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ВЕСТНИК

НАЦИОНАЛЬНОЙ АКАДЕМИИ НАУК
РЕСПУБЛИКИ КАЗАХСТАН

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NAS RK is pleased to announce that Bulletin of NAS RK scientific journal has been accepted for indexing in the Emerging Sources Citation Index, a new edition of Web of Science. Content in this index is under consideration by Clarivate Analytics to be accepted in the Science Citation Index Expanded, the Social Sciences Citation Index, and the Arts & Humanities Citation Index. The quality and depth of content Web of Science offers to researchers, authors, publishers, and institutions sets it apart from other research databases. The inclusion of Bulletin of NAS RK in the Emerging Sources Citation Index demonstrates our dedication to providing the most relevant and influential multidiscipline content to our community.

Қазақстан Республикасы Ұлттық ғылым академиясы "ҚР ҰҒА Хабаршысы" ғылыми журналының Web of Science-тің жаңаланған нұсқасы Emerging Sources Citation Index-те индекстелуге қабылданғанын хабарлайды. Бұл индекстелу барысында Clarivate Analytics компаниясы журналды одан әрі the Science Citation Index Expanded, the Social Sciences Citation Index және the Arts & Humanities Citation Index-ке қабылдау мәселесін қарастыруда. Web of Science зерттеушілер, авторлар, баспашылар мен мекемелерге контент тереңдігі мен сапасын ұсынады. ҚР ҰҒА Хабаршысының Emerging Sources Citation Index-ке енуі біздің қоғамдастық үшін ең өзекті және беделді мультидисциплинарлы контентке адалдығымызды білдіреді.

НАН РК сообщает, что научный журнал «Вестник НАН РК» был принят для индексирования в Emerging Sources Citation Index, обновленной версии Web of Science. Содержание в этом индексировании находится в стадии рассмотрения компанией Clarivate Analytics для дальнейшего принятия журнала в the Science Citation Index Expanded, the Social Sciences Citation Index и the Arts & Humanities Citation Index. Web of Science предлагает качество и глубину контента для исследователей, авторов, издателей и учреждений. Включение Вестника НАН РК в Emerging Sources Citation Index демонстрирует нашу приверженность к наиболее актуальному и влиятельному мультидисциплинарному контенту для нашего сообщества.

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**TRENDS FOR UKRAINE'S CURRENCY
MARKET DEVELOPMENT**

Abstract. At the current stage of the country's economic development, its foreign exchange market is determined by the complicated economic relations associated with foreign currency buying and selling for servicing transactions in the sphere of trade and business. Growing openness of the national economy and Ukraine's integration into the world economic system are among the reasons for the increased influence of external and internal factors in the foreign exchange market, increased volatility of the national currency exchange rate and pose high risk on the transactions in the foreign exchange market. This, in turn, diminishes the attractiveness of the economy for doing business. Combining the national economy with the world market through the mechanism of monetary relations, the exchange rate of the national currency is tightly linked to all economic processes. On the one hand, it is affected by a complex set of endogenous and exogenous macroeconomic factors; on the other hand, it affects the country's financial situation. National currency depends on the competitiveness of domestic production in international markets, volume and direction of foreign economic relations, and cash flows. In this context, the hryvnia exchange rate is seen as an important indicator of the country's economic development, an effective monetary policy instrument of the Central Bank, and a key characteristic of the currency market. A strong need to improve the efficiency of the currency market in Ukraine encouraged the choice of the research topic.

The purpose of the study is to determine the peculiarities of the situation on the national currency market and outline the trends for changes of the main indicators of its activity. Particular attention is paid to the analysis of tendencies of the hryvnia exchange rate fluctuation against the US dollar and euro, as well as the factors that cause volatility of the Ukrainian currency market.

The study identifies the peculiarities of Ukraine's currency market during 2015-2019. Based on the analysis of the dynamics of the hryvnia exchange rate, the main stages of the exchange rate change have been pointed out and the determining factors of the change of the hryvnia exchange rate against the US dollar and euro have been highlighted at each stage. The situation on the national currency market and the main indicators, which testify to the effectiveness of its functioning, have been evaluated. The dynamics of Ukraine's foreign exchange reserves, currency interventions of the National Bank of Ukraine and gross external debt have been investigated. Methods of correlation analysis have been used to identify exchange rate factors. Synchronization of dynamics of individual macroeconomic indicators and hryvnia exchange rates against the US dollar and euro during the period of 2015 and 11 months of 2019 has been explored. According to the data obtained, assumptions about the future trends of the national currency market have been made.

