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DILEMMA OF DOLLARIZATION OF THE UKRAINIAN ECONOMY UNDER CONDITIONS OF GLOBALIZATION: ANALYTICAL ISSUES

Summary

The author provides a comprehensive study of the features of transformation of dollarization in the context of globalisation. The theoretical and methodological bases of the study on the economic nature of dollarization are analysed, the evolution of conceptual approaches to the treatment of dollarization are investigated, the basic scientific approaches to the typology of dollarization under various classification criteria, with emphasis on the distinction between its forms and types, are systematised. A hypothesis on the modern dollarization as an objective evolutionary process due to the development of globalisation is enhanced in the thesis. The econometric analysis of the existence of equilibrium levels of financial dollarization in Ukraine was performed on the basis of hysteresis effects modelling using the multi-factor model of a long-term and short-term equilibrium level dynamics of deposit dollarization.

Key words: dollarization, currency substitution, monetary policy, inflation targeting, Ukraine, long-term equilibrium level of dollarization.

JEL codes: F15, F22, F34

Dollarization is not a new phenomenon in the global economy. There are well-known examples of the countries that use another country's currency in the capacity of the national currency, among them – Andorra (since 1278), Liberia (since 1944), Monaco (since 1865), Panama (since 1904) and other countries. This problem has become significant for the emerging economies, with poor institutional structure and unstable macroeconomic environment. After the removal of the borders and the lifting of restrictions on foreign exchange transactions strong foreign currency began to displace domestic currency which is unstable and disposed to devaluation.

Currency co-circulation has its positive effects: under the crisis conditions in the economy and/or high and volatile inflation, assets held by economic agents in foreign currency enable to provide a long-term crediting of the households and serves as the source of financing long-term investments.

Liberalization of the domestic currency transactions attracts foreign investment. At the same time, currency co-circulation is accompanied by substantial costs and risks. It limits the government's ability to strengthen and protect the domestic market, complicates the pursuance of macroeconomic policies, and generates financial instability. The presence of dollarization limits the monetary policy as it makes it impossible to control the cash component of the money supply, which is denominated in dollars. Under these conditions, the state loses monetary levers of control over the inflation. The uncertainty of the structure of dollarization (whether currency substitution or asset substitution dominates) complicates the choice of exchange rate regime and monetary aggregate as the operative goal of the monetary policy. Since foreign currency is replacing national currency, funding budget deficit, *ceteris paribus*, becomes more inflationary. In case the exchange rate of the national currency is subject to significant fluctuations, dollarization is a potential source of balance of payments and financial crises. Liquidity and solvency risks are gradually increasing due to the imbalance in the structure of assets and liabilities of banks and borrowers. The fall in exchange rate causes a deterioration in the solvency of borrowers who raised loans in foreign currency but whose revenues are generated in local currency. In this case, the probability of a banking crisis to break out is almost inevitable.

Duality of the impact of dollarization determines the need in a clear understanding of its effects and the phenomenon of dollarization itself. Dollarization is defined as *an asymmetric currency substitution* and reduced to a full or partial exclusion of domestic currency from domestic transactions due to its inability to perform the classic functions of money (McKinnon 1982). This is not about asymmetric ability of separate currencies to act as world money. Currencies that are functioning as world money have a number of properties, based on their financial characteristics as well as the scale of the transactional zone and the monetary quality, that is the ability to maintain a stable long-term purchasing power. Under conditions of dollarization national currency is functionally separated from the international capital markets and has no external circulation due to the inability to implement quality, required for it to be used in international transactions. It also lacks of a monetary quality which is necessary for it to be completely used in domestic transactions. It indicates that the use of the currency other than the national one in domestic and international transactions of the country means not only competitive advantages of a freely convertible global currency, but the limitation of the functions of national money. The absence of external circulation of national currency and restrictions on balance of payments transactions apply to the full range of monetary processes in the country.

There exists no integral theoretical concept of dollarization, while the understanding of the nature of dollarization as well as explanation of its causes,

forms and types have evolved considerably. The early theories define dollarization primarily as a phenomenon of currency substitution. The definition of currency substitution lies within two divergent concepts. One of them is represented by G. Calvo and C. Vegh (Calvo & Vegh 1996, p. 1). They determine currency substitution as the use of foreign currency as a medium of exchange in domestic market. In turn, R. McKinnon provides a broad definition of direct and indirect currency substitution. The definition of *direct currency substitution* reflects the currency competition as a medium of exchange within the same commodity domain. *Indirect currency substitution* refers to economic agents' preference to non-monetary financial assets of other countries (McKinnon 1996, pp. 367-368). This substitution does not differ from the international capital mobility, being a synonym to *asset substitution*.

There are a number of interpretations between the narrow and broad definitions of currency substitution, some of them being too specific. For instance, currency substitution may signify the change of economic agents' preferences regarding a set of currencies being held (and, consequently, the change of the currency composition of savings and the currency structure of real money supply) (Idrisov & Freinkman 2009, p. 5). Some authors define currency substitution as the situation when the demand for money comes under the influence of foreign economic indicators. Typically, key attention is focused on such external variables of money demand as the opportunity cost of holding different currencies, the inflation differential between the domestic and foreign markets, nominal and real interest rates differentials, as well as the expected and the actual rate of depreciation or devaluation of the national currency (Mahdavi & Kazemi 1996). A common feature is that they regard a currency substitution as a substitution of domestic currency by a foreign currency, applying to all functions of money.

