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Dollarization in Belarus: Preconditions and Perspectives of Dedollarization Policies

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Dollarization in Belarus: Preconditions and Perspectives of Dedollarization Policies

Summary

This paper deals with the phenomenon of dollarization that is peculiar for transition countries. Rather often dollarization is considered as one of the preconditions of financial distresses and as the factor that restricts the effectiveness of the monetary policy and makes exchange rate intervention more dangerous. Moreover dollarization may lead to additional distortions in the economy, implying restrictions on the economic policies. However, one can argue in favor of dollarization, which enables countries to avoid inflationary finance and thus introduces stability in the financial sector. In majority of contemporary studies the issues of the financial dollarization is being analyzed. We show that in case of Belarus, emphasizing real dollarization and cash currency substitution should be highlighted in one row with the financial dollarization, while they intermediate each other. So in this paper we firstly focus on the preconditions of the financial dollarization and show that struggle against it should be carried out alongside with the elimination of factors that lead to real dollarization and currency substitution. Further, we move to the analyses of the financial dollarization looking at it as the established equilibrium at the credit and deposit market. We emphasize the commonly accepted drivers of the financial dollarization such as the maximization of return volatility, the minimization of credit risks, and the maximization of the option value of bail-out or deposit guarantees and analyze their impact on the financial dollarization development during the crisis period. We show that before the crisis there were preconditions for the dedollarization policies and lowering financial dedollarization in its turn contributed much in providing stability at the Belarusian financial sector before the crises. Alongside we show that during the crisis the external environment strengthens the drivers of dollarization. In this case the priority for the stability of the financial sector should be more reasonable and dedollarization policies might be taken at the back seat. Finally, we show that direct dedollarization policies might not be effective, while strengthening of the monetary policy credibility usually results in lowering financial dollarization.

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1. Introduction

The phenomenon of dollarization is rather widespread in developing and transition countries. Usually it is consequent to the periods of high inflation or depreciation and thus may be interpreted as the consequence of the weak monetary policy in previous periods. From this view, advocates of dollarization (including the case of voluntary official dollarization) argue about its stabilization impact on the financial system, while holding assets in foreign currency is considered safer by the economic agents. Furthermore, dollarization may oblige a central bank to eliminate inflationary finance and hence, the probability of currency crisis and the pressure on the balance of payments is lower. If that a case, the volatility and the level of nominal interest rates might be decreasing. Ultimately these effects are to spur economic growth. On the other hand, dollarization means substitution of assets in foreign currency by the assets in foreign currency, which means automatic reduction of the demand for the domestic currency. This results in loosing seigniorage and less room for independent monetary policy. Thus dollarization (euroization) usually is considered as an advantage by small countries that prefer to avoid independent monetary policy in favor of long-term stability. In this extreme case, countries may unilaterally adopt foreign currency as the legal tender, which means voluntary official dollarization. However, if the country wants to carry out independent monetary policy, the dollarization of assets is considered to be unfavorable and only limited short-term positive effects of it may be discussed.

The problem of dollarization is traditional for Belarus since 90-s. There was an explicit trend of decreasing financial dollarization in 2002-2006. Later on it stabilized and the fluctuations in 2007-2008 were limited. But during the financial crisis and especially after the devaluation of the national currency in the beginning of 2009 it jumped and the deposit dollarization ratio exceeded 50%. In 2009 National bank of Belarus (NBB) declared about de-dollarization policy at the background of the global crisis pressure. At the initial stage, the de-dollarization policy measures dealt with restricting settlements in foreign currency between residents (for instance, for fuel) and recommendations to banks to reduce interest rates in foreign currency[1]. In the beginning of the year the intention to the de-dollarization might have been associated with the deficit of the foreign currency at the domestic market. However, later on when the sharpness of the hard currency deficit mitigated, the NBB kept on this policy and even widened the number of instruments used. Since August, granting loans to households in foreign currency was prohibited, which automatically restricts the dollarization of the banks' assets side. Later, NBB restricted using foreign currency during other deals between residents. For instance, it prohibited: granting non-banking loans (loans provided by non-financial enterprises) in foreign currency; leasing payments in foreign currency when the subject of the leasing is the machinery produced in Belarus; payments by foreign currency for securities nominated in this currency; payments of households for air and railway transport in foreign currency; payments in foreign currency by non-residential households for educational services, etc. NBB mentioned that due to such measures it wants to increase the demand for the national currency, which dropped significantly in 2009. However, the effectiveness of the de-dollarization policy during the crisis is rather doubtful, while all major dollarization indicators do not witness about favorable dynamics. Furthermore, there are a couple of negative effects in the financial system that may be associated with the de-dollarization policy.