Key words: currency market, foreign exchange market, exchange rate, interventions, exchange rate policy, international reserves, the National Bank of Ukraine.

Introduction. The problems of changing the powers of certain control and regulation bodies in the financial market are extremely relevant in the context of modern globalization processes and the manifestations of crisis phenomena. [1] The current stage of the world economy development is characterized by a high level of internationalization and globalization, which in turn creates prerequisites for a significant impact of both endogenous and exogenous factors on the national economy and the national currency market. Particularly striking is the impact in times of crisis in the economy: it is at this stage of development that the exchange rate sharply responds to the manifestation of instability in any sector of the national economy and the economy of countries - trading partners.

Under the conditions of market transformations and growing influence of the world economy on the currency market of Ukraine, the importance of the hryvnia exchange rate as an indicator of the economic development of the country, an effective instrument of the monetary policy implementation by the Central Bank and a key characteristic of the state of the currency market is increasing. To achieve economic and financial stabilization, first of all, it is necessary, to ensure stability of the national currency. This task is entrusted to the Central Bank, its role in the foreign exchange market is crucial. The necessity of a long-term monetary policy of monetary authorities as a stabilizing factor is emphasized in the research by O.I.Bereslavskaya. [2, p.9]. According to the author, this will allow Ukraine's currency market to react to the changes in the external environment less painfully.

In today's global environment, the emerging markets are considered to be the most sensitive to endogenous and exogenous factors. This is because, on the one hand, they are becoming more open to the world currency market and, at the same time, do not have an effective mechanism to mitigate the negative impact of factors. Scientists O.V.Dzublyuk and O.M.Vladimir note that "in the conditions of comprehensive globalization and internationalization of social and reproductive processes, the development of economic ties is impossible without the functioning of a well-established system of monetary relations, which is one of the main factors of market transformation of the economy" [3, p.9]. That is why it is necessary to constantly monitor the currency market and analyze the dynamics of its indicators to prevent crises in the currency market.

Methods. The methodological basis of the study includes general research methods of economic science. Statistical and graphical analysis methods have been used for empirical studies of the currency market of Ukraine. In addition, general research methods such as generalization and comparison have also been used. The information base consists of the official materials of the State Statistics Service of Ukraine, analytical information of the National Bank of Ukraine, as well as publications of scholars on currency market functioning.

Analysis of recent researches and publications. Such scientists as O. Bereslavska, F. Zhuravka, O. Dzublyuk, O. Vladimir, N. Zhmurko and others have devoted their research to the theoretical and practical aspects of currency market functioning. Despite the considerable amount of research concerning the problems of foreign exchange market functioning, the issue of establishing instruments for ensuring the stability of currency market in Ukraine remains unresolved.

Statement of the problem. The purpose of the study is to determine the peculiarities of the situation on the national currency market and outline the trends for changes of the main indicators of its activity. Particular attention is paid to the analysis of tendencies of the hryvnia exchange rate fluctuation against the US dollar and euro, as well as the factors that cause volatility of the Ukrainian currency market.

Main results of the study. The modern currency market is a collection of subordinated, interrelated system of market segments of international, regional and national economies, institutional environment of economic relations related to conducting foreign exchange transactions, use of currency values and currency derivatives [4, p. 41]. The processes occurring in the national currency market are shaped by many economic external and internal factors. Today, there is a steady tendency to increase international capital flows, which is explained by the increase in the international exchange of goods, services and capital, joint entrepreneurship and scientific and technical cooperation, the development of world tourism. Under such circumstances, interest in the formation of the exchange rate and its dynamics increases. Therefore, the exchange rate can be considered to be an indicator that reflects the state of the country's economy.

One of the main tasks of the National Bank of Ukraine in regulating the foreign exchange market is to establish the equilibrium exchange rate of the hryvnia. There are different definitions of the equilibrium. The equilibrium exchange rate is sometimes defined as the rate set on the foreign exchange market under the influence of supply and demand without government intervention. Another approach to defining a fundamental equilibrium is the one that establishes external and internal equilibria in the country. Internal equilibrium can be achieved if there is full employment and low inflation in the country, a constant level of balance of the capital movement account is needed to achieve external equilibrium.