Another approach to explain dollarization was proposed by T. Balino, who defines it as the holding by residents of a substantial portion of their assets in foreign currency assets (Balino, Benett & Borensztein 1999, p. 1). In this case, dollarization is not exceptionally limited to the scope of financial transactions being performed inside the country. It also covers the use of foreign currency in the process of denomination of any assets or liabilities. This approach to the interpretation of dollarization is more constructive, as it takes into account that the foreign currency assets and liabilities can possess a domestic as well as a cross-border nature.

According to some researchers, there is no distinction between dollarization and currency substitution: these concepts are synonymous and, in general, reflect the situation when the country accepts a foreign currency as its own (Vaidya 2005, p. 35). Sometimes dollarization is treated as a special case of currency substitution (Idrisov & Freinkman 2009, pp. 5-6). In some cases, dollarization and currency substitution are considered as two separate concrete

forms of currency co-circulation: dollarization indicates that a foreign currency serves as a medium of exchange, a unit of account and a store of value, while the currency substitution is being restricted to the use of foreign currency as a medium of exchange. In practice, any co-circulation of several currencies can be defined as dollarization or currency substitution, using these terms interchangeably (Kireyev 1999, pp. 23-24).

Despite a large spectrum of the studies on dollarization, it is impossible to identify a comprehensive and accurate assessment of different aspects of this phenomenon. In modern literature there is a wide variation of approaches to the typology of dollarization in accordance with different classification criteria. Some scholars use evolutionary approach in the research, while others associate the origin and existence of different forms and types of dollarization with the functions of money, the degree of legality, areas and sectors of the use of foreign currency. Relevant definitions are quite diverse and cover a broad as well as a narrow meaning of dollarization. Obviously, the alternative theoretical concepts lead to the opposite poles of analysis of dollarization, determination of its level and offer a variety of conclusions for policy.

In accordance with such criterion as the degree of legality of the use of foreign currency as legal tender dollarization can take two main forms – *official* and *unofficial*. It can also have the third form – *semi-official*, which is more rarely identified. *Official dollarization*, also called *formal*, or *full dollarization*, occurs when foreign currency involves the use of foreign currency as the official currency in the countries that refuse to issue the national money or in case there exists a simultaneous circulation of foreign and local currency in the country that is a member of the monetary union (IMF Report 2013, p. 65): the currency of other country circulates as the *sole legal tender*. In macroeconomic terms the use of foreign currency as the legal tender stipulates that the government ceases to effect sovereign monetary policy, therefore, it involves the loss of its ability to directly affect the national economy by monetary means and the switch to fiscal control methods due to changes in state expenditures and budget deficits. *Semiofficial dollarization* refers to *bimonetary system*, when foreign currency serves as “*other legal tender*”. In this case, foreign currency can be widely used in the economy, however, it plays a secondary role as means of payment in comparison with the national currency (Vaidya 2005, p. 36). Such form of dollarization can exist only under the condition of *internal convertibility of the national currency*, when residents are entitled to hold foreign currency as well as foreign currency financial assets and enter into agreements with them at domestic market. Bimonetary system retains a domestic central bank’s functions, provides the government with a limited opportunity to conduct sovereign monetary policy and choose exchange rate regime. Illegal entry of foreign currency in the domestic market is associated with *unofficial* or *shadow dollarization*. It is defined as a combination of *currency substitution* (when

domestic currency is mainly used for conducting small transactions and official payments – taxes, fees, duties) and *asset substitution* (when foreign currency plays a key role in conducting large-scale operations, accumulating capital and savings, receiving loans). Unofficial dollarization occurs when economic agents hold their wealth in foreign assets even though foreign currency is not a legal tender in their country of residence. Such dollarization can take different forms: holding foreign currency, foreign currency deposits in domestic banking system or abroad, foreign bonds and other nonmonetary assets abroad.

It is to be outlined that in the literature *unofficial dollarization* is often identified with the concept of *partial dollarization* as opposed to the full dollarization. Unofficial dollarization is used to indicate that economic agents consider foreign currency not only as a medium of exchange, but also as a unit of account and a store of value (Calvo & Vegh 1992, p. 4). C. Reinhart, R. Rogoff and M. Savastano define a partially dollarized economy as one where households and firms hold a fraction of their portfolio (inclusive of money balances) in foreign currency assets and/or the private and public sector have foreign currency debts (Reinhart, Rogoff & Savastano 2003, p. 5).

There is some ambiguity in the interpretation of official, semi-official and unofficial dollarization. In fact, such an interpretation of the observed forms of dollarization combines two criteria – the legality (official or unofficial dollarization) and the degree (full or limited, partial dollarization). However, while official (sanctioned by the state) dollarization can be full as well as partial, unofficial dollarization is always partial. Under this form of dollarization the state does not recognize foreign currency as legal tender and refuses to accept it in official payments, thus, limiting its actual use in the economy. This determines its characteristic feature – measuring the extent of such dollarization by means of direct observation is impossible: it always has an estimated character of measurement.

In modern literature the classic distinction of dollarization into official and unofficial forms is often combined with its division into *de jure* and *de facto* dollarization. Dollarization is official, when a nation adopts *de jure*, the currency of a foreign nation to wholly replace its domestic currency (Feige 2002, pp. 2-3). In economy with *de jure dollarization* the foreign currency becomes the authorized means of payment, the store of value and the unit of account. Nevertheless, when firms and individuals voluntarily substitute a foreign currency for the domestic currency as a means of payment and/or prefer to hold foreign rather than domestic currency denominated monetary assets, the dollarization process is described as *de facto dollarization*.

