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Reserve Currency Competition in a Polycentric World Financial System

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ABSTRACT

This research is devoted to the issues of reserve currency competition in the global financial system. The paper **aims** to investigate key sources of competitive advantages of reserve currencies in the context of the development of the global financial system towards currency multipolarity and assess how digital transformation can affect the drivers of reserve currencies' competitive positions in the global financial system. The author uses the following **methods** of scientific research: analysis, synthesis, abstraction, deduction, induction, and logical method. The article notes that the financial market capacity is the key factor of reserve currency competitiveness. The author emphasizes that monetary policy instruments that provide funding for financial institutions play a key role in strengthening reserve currency competitiveness in the global financial market. The author highlights that during the COVID-19 crisis monetary policy of the central banks that issue reserve currencies stabilized the situation in the world financial system and strengthened the positions of the major reserve currencies in the global financial market. The author notes that the increase of monetary policy cooperation between central banks points to the evolution of the world financial system towards currency multipolarity. The research emphasized that the development of ecosystems driven by digital transformation can significantly affect the competitive positions of currencies in the global financial system. The author **concludes** that the global financial system is evolving towards currency multipolarity meaning that the US dollar will remain a leading reserve currency and at the same time other reserve currencies will likely play a bigger role. **Further research** of currency competition problems may investigate the impact of digital transformation on competitive positions of reserve currencies in the global financial system.

Keywords: global financial system; currency competition; global financial market; international foreign exchange reserves; monetary policy; digitalization; central banks; reserve currencies; global banking system; currency multipolarity

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INTRODUCTION

The development of the world economy in the last decade has been characterized by an increase in the role of developing countries. It can be argued that economic growth in emerging countries has become one of the important drivers of the development of the world economy. At the same time, advanced economies continue to play a leading role in the modern global financial system. The state of the world financial system is still determined by the situation in the financial markets of the leading advanced economies.

The development of the global financial system in modern conditions is complex and contradictory. Digitalization processes have a significant impact on the global financial system. The digitalization of the global financial system is reflected in the widespread use of mobile banking technologies, the development of the business of fintech companies, the robotization of financial services, the use of remote customer identification technologies based on biometrics, as well as the development of financial business based on ecosystems. Technological innovations based on the use of digital technologies have significantly improved the quality of payment and settlement services through the introduction of online payments, providing opportunities for P2P and P2B transfers, as well as creating additional opportunities for making payments and transfers using mobile devices. The profound changes taking place in the global financial system under the influence of digitalization processes have contributed to improving the

quality and accessibility of financial services, as well as the emergence of new financial products that meet the needs of business entities. The state of the financial markets of advanced economies is characterized by a favorable environment, formed largely under the influence of significant support measures of monetary policy. Capitalization of the stock markets of the largest developed countries has grown significantly in recent years and are close to their historical highs.

At the same time, the modern world financial system is characterized by serious problems associated with an increase in the debt burden of the largest sovereign borrowers, an increase in the budget deficit of advanced economies, and an increase in volatility in the global foreign exchange market. A serious problem facing the advanced economies is the exacerbation of the problem of social inequality, which in the long run can lead to the loss of competitive advantages by the economy. In addition, further intensification of contradictions and conflicts between countries, in particular the US and China, can significantly affect the state of the global financial system.

Despite the end of the acute phase of the crisis caused by the coronavirus pandemic, the consequences of the restrictive measures introduced to combat the spread of infection have not yet been overcome and continue to have a negative impact on the industry and services of developed countries.