Hence, in the paper we deal with the problems of dollarization in Belarus, focusing attention on its roots and searching for the best policy instruments and most favorable conjecture for their implementation. In Section 2 we focus on the distinction between the cash currency substitution and financial dollarization, as well as their intermediation. Section 3 is devoted just to the financial dollarization, its origins and the corresponding implications on monetary policy. In Section 4, we discuss carrying out de-dollarization policies, its expediency and favorable time for it, as well as the effectiveness of the individual policy instruments. Major conclusions are provided in Section 5.

[1] Alongside, NBB officials pay much attention to organizing settlements in foreign trade in the national currencies of the trade partners. However, this problem is broader rather than dollarization within the country and may be interpreted as one connected with the global perspectives of the US dollar. Hence, this issue demands wider research and we eliminate from our analysis in this paper.

2. Dollarization: forms, causalities and causes

2.1. The forms of dollarization

Majority of recent studies dealing with dollarization mainly focus on financial dollarization, i.e. dollarization of financial contracts (loans, deposits, etc.). But this form of dollarization is not the only one and may coexist with other forms of dollarization. Herewith real dollarization, i.e. nomination of prices and wages in foreign currency, and cash currency substitution should be mentioned. Each of this form may be associated with a particular function of money: real dollarization corresponds with function of money as the standard of value, cash currency substitution with the medium of exchange, and financial dollarization with the store of value. Either form of dollarization may dominate in the economy, while other forms may be weak and intermediation among the forms of dollarization may be weak as well. At the same time, one form of dollarization may cause progress in another one and different forms of dollarization may co-exist. When talking about dollarization and de-dollarization policies it should be clearly realized which form of dollarization is the obstacle for achieving goals and what are the negative impacts of this form of dollarization.

Real dollarization might be considered harmful from the view of the monetary policy effectiveness, while the instruments of the monetary policy do not directly affect prices and wages nominated in other currency rather than the national one. However, we may argue about more stable relative prices and wages based on real variables under the condition of real dollarization, which may eliminate distortions due to the nominal variables otherwise, and thus provide more effective allocation of resources. Trying to estimate the scope of real dollarization faces with absence of the relevant economic indicator. None of the countries as a rule provide statistics on the percentage of wages and prices nominated in foreign currency. But despite this, the scope of the real dollarization is mainly limited in developing countries (Ize, Parrado (2006)). The simplest explanation is the legal restriction on nomination of prices and wages in foreign currency that takes plays in majority countries. In Belarus legal limitation of wages dollarization is also empowered by the high share of employment provided by the budget sector and state-owned enterprises, at the background of the low share of foreign owned companies that potentially can nominate wages in foreign currency.

One more form of dollarization takes place when a foreign currency substitutes domestic currency as a medium of exchange. In practice, it can be referred to substitution of the cash assets by a foreign currency. This form of dollarization also faces the problem of measurability, while it is difficult to estimate the volume of foreign currency in circulation within the country. Through this we may argue that in case of substantial cash currency substitution, official measures of demand for cash currency that includes only domestic currency may not be fully informative. If that a case, more correctly would be considering the total demand for cash consisting of local and foreign currency. Ignoring it, at least due to the lack of the data, may lead to doubtful conclusion about money demand in the economy. Feige and Dean (2002) argue that missing cash currency substitution may lead to a range of misleading policies, especially in transition countries. They show that the effect of the cash currency substitution may be rather broad and deal not only with the limitation of monetary policy possibilities, but also distort all macroeconomic information through widening the unreported part of the economy. Feige and Dean (2002) argue that increasing foreign cash transactions reduce the cost of tax evasion and facilitate participation in the "underground" economy. Moreover, it may weaken government's ability to command real resources from the private sector and may increase fiscal deficit. It should be emphasized that cash currency substitution is especially substantial in transition countries. Though the estimation of Feige and Dean (2002) are rather old, they are valuable through showing that currency substitution may prevail over asset substitution, which of a great concern for transition countries.

The most widespread measure of dollarization is the financial dollarization that captures nomination of financial contracts in foreign currency. It may be measured either from the banks' asset side, i.e. through the share of loans nominated in foreign currency, or through their liability side, i.e. through the share of foreign currency deposits. Taken alone financial dollarization substantially narrows a room for monetary policy by limiting domestic money in respect to broad money. In worst cases it may make monetary policy fully dependent on the supply and demand on foreign currency, and money supply by the central bank can be changed only through the changes in its foreign assets. It means that a monetary policy is something like

'forced currency board' and looses its independence. Furthermore, if dollarization of assets and liabilities is not proportional, it may trigger banking system by creating a balance sheet effects. The more widespread situation is the higher dollarization of deposits rather than loans, which means that banks undertake additional exchange rate risks.