Any country is interested in the stability of its national currency, aiming for its gradual strengthening. National economic policy bodies rely on the stability of the national currency. To do it, you need to constantly monitor the dynamics of the currency exchange rate in relation to the macroeconomic indicators, which are fundamental factors of exchange rate formation.

In the first stage of the national currency market study, the dynamics of the hryvnia average exchange rate of against the US dollar and euro in foreign currency cash transactions from January 2016 to November 2019 has been analyzed (figure 1).

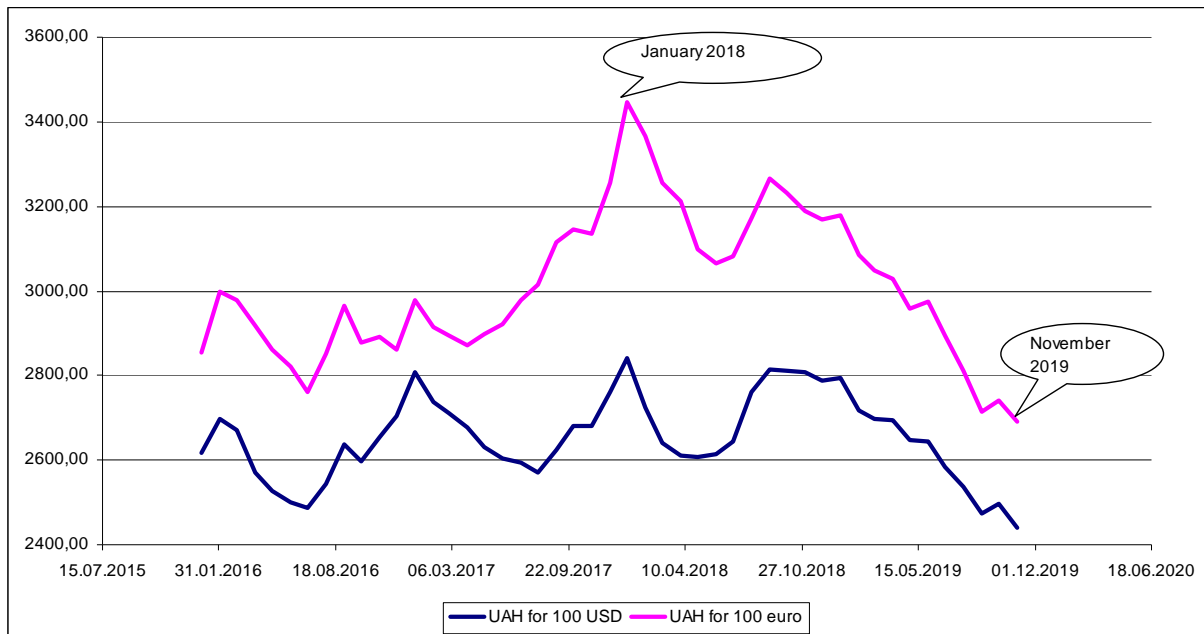


Figure 1 – Dynamics of the hryvnia exchange rate against the US dollar and the euro during January 2016 - November 2019 [5]

Graphical analysis of the dynamics of the hryvnia exchange rate against the US dollar in recent years (see figure 1) makes it possible to identify separate periods characterized by different rates of change in exchange rate fluctuations.

The first period is from January 2016 to January 2017. During this period, the hryvnia has lost 7.2% of its value against the US dollar and 4.3% against the euro. At this stage, the relative stability of the hryvnia exchange rate is maintained through interventions mainly in the form of currency auctions. The prudent monetary intervention policy allowed to reduce the average monthly volatility of the hryvnia exchange rate against the US dollar from 28.8% in 2015 to 6.2% in 2016 and to continue the further movement towards a liberal model of currency regulation. At the same time, international reserves managed to increase by 16.8% or by USD 2.2 billion. At the end of 2016, they totaled \$ 15.5 billion. Net purchases of currency by the National Bank through foreign exchange interventions in the interbank market totaled \$ 1.6 billion.