Dollarization is generally classified into three types (De Nicolo, Honohan & Ize 2005, p. 1699; Kokenyne, Ley & Veyrune 2010, p. 4). *Payments dollarization* refers to inability of national money to function as a medium of exchange efficiently enough and provides that residents use foreign currency for

transaction purposes inside the country and deposit operations. If allowed by the monetary authorities, residents can also establish a short-term foreign currency deposit account in the domestic banking system. *Financial dollarization* arises when a significant amount of financial assets or liabilities is denominated in foreign currency. Currency indexation of domestic transactions, when prices of most goods and services are fixed and wages are paid in foreign currency, refers to *real dollarization*.

Expanding this approach, it is logically to present the structure of dollarization, taking into account two criteria: the legality of the use of foreign currency and ability of foreign currency to perform basic functions of money (Table 1). Such interpretation of dollarization is theoretically justified, as each of the following types has its etymology of origin and own functional specificity. With a focus on the functions of money, this approach makes it possible to define the stages of development and specific characteristics of dollarization in the light of substitution of the national currency functions. Such description of dollarization can not be considered complete as it excludes or leaves behind the factor of international transactions. This approach considers only domestic dollarization, namely, the use of foreign currency in claims between residents, excluding existence of external dollarization.

Table 1. Typology of domestic dollarization

De-jure dollarization	De-facto dollarization		
<i>Official dollarization</i>	<i>Payments dollarization</i>	<i>Financial dollarization</i>	<i>Real dollarization</i>
Dollar as legal tender	Dollar as medium of exchange (currency substitution)	Dollar as a store of value (dollarization of assets and liabilities)	Dollar as a measure of prices (indexed prices and wages)
<i>All functions of money</i>	<i>Medium of exchange</i>	<i>Store of value</i>	<i>Unit of account</i>

Source: composed by the authors.

In the literature (Alvarez-Plata & Garcia-Herrero 2008, p. 3; Ize & Levy Yeyati 2005, p. 3; Levy Yeyati 2004, p. 9), *external dollarization* covers financial contracts between residents and non-residents. It is represented by private cross-border loans in foreign currency, holding foreign bonds and funds deposited abroad, bilateral and multilateral lending etc. Methodologically, the separation of domestic and external dollarization makes it clear that dollarization can occur and reproduce at national as well as international level.

The use of the *balanced approach* is considered to be effective as it classifies dollarization into asset dollarization and liability dollarization. *Asset dollarization* focuses on the active part of the balance of economic agents and includes both asset substitution and direct currency substitution. *Liability*

dollarization means that the private and public sectors are lending in foreign currency (Reinhart, Rogoff & Savastano 2003, p. 4). This approach specifies various types of dollarization with different levels of aggregation (financial dollarization, domestic and external dollarization, dollarization of loans and deposits, debt dollarization), and analyze their interconnection. The importance of the balanced approach lies in the fact that along with dollarization, it provides opportunity to analyze a number of other macroeconomic processes.

In theory, the holding of financial foreign currency denominated assets and liabilities by residents (including public sector) refers to *financial dollarization* (Levy Yeyati 2004, p. 7). With focus on the balance effects, it shows that any kind of analysis of the structure of dollarization as well as its causes has to take into account both demand for and supply of foreign currency assets in the economy. However, in practice, financial dollarization is interpreted in a narrower meaning and covers deposit dollarization and loan dollarization. *Deposit dollarization* reflects the share of foreign exchange deposits of residents in the structure of domestic deposits of the banking system. Similarly, *loan dollarization* indicates the share of foreign currency loans to total loans granted to residents by domestic banks.

E. Levy-Yeyati distinguishes *domestic dollarization of deposits* (domestic deposits in foreign currency), *offshore deposits* (deposits of residents abroad) and “*full*” *dollarization of deposits* (total domestic and external foreign currency deposits) (Levy Yeyati 2004, pp. 9; 41-42). A similar distinction can be made for dollarization of liabilities that are classified in external liabilities in foreign currency and domestic dollarized loans. Detailing of the structural characteristics of financial dollarization makes it possible to differentiate its sources and determinants, as well as its effects in a clearer manner. The growth of the level of financial dollarization is closely related to the real dollarization of the economy: foreign exchange denomination of the residents’ contracts, aimed at stabilizing the purchasing power of domestic consumption, directly accelerates the process of deposit dollarization. Deposit dollarization and loan dollarization interact. Given there are prudential restrictions on foreign exchange position of banks, foreign currency deposits serve as a guide to determine the volume of onshore foreign currency loans. For example, it is obvious that deposit dollarization is considered to have a direct impact on the loan dollarization due to the fact that banks seek to transfer the currency risk on their borrowers. However, under the influence of various factors these two processes are developing independently (Neanidis & Savva 2009, p. 1872).

Considering the differences in functional specificity of domestic and external financial dollarization, K. Reinhart, K. Rogoff and M. Savastano emphasize the importance to provide research of dollarization based on distinction between the public and private sectors. In accordance with the characteristics of the ratio of domestic and external dollarization, they classify

dollarization of the economy into four types. The first type is characterized by a high level of domestic and external dollarization; the second type refers to dominance of domestic dollarization of liabilities; the third type covers the dominance of external dollarization with significant amount of private foreign borrowing; the fourth type reflects the dominance of external dollarization of the public sector with a low level of domestic dollarization (Reinhart, Rogoff, & Savastano 2003, p. 9).