2.2. The reasons of dollarization and their inter-linkages

Ize and Parrado (2006) provide a range of economic reasons, explaining relatively low scope of the real dollarization. First, the asymmetry between reactions of real dollarization and financial dollarization is relevant to the monetary policy directed at offsetting exogenous shocks. If monetary policy is used to offset output and productivity shocks, real dollarization might not be sensitive to this policy. Alongside, if this policy triggers inflation volatility, the financial dollarization is expected to rise. Second, they argue that trade globalization could lead to rising level of financial dollarization, while the dollarization of wages might not be sensitive to it. Third, they show that national currency may be retained in real transactions as the tool to adjust to real shocks, at the same time when doing financial transactions a foreign currency might be chosen as the protection from the nominal shocks. At the same time, in case of high correlation between local and world shocks, the real dollarization is expected to grow, unless the quality of local monetary policy improves.

The reasons of cash currency substitution are mainly consequent to the periods of high inflation and/or depreciation and there are expectations of a further inflation/depreciation. Economic agents choose foreign currency as a medium of circulation in case the domestic currency cannot fully fulfill this function from their point of view. This may happen for instance consequent to the real dollarization and that will be a case of the so called payments dollarization. But the incentives of holding foreign currency in cash are not limited by the real dollarization. Cash foreign currency may be held as a store of value, while national currency is associated with inflationary and/or depreciation penalties. In this case, despite the transactions are still done in the national currency, economic agents will prefer foreign currency as their assets during the periods among transactions. Furthermore, cash currency substitution may be consequent to the restricted financial dollarization. As a rule these two forms of dollarization co-exist, while the motivation for them is rather similar. But in case of limitations for dollarization of deposits, cash currency substitution may prevail over the financial dollarization. Hence, cash currency dollarization will be based not only on using money as a medium of exchange, but as a store of value alternative to deposits in domestic currency. So we must emphasize that cash currency substitution is closely connected with the financial dollarization. As a rule, these two types of dollarization co-exist, but under different conditions there maybe spillover from one form of dollarization to another one.

Besides cash currency substitution, real dollarization may spur financial dollarization. But as shown above nowadays this causality is not so widespread, while countries have instruments of limiting real dollarization and external environment may promote real dollarization rather slowly. However, there is a distinction in consequences of the financial dollarization alone and in one row with the real dollarization. If there is a real dollarization, then both types of dollarization push each other, hence monetary policy faces with increasing pressure on its effectiveness. But if the scope of real dollarization is low, it limits the demand on loans nominated in foreign currency and then disproportions between dollarization of banks' liability side and asset side may increase. It results in increasing fragility of banks to the exchange rate risks. Moreover, it restricts exchange rate policy, while any decision of the central bank on the level of the exchange rate will lead to negative consequences in case if the exchange rate becomes overestimated. Not devaluing may lead to shock from the real sector, say because of lack price competitiveness of exports. But devaluing may provoke banks run due to balance sheet effect.

Taken alone financial dollarization is the most widespread type of dollarization nowadays. While just this type of dollarization is of major concern we further consider it in more details.

3. Financial dollarization: nature and impact

Financial dollarization is of concern for central banks in many transition and developing countries. This type of dollarization often co-exist with cash currency substitution, hence it also narrows the possibilities of autonomous money supply by the central bank, making it dependent on the foreign currency flows. Furthermore, the central bank's possibilities of transmitting desired interest rate impulses on the funds nominated in foreign currency are also limited. Fi-

nally, financial dollarization removes from the central bank control the process of base money multiplication and forming of the broad money. Alongside, the impact of financial dollarization is not limited by the monetary policy, but may challenge fiscal policy, prudential regulation, etc. Financial dollarization may result in insufficient budget revenues or excessive budget expenditure in case of nominating part of them in foreign currency due to exchange rater risk. Furthermore, government borrowings may be considered worthwhile in order to prevent additional inflows of foreign currency. This actualizes problems of the fiscal policy and accumulation of the government debt. From the view of the prudential regulation financial dollarization may determine problems of financial sector's vulnerability, unacceptable level of the currency-induced credit risk and liquidity risk. So financial dollarization is a huge phenomenon that strikes a number of economic spheres and weakens the effectiveness of macroeconomic policies. Hence, the necessity of struggling against it seems to be evident.

Explaining the reasons of the financial dollarization is not that simple as it may see intuitively. High inflation and/or depreciation in the past do not fully explain financial dollarization, especially the deposit dollarization. High inflation may affect the expectations of the economic agents, but if there are no rational preconditions for reflation and/or progressing depreciation, one may expect dollarization of deposits to be reducing. Moreover, inflation penalty might not be a reason for a persistent financial dollarization, while an interest rate on the financial contract as a rule includes inflation premium in addition to a certain real interest rate. So financial dollarization is more complex effect and just this type of dollarization is more peculiar as a prevailing one in transition countries.