The main sources of replenishment of international reserves in 2016 were net purchases by the National Bank of \$ 1.3 billion during the foreign exchange interventions against the backdrop of the favorable situation on the foreign exchange market, as well as the receipt of financing from the International Monetary Fund worth about \$ 1 billion. [6].

This period was also characterized by “monetary targeting” and floating exchange rate, the main condition of which was to stabilize the financial system [7, p.151].

The second period, from January 2017 to January 2018, is characterized by a consistent depreciation of the national currency compared to the previous period. During 2017, exchange rate fluctuations were observed, but the hryvnia devalued by only 3.2% against the US dollar. The hryvnia devaluation against the euro was more significant, i.e. the hryvnia lost 12%. The main reasons were the cost of servicing the external debt and the negative foreign trade balance. At the end of 2017, foreign exchange reserves amounted to \$ 18.81 billion and increased by 21.8% during the year. Typical for this period is the introduction of “inflation targeting” and a floating exchange rate to ensure economic growth.

In general, the depreciation of the national currency is common for the first and second periods. The main devaluation factors were a decrease in foreign exchange earnings and, as a consequence, a shortage of currency in the foreign exchange market and an increase in the cost of servicing public debt.

Overall, the hryvnia exchange rate during 2016-2017 depreciated by 10.44% against the US dollar and by 16.3% against the euro. It is worth noting that the graphical analysis of figure 1 generally confirms the synchronicity of changes in UAH / USD and UAH / EUR exchange rates.

The third period is from February 2018 to November 2019. At this stage, a new trend has begun: the dynamics of the hryvnia exchange rate against the US dollar is marked by the gradual strengthening of the national currency. Thus, the hryvnia went up by 14.2% against the US dollar, and by 22.0% against the euro. According to the National Bank of Ukraine, in 2018 the volatility of the hryvnia exchange rate decreased and was in the range of 2 – 10%. Exchange rate policy at this time is characterized by measures aimed at improving the market and transparency of the hryvnia exchange rate. For this purpose, priority was given to the forms of interventions, for which the National Bank does not offer, but accepts the price offered by the other participants of the foreign exchange market.

The development of the foreign exchange market was facilitated, in particular, by the abolition of a number of foreign exchange restrictions and the gradual habituation of all market participants to operate under floating exchange rate conditions. Net currency purchases in 2018 amounted to nearly \$ 1.4 billion. As of 2018, the population has sold to banks \$ 1.5 billion more than bought. This allowed the National Bank of Ukraine to buy currency into reserves without affecting the direction of the hryvnia exchange rate, which in 2018 strengthened by 1.4%. The trend of strengthening the hryvnia exchange rate in 2019 continued.

Private money transfers to Ukraine play a significant role in the national currency market. Taking into account the fact that some Ukrainians are abroad and receive wages outside our country, these remittances can also be considered to be a part of investment income to Ukraine. In recent years, there has been an increase in the volume of private money transfers to Ukraine [8, p. 9]. As a result of 2018, 47% of private money transfers to Ukraine came through informal sources, the rest through correspondent bank accounts and international payment systems. Total revenue over 2015-2018 increased by 51.66% from \$ 1,868 million to \$ 2833 million. The trend of increasing private transfers in 2019 acted as a revaluation factor of the hryvnia.

To evaluate the situation on the national currency market, its main characteristics are worth considering. They include foreign exchange reserves; foreign exchange interventions and gross external debt (see table 1).

Table 1 – International Reserves and Dynamics of the National Bank of Ukraine Interventions in 2016-2019

Indicator	2016	2017	2018	2019 (11 months)
Intervention balance of the National Bank of Ukraine, billion USD	1,6	1,3	1,4	5,9
International Reserves of the National Bank of Ukraine, billion USD	15,5	18,8	20,8	21,9
Gross external debt, million USD	45604,6	48989,4	50462,5	48651,5
Gross external debt change rates, %	5,0	7,4	3,0	-3,6

During 2016 – 2019 (11 months), the balance of foreign exchange interventions was positive. The National Bank of Ukraine continues to buy surpluses in the foreign exchange market. The surplus supply of foreign currency in the foreign exchange market results in an increase in the international reserves of the National Bank of Ukraine and a revaluation of the hryvnia. It should be noted that the National Bank of Ukraine does not counter the fundamental trends in the foreign exchange market, which are due to market factors. That is, currency interventions do not change the direction of the exchange rate, but affect only the amplitude and speed of its change [9, p.7].