There are other criteria for the analytical separation of dollarization. Thus, Kang Shi and Juanyi Xu distinguish the phenomenon of *twin dollarization* which reflects the co-existence of both the liability dollarization and the dollarization of export pricing (Shi & Xu 2010, pp. 1-3). According to the actual causes of dollarization, A. Ize and A. Powell identify four types of it: *macroeconomic hedging dollarization*, which has its origin in investors risk aversion; *market imperfections dollarization*, that is associated with the costs of financial intermediation and determined by lenders' and debtors' efforts to cut down expenditures related to the debt repayment under the conditions of inefficient institutional and regulatory environment; *default dollarization*, which arises due to the problem of coordinating lenders who credit in various currencies; and *moral hazard dollarization*, arising due to insurance of deposits or other guarantees in a dollarized financial system (Ize & Powell 2004, pp. 3-4; 33).

In general, one of the issues of special attention is the study of *the causes of dollarization process*. The traditional explanation of the underlying causes of dollarization of the economy lies within the macroeconomic sphere and generates macro- and microeconomic factors (mainly, portfolio effects). Political and macroeconomic instability inevitably leads to a loss of public confidence in the power of market institutions and domestic currency. In this interpretation the ultimate factor of dollarization is a high and volatile inflation and exchange rate instability. Variability of a monetary valuation of means of payment is not compatible with the efficient service of real and financial transactions. In order to avoid losses of purchasing power, inflation depreciation of assets, instability in the level of the cost of debt repayment, and, ultimately, devaluation and default on financial instruments denominated in domestic currency, households prefer to hold their own savings in the form of foreign currency cash and foreign currency deposits in the domestic banking system. With a view to insure against inflation and currency risk, banks tend to substitute loans in domestic currency for foreign currency loans and/or invest the accumulated funds in foreign currency assets at the domestic or international markets. Even in terms of current monetary stability the foreign currency assets may serve this purpose if economic agents have negative expectations concerning future macroeconomic conditions, in particular, their inflation expectations remain high. In addition, if the country risks (for example, the risk of confiscation and

nationalization) are high enough, economic agents would rather prefer to hold foreign non-monetary assets abroad.

Empirical studies show that the *typical process of dollarization* begins with a period of political and economic instability – the domestic currency is first abandoned in its function as a store of value, then – as a unit of account, and finally – as a medium of exchange (Becker & Komlosy, 2004). Dollarization is moving from *asset substitution* to *currency substitution*. The reason for this initial reaction is that highly variable and uncertain real returns on domestic assets make the national currency most vulnerable as a store of value (Calvo & Vegh, 1992, p. 4). In order to insure savings from depreciation economic agents begin to convert them in foreign currency and accumulate foreign currency financial assets (including deposits). *Asset substitution* takes hold. *Loan substitution* arises when banks seek to avoid currency mismatches and borrowers benefit from low and stable foreign currency interest rates. In consequence, *financial dollarization* occurs. As inflation is gaining momentum, domestic prices are indexed in dollars or other stable currencies (menu effect) – thus, foreign currency begins to function as a unit of account. Finally, to reduce transaction costs, households begin to pay for goods and services in foreign currency, so that it becomes a medium of exchange.

In fact, it is not only macroeconomic instability, but also undeveloped financial system and imperfect institutional model of the economy that can serve as the motive for the dollarization process to develop (including financial dollarization). Therefore, the currency composition of loans and investment portfolio is not always caused by monetary problems. Domestic government loans in foreign currency usually indicate a risky fiscal policy. These conditions independently generate macroeconomic instability and encourage dollarization through devaluation expectations channels¹. Insufficient depth of local capital markets as well as lack of suitable for investment financial assets often induce private subjects to enter the foreign markets. A large share of deposits held in offshore zones in emerging economies reflects the institutional weaknesses of the financial systems of these countries.

One of the correct explanations of dollarization is the “*original sin*” *hypothesis* (Eichengreen & Hausmann 1999, pp. 3-4). It is interpreted as incompleteness of the domestic financial market under which the domestic currency cannot be used to borrow abroad or to borrow in a long-term prospect, even domestically. Indeed, in most emerging economies the financial market is so weak that local lenders are not able to attract loans for a long period of time. In the absence of effective mechanisms of transformation of domestic savings into investment, a considerable amount of the financial resources can

¹ The Mexican crisis in 1994, the Russian default in 1998, and the collapse of the Argentinian currency board in 2001 are marked with a common point – dollarization of domestic public debt on the eve of the collapse of exchange rates.

be attracted only from abroad. As a result, domestic investment projects have either a currency mismatch (external sources of funding with domestic sources of income) or a maturity mismatch (long-term projects are financed by short-term loans). The problem is that the country with debt in foreign currency is not able to hedge against the risks, as there is no counterparty to undertake them. Its inevitable consequence is the extension of a high-risk liability dollarization (even in the absence of relevant return the economic agents issue debt in foreign currency). On the one hand, the failure of the financial system to hedge risks keeps it at a low stage of development, while, on the other hand, it stimulates the financial dollarization. It can be stated that the development of external dollarization (in the form of increasing amount of foreign assets and liabilities) reflects the search for more reliable assets and more functionally efficient financial systems. In addition, the low level of development of the financial system may be indicative feature of the overall macroeconomic instability and socio-political conflicts in the country. This fact tends to explain why the poorest economies among the developing countries are the leaders in offshorization.