Consideration of problems related to the assessment of the role of the world's leading currencies in the global financial system and competition between them is the subject of research by Russian and foreign authors [1–6]. Among researchers considering the problems of currency competitiveness, there is no consensus on the effectiveness of the functioning of the global monetary and financial system, the vector of its further development and the features of currency competition at the present stage. Many issues related to the role of central banks in ensuring the competitive advantages of the currency in the face of increased international currency competition remain unresolved. The problems of digitalization of the financial sector in the context of solving the problem of increasing the competitiveness of the currency require further research. Issues related to the peculiarities of the development of the financial systems of the largest economies and the peculiarities of competition between the leading world currencies are of particular relevance in the context of the ongoing processes of digital transformation of the financial systems of the largest developed countries and the global financial system. The relevance of the research topic is also due to the need to identify key factors for the competitiveness of the world's leading currencies in the context of digitalization of the global financial system and overcoming the consequences of the coronavirus crisis. This paper is devoted to identifying the key factors in the competitiveness of currencies in the context of the polycentric development of the global financial system, as well as analyzing the processes of digital transformation in the context of the problems of international currency competition.

THE CONCEPT OF CURRENCY COMPETITION AND THE MAIN FACTORS DETERMINING THE COMPETITIVENESS OF A CURRENCY AT THE PRESENT STAGE OF DEVELOPMENT OF THE WORLD FINANCIAL SYSTEM

Currency competition is a complex, contradictory and multifaceted phenomenon, and when assessing it, it is important to take into account a significant number of factors. Despite the importance of economic factors in the competitiveness of currencies, it is also important to consider social, political, technological and behavioral aspects, which, according to the author, significantly affect the competitive position of the world's leading currencies.

The author considers currency competition as a dynamic process of rivalry between states or integration associations seeking to achieve and maintain the leading position of their currencies in the global financial system. For the global financial market participants, the competitiveness of a currency is determined

by its obvious advantages over other available currencies. The competitiveness of the currency is understood as the compliance of the currency with the criteria desired by the participants of the global financial market, allowing it to occupy a leading position in the global financial system.

Factors that determine the competitive advantage of a currency include:

- the capacity of the national financial market and the variety of instruments traded on it, considering the needs of financial market entities;
- the relative interest of companies and banks in attracting funding in the currency in question;
- the quality of the ongoing economic policy that promotes the development of the financial market while ensuring financial stability;
- level of development of the national payment system;
- share of the state or integration association in world trade;
- the rate of economic growth compared to other countries issuing reserve currencies;
- the capacity of the domestic market and the solvency of consumers.

When evaluating the role of currency in the system of international financial relations, the prevailing preferences of financial market participants regarding the choice of reserve currencies, which are characterized by a high share of inertia [7], are also important.

The competitiveness of a currency is an objective category and can be determined using a system of quantitative and qualitative indicators. These indicators include:

- the share of the relevant currency in international reserves;
- the volume of transactions with this currency in the world financial market;
- indicators of capitalization of stock and bond markets;
- volumes of issue of financial instruments denominated in the relevant currency;
- indicators characterizing the use of the currency in the implementation of foreign trade operations between countries.

In addition, important indicators characterizing the competitiveness of the currency are indicators characterizing the attraction of funding in the relevant currency by credit institutions and companies.

In addition to quantitative indicators that characterize the role of the currency in the global financial system, qualitative indicators are important, the key of which is the confidence of market participants in the economic policy pursued by national regulators, as well as the confidence of market participants in ensuring financial stability in the long term. Confidence is a subjective and ambiguous characteristic that is difficult to assess. According to the author, one of the possible approaches to assessing the degree of confidence of market participants in the ongoing economic policy is the cost of a credit default swap on government bonds. The low prices for these instruments reflect the high degree of market participants' confidence in the policy pursued by the monetary authorities of countries issuing reserve currencies.

An important consequence of the competition between reserve currencies is the high efficiency of the monetary policy pursued in these countries, which ensures financial stability and creates favorable conditions for the development of financial markets. Competition enhances the quality of policy, as the credibility of the financial system and the ability to adhere to policy objectives in the long term are important to market participants.

ASSESSMENT OF THE ROLE OF MAJOR RESERVE CURRENCIES IN THE WORLD FINANCIAL SYSTEM

The development of the global financial system at the present stage is characterized by a hierarchy of reserve currencies, which can be divided into three groups.

The first group includes the US dollar, which retains the status of the world's leading reserve currency.