Summarizing the recent studies on financial dollarization we may explain it through market equilibrium in which both lenders and borrowers choose an optimal currency composition. Depositors' side may be modeled basing on the assumption that they deal with the expected real returns of the deposit portfolio in different currencies. The risk-aversion assumption means that they minimize the variance of the real returns, i.e. prefer minimum variance portfolio (MVP). In Ize and Yeyati (2003) it is shown that the dollar share of MVP, which they call 'underlying dollarization' may be presented as the function of volatilities of inflation and real depreciation[2].

$$\lambda^* = \frac{S_{\pi\pi} + S_{\pi s}}{S_{\pi\pi} + S_{ss} + 2S_{\pi s}}, \qquad (1)$$

where S_{ij} – the correspondent element of the variance-covariance matrix between inflation and real exchange rate disturbances.

This approach evidently show that for a given inflation volatility and covariation between inflation and real depreciation, an increase in real depreciation rate volatility leads to the decrease of the underlying dollarization (i.e. $\frac{\partial \lambda^*}{\partial S_{ss}} < 0$). At the same time, increasing volatility of the inflation rate at a given volatility of the real exchange rate and covariation between inflation and real depreciation, leads to increase in underlying dollarization (i.e. $\frac{\partial \lambda^*}{\partial S_{\pi\pi}} > 0$). Ize and Yeyati (2003) has shown that this underlying dollarization level is a significant factor in explaining the dollarization level across countries, while it is a significant variable in panel regressions.

However, the expression of the underlying dollarization ratio through interrelation of inflation and real depreciation disturbances leads to a number of obstacles when interpreting the role of the monetary policy regime. From this view, it is worthwhile to simplify the approach by Ize and Yeyati (2003) and express the underlying dollarization as a function of volatilities of inflation and nominal exchange rate[3]. From this view, the share of dollar deposits in MVP portfolio may be expressed as follows.

[2] They consider the real depreciation in regard to the formation of real returns here only as a function of a nominal exchange rate and inflation rate, i.e. without the impact of foreign inflation rate.

[3] Here we consider the growth rate of the real exchange rate as the difference between the growth rate of the nominal exchange rate and the inflation rate.

$$\lambda^* = \frac{S_{\pi\pi} + Cov(\mu_\pi, \mu_e - \mu_\pi)}{S_{ee}}, \quad (2)$$

where $S_{\pi\pi}$ and S_{ee} – variances of inflation and nominal exchange rate; μ_π - inflation rate, μ_e - growth rate of the nominal exchange rate.

This view is more convenient for the analysis of impact of different monetary policy regimes on the dollarization level. Increasing disturbances in inflation still increase the dollarization level, while increasing disturbance of the exchange rate reduce it. But under different regimes, the behavior of depositors may change, which is determined through different covariance between inflation and nominal exchange rate (see Table 1).

Table 1: Different monetary policy regimes and underlying dollarization.

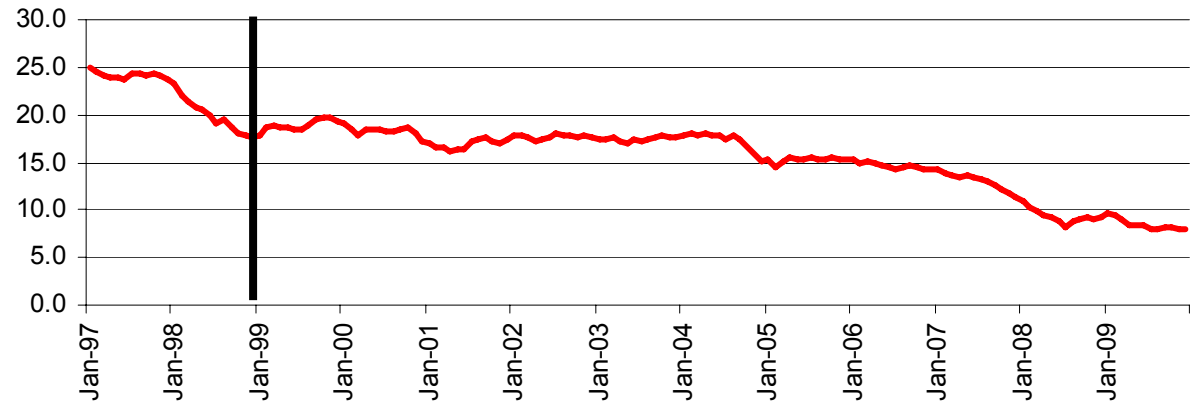
Monetary policy regime	μ_π	μ_e	$\mu_e - \mu_\pi$	$Cov(\mu_\pi, \mu_e - \mu_\pi)$	$S_{\pi\pi}$	S_{ee}	λ^*
Hard peg	-	0	$-\mu_\pi$	$-S_{\pi\pi}$	-	0	Not defined
Peg	-	$\mu_e < \mu_\pi$	<0	<0	high	low	
Flexible exchange rate	$\mu_\pi < \mu_e$	$\mu_e > \mu_\pi$	>0	>0	low	high	
Inflation targeting	→0	$\mu_e > \mu_\pi$	>0	→0	→0	high	→0

Source: Own elaboration.

