as in terms of financial stability. The hedging eliminates pro-cyclicality in efficient interest rates on loans. In particular, when the exchange rate appreciates during booms, the debt service becomes more easy and vice-versa. This, certainly, is the main constrain of the efficient monetary policy in dollarized economies. If the exchange rate is overvalued, not to depreciate it is not the solution, since the overall effect is expected to be though more gradual, but the cumulative effect will be more negative within the medium term .Even if the scheme is seen as bailing out, but it is not, it's still better than the bank's nationalization (moral hazard, after injection of the government's capital, banks are alive, but borrowers are not, with possible negative long term effects).

The moral hazard problem in case of hedging can be easily solved via price of contracts. The price itself should be market determined, high enough for right incentives, but at the same time low enough does not lead to significant increase in the interest rates on loans (contract price has to be incorporated in the interest rates). It should be mentioned, that interest rate differential in emerging economies occurs largely due to the depreciation risk premium, rather than the interest rate parity.

Maintaining the peg is also efficiently bailing out of importers and CICR bearing borrowers within a short term, and bailing out of importers within a medium term. Hedging eliminates CICR risk premium. Hedging eliminates depreciation risk premium for investors, who are not willing to bear FX risk. In fact, FX risk is largely presented only in case of the national currency loans, since otherwise investors invest in real assets, company shares, which have less FX risk.

Elimination of risk premiums would lead to the increase in loan supply/demand, including foreign inflows in the financial system: possible shortcomings of the scheme.

During recession, the government will face difficulties to finance expenditures, especially, if the government hasn't saved during booms. However, the government is bearing the lowest risk, and therefore, it is always easier for the government to borrow during recessions. Besides, effect of the so called V-shaped curve, existence of medium to long term contracts in line with cash flows of loan repayments should be taken into consideration.

It is necessary to overcome the conventional wisdom/thinking that it is not the government's role to provide hedge to the market. In fact, since the scheme is designed to smooth short term fluctuations, its government authorities' role is to address the problem. In the long term, given the independence of monetary policy, ability to maintain inflation at the target, to which the scheme contributes a lot, the exchange rate should fluctuate, not depreciate. Furthermore, due to so called "Balassa-Samuelson" effect, the exchange rate in emerging economies should appreciate in the long run, which also might happen via the nominal one. Therefore, the scheme can't be seen as a long term subsidy provided by the government. In fact, it should be seen vice versa.

Estimates of the government's FX position and banks' need to eliminate/minimise CICR: the case of Georgia

The efficient CICR exposure of Georgian banking sector is around 2700 million GEL equivalent. This number includes increase in dollarization of assets due to banks allowing to have provisioning in FX and allowing banks to have FX capital for FX denominated loans, where CICR is non-existing or comparatively low (export loans, loans where source of repayment is transfers from abroad, tradable sector, mostly importers, e.g. petroleum importers/distributors, where CICR is non-existing).

The maturity taking into account loan repayment cash flows makes:

– up to 1 year – 800 million GEL equivalent;

– from 1 up to 2 years – 400 million GEL equivalent;

– from 2 up to 3 years – 300 million GEL equivalent;

– from 3 up to 7 years – 1200 million GEL equivalent.

The government's FX position from its cash flows can be estimated in the following way based on 2014 budget plan:

Long

VAT from imports – 1629 million GEL equivalent

Custom duties – 43 million GEL equivalent

FX component of privatization – 221 million GEL equivalent

Increase in FX debt – 776 million GEL equivalent

Grants – 554 million GEL equivalent

Short

FX debt payments (principal and interest) – 304 million GEL equivalent

FX expenditures – 601 million GEL equivalent

Excise tax from imports – 350 million GEL equivalent

Consequently, net FX position of the government from the simple sum of numbers above equals to long 1968 million GEL equivalent

However, exchange rate elasticity of imports should be taken into account. According to IMF (*Exchange Rates and Trade Balance Adjustment in Emerging Market Economies, October 10 2006, Approved by Mark Allen)*, average elasticity of USD/national currency nominal exchange rate in the short run equals to -0.36%. What means that given 1% depreciation, in the short run GEL equivalent of VAT from imports and custom duties is expected to go up by 0.64%, and excise tax from imports is expected to go down by 0.36%. This lowers 2009 government's long position from VAT on imports and custom duties from initial 1672 down to 1070 and, taking into account only negative effect from excise tax, further down to 944 million GEL equivalent and the overall position from 1968 down to 1590 million GEL equivalent. At the same time, positive effect of the no more existing, so called V-shaped curve should be added, as well as the short term effect of improvement in competitiveness on government's revenues. According to the same source from IMF, the medium run elasticity changes from –.36 to –.42, which decreases the estimated government's long position from VAT, custom tax and excise tax from 944 down to 823 million GEL equivalent, what can be seen as the second year FX position from the forementioned items.