However, the examined factors fail to fully explain the resistance of the phenomenon of dollarization due to the fact that they leave the systemic effects of a globalized economy behind. Expansion of the international integration and openness of the economy (both trade and financial) directly leads to a higher level of dollarization of the country with its domestic currency being inefficient to be used in international transactions. In the context of globalization it is reasonable to hold foreign financial assets (hence, to dollarize the economy). It can be grounded by a number of *effects*, namely:

- *Elimination of the currency risk*: under the conditions of instability of international capital markets and volatility of capital flows (the factors that often determine the deterioration of the balance of payments of the host country) dollarization serves as means of leveling the currency risk.
- *The guarantee on the execution of the international transactions*: dollarization provides reliability of the currency of payment, that is stability of the purchasing power of deposit money in a short-term and medium-term perspective.
- *Limitation of the liquidity and solvency risks*: holding liquid assets at the deposit accounts abroad limits a liquidity risk.
- *Minimization of transaction costs*: holding foreign currency deposits allows firms, involved in international trade, to simplify international payments. A diversified foreign currency structure of deposit accounts can reduce the costs associated with the currency conversion.

These effects indicate the formation of new characteristics of dollarization process. On the one hand, under conditions of globalization dollarization is an optimal strategy of economic agents in response to the growth of national

economy dependence on the global economic system. On the other hand, it serves as an important factor in improving the efficiency of international trade and financial ties that simplifies and encourages economic integration of the country with the rest of the world and strengthens interconnection with the global financial system. Being the alternative source of capital allocation, dollarization replaces the cross-border flow of capital with «internal flight» to the foreign currency and non-monetary foreign currency assets. Reducing financial constraints enhances the domestic credit expansion, stimulates the development of domestic market of a long-term capital and reintermediation (Snezhko 2009, pp. 454-467). A potential consequence of it is strengthening and diversification of the country's interactions with the global economy. Having regard to the outlined effects, it is logical to assume that the lack of dollarization under certain conditions can lead to substantial economic costs, such as decrease of the competitiveness of firms/countries or reduction of the facilities for hedging. It also means that modern dollarization is, at least partially, a natural consequence of the international economic (real and financial) integration.

Global factors may independently and significantly affect propensity to use foreign currency in capital transactions and, thus, influence the level of dollarization of the country. It is appropriate to outline the separate issue – the formation of specific channels, which are considered as channels of impact of globalization on financial dollarization. One of them is the channel of capital inflows that shows how the increasing amount of capital inflows is being absorbed by monetary reserves, and, thus, fosters dollarization. In turn, foreign exchange reserves have direct impact on the credit rating of the country, stimulating further capital inflows. Thereby, the level of inflation tends to have more variations in comparison with the exchange rate fluctuations, while the value of foreign currency assets becomes more stable. Under these conditions both creditors and debtors give preference to foreign currency assets.

The channel of foreign expansion shows how entry of foreign banks in domestic market of a dollarized economy is associated with the displacement of national currency from the sphere of financial transactions. Expansion of domestic credit in foreign currency is profitable for foreign banks as it enables to eliminate currency imbalances and risks as well as simplifies the system of management. Globalization of banking sets strong preconditions for intensifying financial dollarization at global level.

The channel of international investment reflects the situation when the national financial system is not developed enough to generate high-quality assets. In this case, dollarization provides a demand for foreign assets and optimization of the profitable and risk structure of the investment portfolio. It creates a basis for global comparability of asset values as the problem of exchange rate fluctuations is being eliminated. Therefore, under the certain

institutional conditions exchange rate policy of the central bank can become the subject of manipulation by economic agents who optimize the value of cross-border portfolio assets in the context of how the changes will affect the value of the current export of capital.

The channel of spreads and ratings reflects the expansion of global liquidity on dollarization. The growth of global money supply lowers interest rates at the international financial markets, increasing risk disposition and encouraging investment in risky assets. The decrease in spreads opens an access to global financial resources and generates dollarization.

The development of monetary processes in Ukraine demonstrated that the positive effects of globalization on the economy weakened or do not even exist, and negative effects enhanced due to the degree of financial and trade openness. Thus, besides the fact that modern globalization reduces inflation, enhancing the role of price stability policy with the aim of creating the framework for a long-term growth, in case of Ukraine the impact of globalization on disinflation is virtually absent, or substantially limited due to a significant role of the exchange rate in the domestic pricing.

Monetary policy is conducted under conditions of dependence on commodity exports and high inflation. Consumption overheating is caused by capital inflows and significant external borrowing. Sustainable exchange rate is a weak point at the intersection of monetary policy and financial globalization. A significant amount of capital inflow towards receiving higher income relied on easy access to financing and reinsurance of the risks. Growing global markets created favorable grounds for the demand for new capital, thus causing significant borrowings under relatively low interest rates in domestic currency that were implicitly guaranteed by sustainable exchange rate. Capital inflows, foreign borrowing, as well as new export opportunities are more based on global factors rather than on domestic macroeconomic conditions.

The lack of tight monetary policy has demonstrated how global liquidity expansion increases the vulnerability of the domestic financial sector despite the fact that the opportunities for restriction policy significantly narrowed due to capital inflows and foreign borrowing, acting as exogenous factors of internal expansion of the aggregate demand.