Along with the positive balance of the National Bank of Ukraine interventions, there is an increase in the volume of international reserves: during 2016 – 2019 (11 months) the growth was 41.3%. The increase in the volume of gold and foreign exchange reserves was partly influenced by the fact that the volume of currency sales to the population on the cash market exceeds the volume of purchases. Thus, during 2016 – 11 months of 2019, the amount of foreign currency purchased from the population exceeded the volume of foreign currency purchase by 20.6%.

To identify exchange rate factors, we analyze the relationship between the dynamics of individual macroeconomic indicators and the hryvnia exchange rates for 2015 – 2019 (Y_1 stands for UAH / USD, Y_2 stands for UAH / EUR) using monthly correlation methods. Fundamental factors are represented by the following macroeconomic indicators: x_1 stands for the balance of exports and imports of goods and services, USD million; x_2 – money supply (M3 unit), UAH million; x_3 – currency sales in the interbank foreign exchange market, USD million in equivalent; x_4 – purchase of foreign currency in cash, USD million in equivalent; x_5 – budget deficit, % of GDP; x_6 – external debt (direct and guaranteed), billion USD; x_7 – gold and foreign exchange reserves of the National Bank of Ukraine, million USD; x_8 – consumer price index, %.

The correlation between these factors and the hryvnia exchange rates is presented in the correlation matrix (table 2).

Table 2 – Correlation between fundamental factors and exchange rates

	Y_1	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	Y_2
Y_1	1	0,21	0,69	-0,21	0,37	-0,05	0,61	0,61	-0,12	0,89
x_1		1	-0,26	-0,47	-0,52	-0,19	0,31	0,04	0,25	0,37
x_2			1	0,04	0,90	-0,05	0,71	0,79	0,49	-0,18
x_3				1	0,39	-0,14	0,14	0,20	-0,10	-0,22
x_4					1	0,23	0,77	0,85	-0,30	0,46
x_5						1	0,19	0,08	-0,02	0,01
x_6							1	0,94	-0,39	0,63
x_7								1	-0,43	0,60
x_8									1	-0,15
Y_2										1

Source: calculated according to the National Bank of Ukraine

Non-diagonal elements of a matrix are linear correlation coefficient of r_{ik} that evaluate not the causal effect but the correlation between the correlating indicators. Since the information base of this study is presented in a dynamic series, the correlation coefficients reflect the synchrony of changes in fundamental factors and exchange rates, which is caused by the action of common reasons for their variation. The critical value of the correlation indicator with a probability of 0.95 is $r_{1-0,05}(59) = 0,26$.

The exchange rates of UAH / USD and UAH / EUR change in dynamics almost synchronously – the correlation coefficient between them is 0.89. Common to both exchange rates is the materiality of such a factor as external debt (direct and guaranteed) and the foreign exchange reserves of the National Bank of Ukraine. The insignificance of the link is revealed by the amount of currency sales in the interbank foreign exchange market, USD million in equivalent and consolidated budget deficit, % of GDP. With other fundamental factors, the coupling density of each pair of exchange ratios differs. As correlation coefficients indicate, the correlation between the UAH / EUR exchange rate and the fundamental factors is stronger than the UAH / USD exchange rate. For the UAH / EUR and for the UAH / USD, the correlation coefficients with all fundamental factors selected for the study do not exceed 0.7.

The determining factor for setting the price for a currency is the demand and supply for it in the foreign exchange market. To analyze the tendency of development of the cash foreign exchange market we have shown the dynamics of the volume of cash foreign exchange transactions during 2016 – 2019 (11 months) and their trend values in figure 2.

The graphical analysis reveals a general tendency to increase the volume of foreign currency purchases and sales in the cash market, the bulk of which are US dollars (75.6% of the total cash currency purchases and sales in the market in 2019). Trend values can be regarded as the equilibrium values of currency sales and purchases.

Cash foreign currency sales exceeded the equilibrium level in July – December 2017, July – September 2018 and July – November 2019, indicating the seasonality of this phenomenon. The slowdown in the growth rate of foreign currency sales and purchases in the foreign exchange cash market in 2018 – 2019 indicates the stabilization of the foreign exchange market.