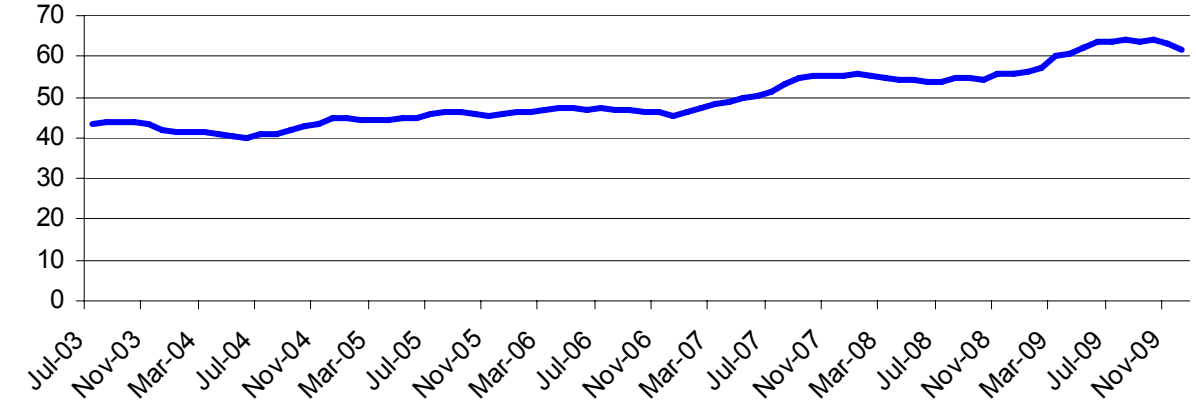
The conclusion that dollarization is sensible to the monetary policy regime is easily confirmed by a number of examples, when dollarization was substantially reduced due to introduction of inflation targeting (see Box 1).

Box 1: International experience in dollarization dynamics

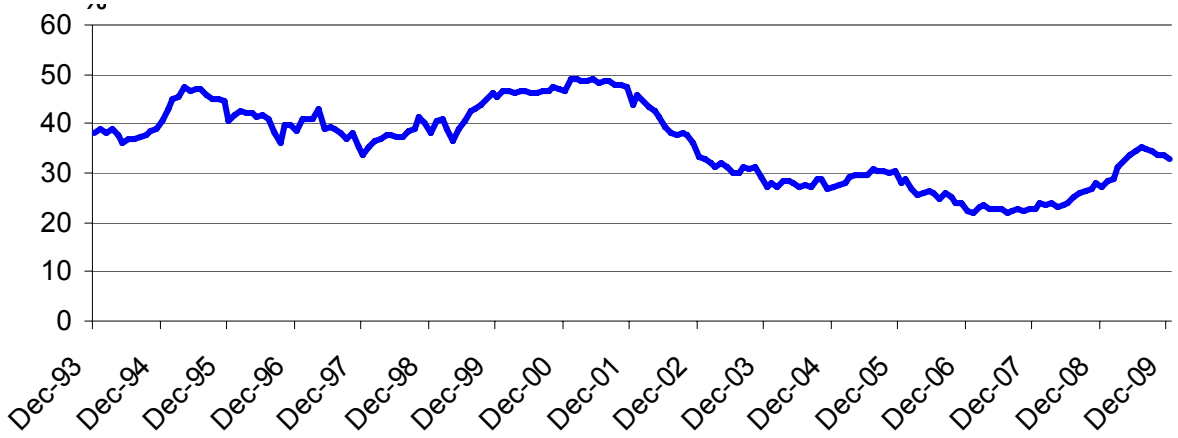
1. Deposit dollarization in Poland (IT since 1999), %



2. Deposit dollarization in Latvia (hard peg), %



3. Deposit Dollarization in Lithuania (hard peg), %



Dollarization from the side of loans may be presented as the mirror of the banks' liabilities side, while there should be equilibrium at the banks' deposit and loan market. From the side of borrowers, this equilibrium is settled due three groups of factors. First, it is minimization of return volatility under the assumption of risk aversion by investors, who then prefer currency that is more stable and credible in the long-run. Ize (2005) through a formal model under the assumption of risk-averse borrowers and risk-neutral banks, shows that equilibrium at the lending market will restored with a currency composition, which will provide minimal variance of returns. This currency composition will be proportional to the expected inflation passthrough of devaluation. In this case, the dollarization does not depend on the probability of devaluation of the exchange rate or change under current regime or on change in the monetary policy regime. It only depends on expectations of the current monetary policy to follow a collapse of the exchange rate, "no matter how improbable this collapse".