During the global economic crisis the behavior of the National Bank demonstrated, on the one hand, a limited capacity to prevent the deployment of a crisis scenario which turned out to be actually inevitable, considering the configuration of the connection between global and national economies. It was enough to put under change any of the components of global stability, so as to undermine the economy of Ukraine, being overloaded with dependence on commodity export, external private debt and dollarization. Considering the fall in prices on primary resources, hryvnia devaluation is an equilibrium process, but its scope does not clearly reflect the objective conditions and, given

the level of dollarization, destroys the financial sector and domestic consumer market.

On the other hand, in terms of depreciation the announcement of the transition to a floating regime is questionable and unjustified for the reason that the floating cannot take place in case the market participants (economic agents) “play” against the national currency. In fact, the National Bank failed to comply with the ideology of floating rate regime, and the borrowings from the IMF were needed primarily to form foreign exchange reserves buffers for banks to finance their external obligations.

The National Bank has chosen an inflation combination of softening crisis. Rather than limit the fall of the hryvnia and stop refinancing (both act as anti-inflationary tools), the central bank allowed hryvnia to fall, and the deteriorating financial condition of banks was compensated with refinancing (both are inflationary tools).

In a long run perspective, monetary policy of Ukraine should switch to inflation targeting, however, it is to be adjusted to reviewing basic structure of the economy. The basis of this review is to be based on the following elements:

- Priority of price stability policy within the rate of inflation, according to the Maastricht criteria, must involve constant monitoring of indicators, namely, domestic credit, capitalization of financial markets, capital inflows, asset prices (particularly, real estate).
- The level of dollarization of the economy is to be reduced. The monetary authorities should focus on the level of dollarization under which the exchange rate or other macropolicy instruments will not change the welfare condition of the economic agents in a way that it gave rise to real macroeconomic consequences in consumption, savings and investment.
- Monitoring of the global macro-financial processes with identification of the terms of trade shocks, based on the lag between changes in the state of the global liquidity and situation in the markets of primary resources. Monetary variables should be identified as such having a direct impact on the expansion of capital flows, borrowing and behavior of spreads and ratings. Without such a consideration the dynamics of domestic credit is always perceived as being linked to the needs of the economy in money, regardless the fact what factors are in the basis – nominal or real;
- High elasticity of response of primary resources prices to changes in global demand should be quickly taken into account in terms of domestic interest policy
- Transformation of the institutional status of the National Bank – European integration factor – requires focus on the requirements of the EU-ECB to change the mandate of the NBU.

One of the possible strategies to be implemented is the «managed floating plus» regime, which was developed by Morris Goldstein. The managed floating

plus regime is a regime, which entails three vectors: the inflation targeting framework, the floating exchange rate regime, and “plus” which determines the measures to overcome the currency mismatching problem. The regime puts emphasis on the inflation targeting goal, aiming at stabilizing the prices and the economy, letting the exchange rate to float free and intervening only to fine tune the overreactions of the exchange rate, and never against the fundamentals.

Successful implementation of IT regime depends on many factors, namely: the independence of the national bank; the way the central bank is implementing the policy; whether it uses a monetary rule or other mechanism; the way the central bank communicates the target to the public; whether it is able to convince the public about its ability to combat inflation. In case of Ukraine, the National Bank, in order to implement the policy of inflation targeting, has to overcome many obstacles: the data collecting mechanism; the monopolistic structure of many sectors (especially, energy and electricity sectors); the poorly functioning monetary transmission mechanism; the undeveloped domestic financial market.

The introduction of inflation targeting promotes decrease of inflation, strengthening central bank real independence, transparency and credibility of monetary policy. In 2016, the NBU is geared toward meeting its 2016 year-end inflation target of 12%. In pursuit of this objective, the NBU will implement its monetary policy, proceeding from the need to achieve the following: 1) preserve the intrinsic value of the hryvnia by keeping interest rates relatively high (the policy of “expensive money”); 2) smooth excessive exchange rate fluctuations through foreign exchange interventions, which, however, will not counteract steady exchange rate appreciation/depreciation trends; 3) direct monetary policy toward achieving price stability, while eliminating the possibility for funds issued by the NBU to be used to finance fiscal and quasi-fiscal needs.

Prudent budget policy is crucial for achieving inflation targets: meeting the budget deficit targets and raising social spending as mandated by the Law of Ukraine On the State Budget of Ukraine for 2016. Domestic consumer price growth is expected to be driven by adjustments of administered prices to cost-recovery/market levels. Raising administered prices as scheduled is essential for achieving the inflation target.

In 2017–2019, headline inflation is expected to moderate to 8% +/-2% by the end of 2017 and to 6% +/-2% by the end of 2018, before edging down to 5% +/-1% by the end of 2019.

Going forward, the NBU will seek to attain the objective of maintaining inflation at a 5% mid-range target.

Currently, given a steady decline in inflationary pressure amid a further alleviation of risks to price stability, the NBU continues its monetary easing

policy. In Q3 2016, the regulator cut its key policy rate twice. As of 28 October 2016, it was set at 14.0%. The key policy rate cuts and the buildup of market expectations of further policy easing facilitated a decrease in market interest rates. Accompanied by a gradual revival of economic activity and an increase in households' spending on durable goods, it fostered an increase in demand for loans. However, lending activity remained weak.