It should be mentioned, that according to same source, the countries with high foreign debt to GDP have higher elasticity numbers, what is an argument in favor of the government's ability to provide hedge in case of Georgia

At the same time, price elasticity of imports has to be taken into consideration. E.g.: if price setting in Georgian market of imported goods to significant extent in Euros also and Euro/USD exchange rate depreciates together with GEL/USD exchange rate (GEL/Euro exchange rate is constant), than this is an argument against the government's long position. However, the problem can be addressed easily via providing to the banks hedging for Euro/GEL exchange rate and for Euro/USD risk the banks will easily hedge themselves.

The outstanding sovereign FX debt by the end of 2009 equals to 3 billion USD.

Assuming the government's FX expenditure (except dept payments) to grow in USD terms by 5% annually, and taking into account 360 million USD during 2009, the present value of future expenditures, using discount factor of 7%, equals to 18 billion USD.

Assuming excise tax on imports will increase by 5% per year in USD terms and taking into account 2009 excise tax revenues, the present value at discount factor of 7% equals to 10.5 billion USD and taking into account elasticity the short position is 4.5 billion USD.

Assuming VAT from imports and custom tax will increase by 5% per year in USD terms, and taking into account 2009 number, the present value at discount factor of 7% equals to 50 billion USD and, taking into account elasticity, the long position is 30 billion USD.

Overall estimated long FX position of the government equals to 4.5 billion USD

Conclusions. Generally, to have more accurate estimates on short, medium and long run effects of the scheme, more research should be done, however it appears that the scheme is beneficial and therefore should be implemented, especially added possible limited involvement of the central bank by short term swaps for monetary policy purposes, which can be seen as the money supply instrument.

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Tabatadze Naira, Doctor of Science, Associate Professor. **Mchedlishvili Manana**, Doctor of Science, Associate Professor. Caucasus International University. **Managing FX risk in partially dollarized banking systems.** The article deals with the position that, as a whole, for a more accurate assessment of short, medium and long-term effects of exposure to foreign exchange risk management models, it is necessary to perform more extensive research. It is proved that, if the model is advantageous, according to the authors, it is necessary to apply it in practice. The authors also note that this application is particularly important, giving the possibility of limiting the participation of the central bank in the monetary policy for short-term changes, which can be considered as a tool for regulating money supply.

Keywords: banking system, money supply, central bank, monetary policy, exchange rate risks.

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Табатадзе Наира, доктор экономики, ассоциированный профессор. **Мчедлишвили Мана**, доктор наук, ассоциированный профессор. Кавказский международный университет. Исследовано валютный риск в банковском секторе при частичной степени долларизации экономики в четырёх направлениях. Приведены суждения о переоценке в иностранной валюте активов, выраженных в местной валюте, которые увеличивают кредитное плечо и, следовательно, уменьшают коэффициент достаточности капитала. Определены направления возможного ограниченного участия центрального банка в краткосрочных обменах денежно-кредитной политики, что можно рассматривать в качестве инструмента денежной массы. Доказывается, что для получения более точной оценки коротких, средних и длительных эффектов воздействия на риски необходимо осуществить больше исследований, чтобы количество результатов увеличило плотность вероятности прогнозируемых рисков.

Ключевые слова: банковская система, денежная масса, центральный банк, денежно-кредитная политика, валютные риски.

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Табатадзе Наїра, доктор економіки, асоційований професор. **Мчедлішвілі Мана**, доктор наук, асоційований професор. Кавказький міжнародний університет. Досліджено валютний ризик у банківському секторі при частковій доларизації економіки в чотирьох напрямах. Наведено судження про переоцінку в іноземній валюті активів, виражених у національній грошовій одиниці, які збільшують кредитне плече і, отже, зменшують коефіцієнт достатності капіталу. Визначено напрями можливої обмеженої участі центрального банку в короткострокових обмінах грошово-кредитної політики, що можна розглядати як інструмент грошової маси. Доведено, що для отримання більш точної оцінки коротких, середніх і тривалих ефектів впливу на ризики необхідно здійснити більше досліджень, щоб кількість отриманих результатів збільшила щільність імовірності прогнозованих ризиків.

Ключові слова: банківська система, грошова маса, центральний банк, грошово-кредитна політика, валютні ризики.