The second driver of dollarization is the propensity to minimize credit risk by banks, which favors the currency that minimizes the probability of default. Under the condition of potential exchange rate overhang, banks may face two types of defaults on loans. First, is associated with devaluation that triggers borrower whose earning nominated in the domestic currency, while his liabilities (bank's loan) is nominated in foreign currency (a balance-sheet effect for the non-financial enterprises). So it is mainly consequent to currency risk. A second one is consequent to the case when there is no devaluation, which may hit the financial stance of the borrower due to lost price competitiveness. This case means "output-induced" credit risk. In this case minimum variance portfolio will be associated with absence of the currency risk, but at the same time it is more expensive for borrowers, i.e. higher "output-induced" credit risk will be peculiar to it. It is assumed that banks fully internalize credit risks and hence minimize them. In this case, a number of equilibrium positions are possible, depending on value of both types of risks. Choosing between a high dollarization mix and a low dollarization mix, banks will choose the high one if the currency risk associated with it will be lower than the "output-induced" risks associated with a low dollarization mix.

The third factor of financial dollarization, it is maximization of the option value of bail-out or deposit guarantees, which promotes a currency that maximizes expected costs to the insurer. Burnside, Eichenbaum and Rebello (2001) show that when deposits are insured, banks have additional incentives to attract deposits and grant loans in the currency that maximizes "the option value of the implicit guarantees". If that a case, banks quit from risk neutrality and full internalization of risks. Hence, they may expose themselves to higher total risks. This moral hazard may be eliminated through the restrictions in the prudential regulations, while minimal capital requirements and capital adequacy ratio will lead to less risky behavior.

The common view on the financial dollarization thus supposes that is not consequent to sudden shocks, but more to rather weak monetary environments. The latter forms unfavorable expectation of the economic agents, which finally drives the financial dollarization. Among the characteristics of the monetary policy that promotes financial dollarization Ize (2005) stresses: (i)

lack of credibility, (ii) fear of floating, (iii) overvaluation overhang, (iv) asymmetry[4]. So the major recommendations for reducing financial dollarization are usually dealing with the increasing credibility of the monetary policy and increasing the extent of exchange rate flexibility. It should be emphasized that the flexibility of the exchange rate is much more important rather than interest rate spread between financial contracts in domestic and foreign currency. In case of increasing interest rates, the steady-state based on the minimum variance portfolio will not change substantially. However, increasing volatility of the exchange rate will make the returns on assets nominated in the foreign currency volatile and may substantially move the steady-state in favor of national currency.

4. De-dollarization policies in Belarus

As shown above major de-dollarization policies of the NBB were concentrated around prevention of real dollarization, i.e. nomination of prices in foreign currency that may partially drive cash currency substitution. While Belarus intends to the sovereign monetary policy and the scenario of official dollarization seems to be unacceptable, these administrative measures might be effective from the view of preventing currency substitution, though the scope of these measures application is not so big. So these measure contribute to the diminishing of the real dollarization, which seem not be a severe problem in Belarus. However, the task of reducing real dollarization may contradict to progressing involvement of Belarus in the global economy. The latter, ceteris paribus, may gradually determine increasing trend of the real dollarization in case of insufficient credibility of the monetary policy.

Another part of the NBB's measures are directed just at prevention of the financial dollarization (mainly liability side of the bank) and deals with interest rates. Since the beginning of the year NBB maintains interest rates in national currency at a definitely high level both in nominal and real terms. At the same time NBB recommended banks to reduce interest rates in foreign currency in order to make domestic currency more attractive as a store of value. Herewith two issues should be emphasized. First, as shown above financial dollarization is closely connected with cash currency substitution and mirrors the effect of "less than credible monetary policy" (Calvo, Vegh (1996)). In this case high volatility of the interest rates in the national currency and expectations of further possible shocks derive in higher demand for foreign currency and correspondent willingness to deposit in this currency. As shown in the model by Ize (2005), when choosing a currency portfolio economic agents mainly compare not current returns, but the volatility of the return during the long-term. *Hence artificial reduction of interest rates in the foreign currency may partially result not in financial contracts in national currency, but in increasing cash holding of foreign currency.* This tendency is especially dangerous during the crisis when the lack credibility in national currency may lead to: (i) lowering propensity to save, (ii) increasing foreign cash holdings in the structure of savings. One can expect that the reaction of households to crisis should result in increasing propensity to save and reducing propensity to borrow. This tendency takes place in Belarus, but the scope of it is very limited (see Table 2).