The risks for further inflation developments are tilted to the upside this year and are symmetrical on the longer forecast horizon. However, headline inflation will remain within the target band of 12% +/- 3 ppts. Deviations from the mid-range value (12%) may be caused by short-term supply shocks. Due to the suspension of state price regulation for select socially sensitive products, administered prices may shoot beyond estimations. A faster and larger in magnitude upturn in raw food prices compared with the baseline scenario pose an upside risk for the inflation forecast in the next few years. This may be mitigated by either weaker consumer demand or more favorable external conditions. In the longer term, external support of reforms, lack of adverse shocks in external markets, de-escalation of hostilities in the east of Ukraine and, consequently, further improvements in inflation expectations will be important preconditions for reducing inflation to the set targets. Otherwise, the risk premium will increase, as well as currency depreciation and additional inflation pressures. Hence, ensuring a return of inflation to its targeted level will require tighter monetary policy than in the baseline scenario. Alternatively, a rapid rise in world commodity prices, stronger foreign demand for Ukrainian goods, or faster reforms may become positive shock. Under such conditions, growing economic activity will be accompanied by strengthening of the hryvnia thanks to higher export proceeds and capital inflows under the financial account. This may lead to strengthening demand pressure on prices, but effects from a stronger hryvnia will be more significant. Under this scenario, the NBU will be able to lower its key policy rate faster than in the baseline scenario, thus providing additional impetus to the recovery of economic activity. A recent government initiative to raise the minimum wage more than twofold from the current level gives an important uncertainty to the forecast.

As of October 2016, the state budget recorded a deficit of UAH 20.5 billion as expenditures rose significantly, while revenues decreased. The decrease in revenues was attributed to slower growth in tax revenues and lower non-tax proceeds, as compared with the previous year. This year, monthly performance of tax revenues is strongly affected by the statistical effect caused by changes in the corporate income tax administration and a rather uneven repayment of VAT refunds. In the meantime, the state budget expenditures expectedly grew, primarily due to scheduled external debt service payments. In addition, the surplus of local budgets narrowed to almost zero amid typical for the period acceleration in expenditures. As a result, the consolidated budget showed

a deficit in September.

The current account deficit widened to USD 875 million, reflecting scheduled interest payments on restructured Eurobonds and a wide merchandise trade deficit. Unlike in previous months, the financial account net inflows (USD 1.3 billion) were backed primarily by the public sector. Higher net private sector debt outflows were offset by a larger decrease in FX cash outside banks and an increase in FDIs to the real sector. Thanks to the overall balance of payments surplus (USD 474 million) and a third tranche under the IMF EFF, gross international reserves rose to USD 15.6 billion (or 3.7 months of future imports) as of end-September.

In October 2016, the supply of foreign currency exceeded the demand for it in the FX market. This reflected improved public sentiments since mid-September on the back of the IMF decision to disburse the tranche, as well as signs that global commodity prices were stabilizing. The NBU purchased foreign currency to replenish international reserves without counteracting the appreciation trend. Given eased depreciation pressure on the hryvnia in the second half of September, domestic currency deposits recovered growth that month. The stock of domestic currency loans also increased. A further decline in risks to price stability enabled the NBU to continue easing monetary policy. Indeed, effective from 28 October 2016, the key policy rate was cut to 14.0%.

It is to be underlined that under modern globalization conditions dollarization has transformed from a destructive phenomenon to an objective process that has equilibrium levels. Moreover, the ensuing stabilisation does not always lead to a lessening of dollarization – that is hysteresis effect takes place. There are two factors usually considered to be triggers of the hysteresis effect. The first of these are network externalities which exist if economic agents are more willing to use foreign currency. In this case, if dollarization has reached a high level in the course of depreciation of the national currency, it will not fall back during stabilisation because use of the foreign currency has already taken root in the national economy and is no longer associated with additional costs. The second reason for the occurrence of hysteresis is depreciation expectations. In particular, the expected depreciation of the national currency makes foreign currency more attractive for savings even if the current exchange rate is fairly stable. Currency crises and hyperinflation may play a special role in shaping depreciation expectations.

To estimate the long-run dollarization equilibrium we use the following specification:

$$\log\left(\frac{1-d_t}{d_t}\right) = \beta_0 + \beta_1 (e_t - ir_t) + \beta_2 d_{t-1} + \beta_3 d_{t-1}^2 + \beta_4 (emax_t - ir_t) + e_t \quad (1)$$

where d_t refers to deposit dollarization, e_t is annualised quarterly depreciation of the national currency against the USD, $emax_t$ variable reflects depreciation expectations and is defined as the maximum exchange rate depreciation over

the past five years. Exchange rate depreciation rates are adjusted for the difference in yields on national-currency versus dollar deposits (ir_t).

As long as depreciation of the exchange rate and interest rates remain unchanged, dollarization will converge towards the long-run steady state d^* that is a solution to the above equation (i.e. such that $d_t = d_{t-1}$). Typically, the nonlinear form of a dollarization model will produce two stable equilibria (Figure 1). The solid line reflects the relationship of the current and previous levels of dollarization (at given changes in the exchange rate and interest rate).

Points of intersection of these lines are dollarization equilibria. Extreme equilibrium points are stable equilibria; the intermediate equilibrium is unstable. If dollarization at time t is less than the intermediate equilibrium point, dollarization will shift towards the lower extreme equilibrium in the next period, $t+1$. If dollarization at time t exceeds the intermediate equilibrium point, dollarization will shift towards the higher extreme equilibrium in the next period, $t+1$.

Table 2 demonstrates the evaluation results of a long-term equilibrium model.