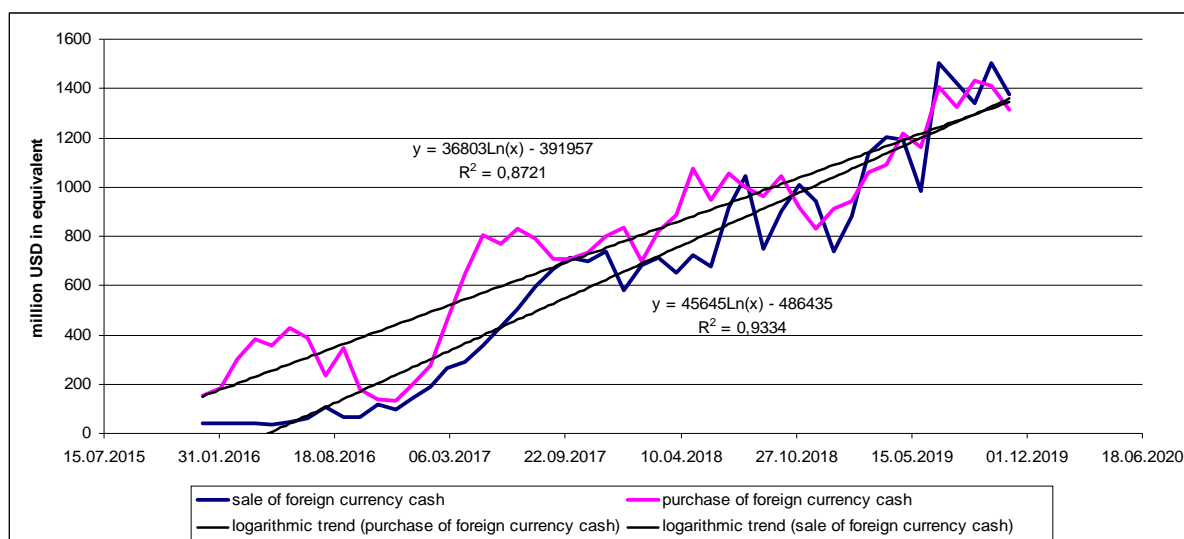


Figure 2 – Volume of cash foreign currency transactions during 2016 – 2019 and its trend values

The rapid growth in the volume of cash foreign currency transactions is explained by the fact that effective stabilization measures have been taken as a prerequisite for stabilization of the foreign exchange market with the aggravation of the financial and political crisis in Ukraine. Therefore, since 2015, a significant restriction on the sale of cash in foreign currency to the population of the country has been introduced. This situation continued until the end of 2016. And, since 2017, this restriction has been mitigating, and other transactions related to foreign currency have become much simpler [6, p. 158].

Trend models in Fig. 2 of the volumes of sale of cash foreign currency and volumes of its purchase indicate a further increase of total volume of transactions with foreign currencies on the cash foreign exchange market.

Conclusion. The analysis of the dynamics of the national currency exchange rate and the determinants of its formation allows us to confirm that the devaluation of the hryvnia during 2016 – 2017 is the result of the accumulated imbalances in the country's economy. During 2018 – 2019, the trend for national currency appreciation is explained by the predominance of foreign currency purchases from the population over its population sales, as well as the growth of the country's external debt due to borrowing. Currency interventions are used as a means of reducing the amplitude of price fluctuations and are not the cause of inflation. This is evidenced by the insignificance of the connection between them. The study found that the hryvnia exchange rate against the US dollar and euro fluctuates in synchrony with such macroeconomic factors as external debt (direct and guaranteed) and the foreign exchange reserves of the national Bank of Ukraine.

The insignificance of the correlation between the cost of the national currency and the volume of currency sales in the interbank foreign exchange market (USD million in equivalent) and the deficit of the consolidated budget (in% of GDP) indicates the absence of a market mechanism of exchange rate formation. Under the unchanged socio-economic conditions, the upward trend in the capacity of the national currency market will continue in the long-term run.

Further studies involve the study of macroeconomic factors that will serve as fundamental factors to smooth exchange rate volatility.