Table 2: Average propensity to save and borrow by households, % of personal income

	2008						2009		
	Q1	Q2	Jan-Jul	Q3	Q4	Annual	Q1	Q2	Jan-Jul
Personal savings, as % of personal income	6.3	5.5	5.8	3.9	0.0	3.8	9.8	4.9	6.9
Households loans outstanding, as % of personal income	-4.0	-6.8	-5.8	-7.5	-5.9	-6.2	-5.5	-2.9	-4.0

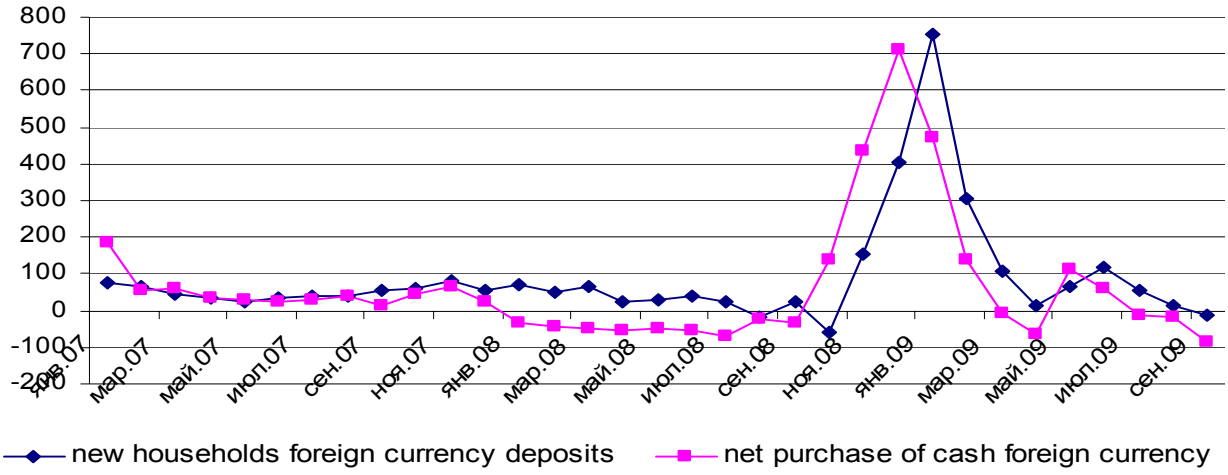
Source: Belstat.

At the same time the scope of this tendency is rather limited. Mainly it should be explained by the maintained real growth of personal income 2009. However, partially it may be explained by the "less than fully credible monetary policy" effect. So further policy directed at artificial dollarization through reducing interest rates in foreign currency may result in increasing cash currency substitution and using it not only as the medium of exchange, but mainly as a store of value. Estimation of the effect of currency substitution is rather difficult. But partially it may be

[4] Asymmetry of monetary policy means that a central bank may adjust to overvaluation through devaluation, but never appreciate the national currency in case of undervaluation. This forms expectations that the exchange rate may move only in one direction, making the domestic currency cheaper.

characterized through the relationship between purchases of cash foreign currency and new households' deposits in foreign currency (see Figure 1).

Figure 1: New households foreign currency deposits and purchases of cash foreign currency



This data is not so much informative about cash currency substitution, as it does not capture the multiplication of foreign currency deposits. Nevertheless, we may argue that in the end of 2008 cash currency substitution took place in one row with increasing dollarization of deposits, while in 2009 this trend was mainly eliminated and the dollarization was mainly related to the financial one. On the other hand reduction in demand for domestic currency which takes place since the beginning of the year (as of October 1st it dropped by 17.3% yoy in nominal terms) alongside with increasing real incomes and stagnating savings ration may be interpreted as at least partial increase in cash currency substitution. So this problem is likely to exist, but is not likely to be sharp currently. However, further measures directed at artificial decrease of foreign currency interest rates may result in changing form of dollarization in favor of cash currency dollarization and outflow of foreign liquidity from banks deposits to cash holdings. The latter is extremely dangerous during the crisis, which accompanied by the lack of liquidity in the banking sector. So, active de-dollarization policies based on interest rates may lead to further liquidity outflow. Alongside the decrease of exchange rate risks due to the balance sheet effect will be limited. **Thus, we argue that current period when the growth rate of incomes is very low and going to become negative and the NBB has got a number of challenges it not opportune for de-dollarization through interest rates. The effectiveness of these measures will low, while dollarization will mainly change its form alongside with the liquidity outflow from the banking sector.**

The conclusion about unfavorable period for de-dollarization policies may be also derived through the analysis of credit risk exposure. Currently it is rather difficult to assess currency and output-induced credit risk, while during the crisis these estimations may be not fully correct. Furthermore, refinancing by the NBB and additional inflows of liquidity to the banking sector by the government allow banks higher credit risk expose, which also affect the dollarization equilibrium.