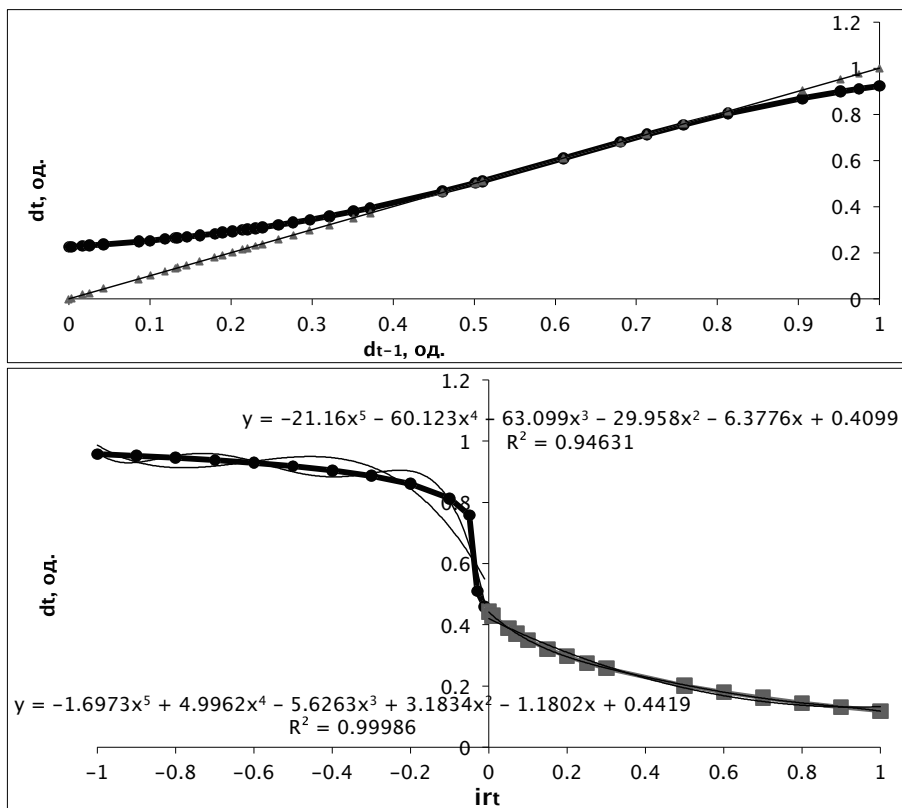
Table 2. Evaluation results of a long-term equilibrium model in Ukraine

	α_0	α_1	α_2	α_3	α_4	R^2	F	F_{sp}
Ukraine	1,3140	-0,8120	-1,2367	-2,4700	-0,1161	0,9194	111,2433	2,6123
<i>error</i>	0,7102	0,0798	3,2789	3,6778	0,0751			

Source: author's estimations.

Thus, the long-term equilibrium level of dollarization depends on changes in exchange rates, interest rates, dollarization levels and hysteresis effect. Practical results show that in case of Ukraine positive differentials irt lead to a low equilibrium level of dollarization – 32% as of 2015 (in general, the equilibrium level for the Ukrainian economy is 30-40%). Negative differentials irt lead to high levels of dollarization, however, in the case of Ukraine they are absent – such equilibrium levels can only be approximated. From the results of the assessment the model suggests that, first in 2008, and then in 2013, Ukraine's economy deviates from the equilibrium level of dollarization, to the level of 36% and 43%, respectively.

Figure 1. Empirical estimation of a long-term equilibrium model in Ukraine



Source: own preparation.

In the light of the considered effects it can be asserted that *modern dollarization* is largely an *objective process*, caused by the development of globalization processes, when, on the one hand, interconnectedness of countries is increasing, and, on the other hand, – the traditional economy of production and exchange is further transformed into financial economy, with its key elements being assets and debts, capital flows and nonequilibrium payment positions of economic agents, institutional sectors, countries or even regions of the world. It should be expected that any benefits from the preference of several currencies as the key ones actually create structural preconditions of the development of dollarization of the national economies. Attempts to eliminate dollarization are pointless, as it can only be limited to a certain extent, namely, to the level that corresponds with the openness of the economy.

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Dylemat dolaryzacji gospodarki ukraińskiej w warunkach globalizacji – zagadnienia analityczne

Streszczenie

Autor przedstawia wszechstronną analizę cech transformacji i dolaryzacji w kontekście globalizacji. Omówiono teoretyczne i metodologiczne podstawy analizy ekonomicznego charakteru dolaryzacji i zbadano ewolucję podejść koncepcyjnych do traktowania dolaryzacji oraz usystematyzowano podstawowe podejścia naukowe do typologii dolaryzacji z punktu widzenia różnych kryteriów klasyfikacji, z podkreśleniem rozróżnienia między jej formami i typami. W tezie tej rozbudowano hipotezę nowoczesnej dolaryzacji jako obiektywnego procesu ewolucyjnego w związku z rozwojem globalizacji. Przeprowadzono analizę ekonometryczną istnienia poziomów równowagi dolaryzacji finansowej na Ukrainie na podstawie modelowania efektów histerezy z zastosowaniem wieloczynnikowego modelu dynamiki poziomów długookresowej równowagi dolaryzacji depozytów.

Słowa kluczowe: dolaryzacja, zastąpienie waluty, polityka pieniężna, sterowanie inflacją, Ukraina, poziom długookresowej równowagi dolaryzacji.

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