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УКРАИНАНЫҢ ВАЛЮТА НАРЫҒЫНЫҢ ДАМУ ТЕНДЕНЦИЯЛАРЫ

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ТЕНДЕНЦИИ РАЗВИТИЯ ВАЛЮТНОГО РЫНКА УКРАИНЫ

Аннотация. На современном этапе экономического развития страны валютный рынок определяется сложными экономическими отношениями, которые связаны с операциями купли-продажи иностранной валюты для обслуживания операций в сфере торговли и бизнеса. Рост открытости национальной экономики и интеграция Украины в мировую экономическую систему становятся причинами усиления влияния внешних и внутренних факторов на валютный рынок, рост волатильности обменного курса национальной валюты и обуславливают высокую рискованность операций на валютном рынке. Это, в свою очередь, уменьшает привлекательность экономики для ведения бизнеса. Связывая национальную экономику с мировым рынком через механизм валютных отношений, обменный курс национальной валюты имеет тесную взаимосвязь со всеми экономическими процессами. С одной стороны, он подвергается воздействию сложного комплекса эндогенных и экзогенных макроэкономических факторов, с другой – влияет на финансовое состояние страны. От курса национальной валюты зависит конкурентоспособность товаров отечественного производства на международных рынках, объемы и направление внешнеэкономических связей, движение финансовых потоков. В этом контексте обменный курс гривны рассматривается как важный показатель экономического развития страны, действенный инструмент осуществления валютной политики Центральным банком и ключевая характеристика состояния валютного рынка. Именно поэтому возникает необходимость повышения эффективности функционирования валютного рынка в Украине, что и обусловило выбор темы исследования.

Цель исследования заключается в определении особенностей конъюнктуры национального валютного рынка и установлении тенденций изменения основных показателей его деятельности. Особое внимание уделяется анализу тенденций колебания обменного курса гривны по отношению к доллару США и евро, а также факторам, вызывающим нестабильность валютного рынка Украины.

В данном исследовании определены особенности функционирования валютного рынка Украины на протяжении 2015-2019 гг. На основе анализа динамики обменного курса гривны выделены основные этапы изменения курса и установлено определяющие факторы изменения валютного курса гривны относительно доллара США и евро на каждом из этапов. Для первого периода (январь 2016г. – январь 2017г.) характерными были, во-первых, девальвация гривны на 7,2% по отношению к доллару США и 4,3% относительно евро, во-вторых, поддержка относительной стабильности обменного курса гривны с помощью интервенций как правило в форме валютных аукционов. Для второго периода (январь 2017г. – январь 2018г.) характерны усиленные курсовые колебания, гривна девальвировала только на 3,2% относительно доллара США и потеряла 12% стоимости относительно евро. Основными причинами этого были расходы на обслуживание внешнего долга и отрицательный внешнеторговый баланс. На третьем этапе (февраль 2018 г. – ноябрь 2019г.) началось формирование нового тренда: динамика обменного курса гривны к доллару США отмечается постепенным укреплением курса национальной валюты.

Проведена оценка конъюнктуры национального валютного рынка и основных показателей, которые позволяют оценить эффективность его функционирования. К ним относятся золотовалютные резервы, валютные интервенции и валовой внешний долг. В течение 2016 г. – 11 месяцев 2019 г. сальдо валютных интервенций было положительным, что позволяет Центральному банку выкупать излишки валюты на валютном рынке. Результатом наличия избыточного предложения валюты на валютном рынке является рост объемов международных резервов НБУ и ревальвация гривны.

С целью выявления курсообразующих факторов применены методы корреляционного анализа и установлено синхронность в динамике отдельных макроэкономических показателей и валютных курсов гривны относительно доллара США и евро в течение 2015 г. – 11 месяцев 2019г. Установлено, что общим для обоих курсов валют является существенность связи с внешним долгом и золотовалютными резервами НБУ. Несущественность связи обнаружена с объемами продажи валюты на межбанковском валютном рынке и дефицитом сводного бюджета в% к ВВП. С другими факторами плотность связи каждой пары курсовых соотношений отличается. Проанализировано соотношение объемов купли-продажи иностранной валюты на наличном валютном рынке. Согласно полученных данных, сделаны предположения о тенденциях развития национального валютного рынка на будущее.

Ключевые слова: валютный рынок, валютный курс, интервенции, валютно-курсовая политика, международные резервы, Национальный Банк Украины.

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