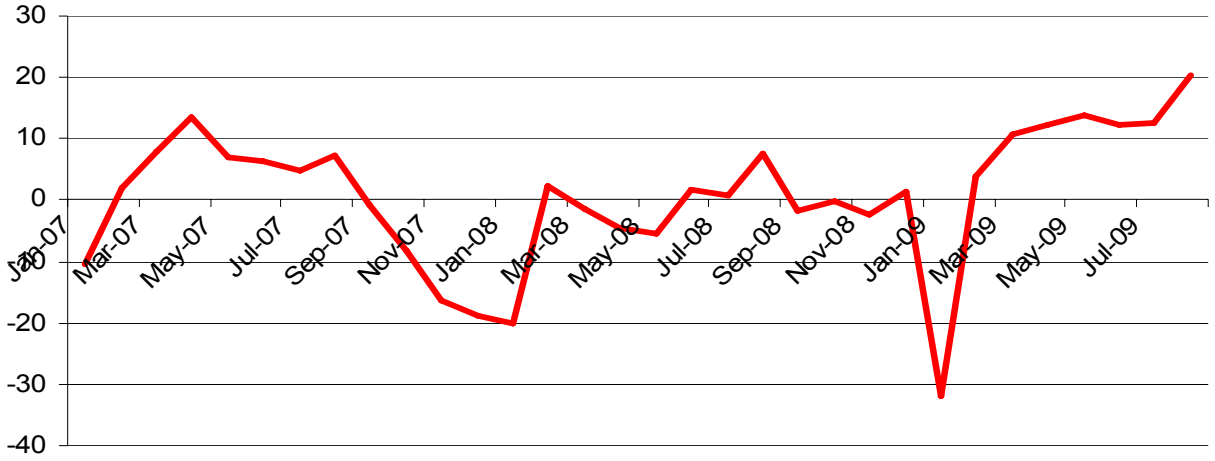
Another theoretical driver of dollarization – volatile interest rates – seems to have contributed much to the Belarusian dollarization. As shown in Figure 2, NBB's policies results in the high volatility of the interest rates of the domestic currency. So from this view, NBB's efforts might not be effective, while equilibrium between borrowers and lenders is restored basing on minimizing the return volatility. In this case high interest rates in the national currency are more being a signal of expected depreciation, rather than a signal for de-dollarization.

As theoretical model and a number of empirical studies show (see for instance, Piantkovsky (2003)) **the most effective tool in struggling dollarization from the technical point of view is widening flexibility of the exchange rate**, which will make returns in foreign currency more volatile and thus domestic currency more attractive.

At the same time increasing volatility of the exchange rate is only the one side of the coin. Another one is **the necessity of providing stable inflation** and thus limiting volatility of the in-

terest rates on the domestic currency. **Both these technical tasks are coinciding goals and may be implemented with single monetary policy regime, i.e. targeting inflation.** Besides, providing necessary technical instruments for reducing financial dollarization, inflation targeting requires a wide institutional framework and thus can substantially increase the credibility of the monetary policy (see Kruk, Kirchner (2007)). Furthermore, changing the monetary policy regime can break the coterie – dollarization, fear of floating, high pass through from exchange rate to prices. By changing the institutional environment and the hierarchy of monetary policy goals this regime may contribute to changing the channels of monetary transmission, especially limiting the effectiveness of the exchange rate channel and strengthening interest rate channel. Furthermore, this regime of monetary policy struggles directly against the roots of dollarization – unfavorable expectations – through carrying out policy based on the explicit rule. Hence, in our opinion this logic of the de-dollarization struggle should be the priority one. At the same time all the de-dollarization measures should be taken accurately during the crisis in order to avoid outflow of liquidity from banking sector and shift to cash currency substitution.

Figure 2. Volatility of real interest rates in national currency



5. Summary of recommendations

1. The measures directed at elimination of real dollarization are reasonable, but the balance sheet effect and possible increase in the exchange rate risk of the banking sector should be taken in mind.

2. Artificial reduction of the interest rates in foreign currency is not effective tool for de-dollarization. At the same time it may lead to shift of dollarization from the financial form into the cash currency substitution. Finally, the liquidity pressure on the banking sector may hamper the financial system. From this view, the period of crisis is not favorable time for de-dollarization policies.

3. High interest rates maintained by the NBB are not so much effective for struggling against dollarization. At the same time they may introduce the expectations of the further devaluations. Moreover, they may increase the share of "output-induced credit risk", which may propagate the financial dollarization.

4. Active refinancing of banks and injections by the government distorts the structure of credit risk in the banking system and may lead to additional risk exposure by banks, which may promote the dollarization as well.

5. The most effective technical tool for struggling financial dollarization is increasing the flexibility of the exchange rate and limiting the inflation volatility. These two goals are coincident within the inflation targeting regime[5], which is an effective tool for struggling dollarization. Furthermore, this will increase the credibility of the monetary policy, increase the interest rate passthrough, while reducing the exchange rate one and promote macroeconomic balancing.

[5] For more details see Kruk, D., Kirchner, R. (2007). Adopting Inflation Targeting: Operational Framework for Belarus, IPM Research Centre PP/07/07.