The second group includes the euro, which also plays an important role in the global monetary and financial system, but is significantly inferior in importance to the US dollar.

The third group of world reserve currencies includes the British pound sterling, the Australian dollar, the Japanese yen, the Canadian dollar, the Swiss franc and the Chinese yuan. The reserve currencies belonging to this group also play an important role in the global financial market, but they are significantly inferior to the US dollar and the euro in terms of their importance. At the same time, in recent years there has been a slight increase in the value of reserve currencies of the second and third groups, which is manifested in an increase in international settlements carried out with their help, an increase in the capitalization of national stock markets, an increase in the volume of reserves placed in these currencies, as well as an increase in the supply of financial instruments expressed in those currencies. In addition, the inclusion of the Chinese yuan in the SDR currency basket and the conclusion of currency swap agreements by the People's Bank of China with the central banks of a number of countries helped strengthen the positions of the Chinese yuan to a certain extent in the global financial system.

The leading position of the US dollar in the global financial system is due to a number of factors. In particular, the implementation of settlements in US dollars for foreign trade operations is an important channel for the spread of the dollar and one of the factors explaining its leading role. The implementation of settlements in US dollars under foreign trade contracts creates the preconditions for an increase in demand for US dollar funding from companies and banks, stimulates demand for assets denominated in US dollars, and also dictates the need for operations on the derivatives market to manage the currency risks. In addition, the availability of US dollar funding creates favorable conditions for using the dollar as a settlement currency in foreign economic activity. Thus, the role of the US dollar as a currency for settlements under foreign trade contracts and the role of the US dollar as a key currency in transactions on the global financial market are closely related. The use of the US dollar in settlements for foreign trade transactions stimulates its use in making transactions in the global financial market, but at the same time, the key role of the US dollar in making financial transactions in the international currency and securities market creates additional prerequisites for the use of the US dollar in concluding foreign trade contracts. This conclusion is consistent with the results of the studies [8, 9].

One of the key indicators confirming the leading role of the US dollar in the global financial system is the share of the US dollar in the world's foreign exchange reserves. The US dollar also remains the most traded currency in the international foreign exchange market. According to the International Monetary Fund (IMF), transactions with the US dollar account for more than 44% of the trade turnover in the world currency market [10]. Debt instruments denominated in US dollars play the most significant role in the structure of the international debt market.

In addition, an important indicator that characterizes the competitive advantages of a reserve currency for participants in the global financial market is the volume of lending to non-bank foreign borrowers in the respective reserve currencies. This indicator characterizes the degree of convenience of using the reserve currency for companies in the non-financial sector, the depth of the national financial market, as well as the level of development of its infrastructure. *Table 1* shows that the US dollar remains the most popular foreign currency for non-banking organizations to attract credit resources in the international financial market.

A slight decrease in the percentage share of the US dollar in world reserves does not allow us to conclude that its role in the global financial system is significantly reduced and is due to objective needs for the diversification of accumulated reserves. In recent years, there has been a trend towards an increase in the volume of accumulated US dollar reserves in absolute terms (*Fig. 1*). At the same time, the assessment of the role of the currency only on the basis of international foreign exchange reserves does not provide an exhaustive picture of its role in the international financial market.

Table 1

Credit to non-bank foreign borrowers denominated in the following reserve currencies

year	US		Euro area			Japan		
	USD bn	%*	EUR bn	USD ** bn	%*	JPY bn	USD** bn	%*
2014	9,390	17.88	2,310	2,804	8.01	46,811	391	2.37
2015	9,920	18.12	2,479	2,699	8.36	45,339	377	2.28
2016	10,449	18.27	2,604	2,744	8.58	42,065	359	2.06
2017	11,115	18.61	2,897	3,475	9.30	44,250	393	2.14
2018	11,559	18.40	3,148	3,605	9.89	48,679	443	2.31
2019	12,113	18.43	3,324	3,734	10.09	48,359	446	2.24
2020	12,725	17.43	3,445	4,227	9.67	48,789	473	2.13
2021***	13,054	17.58	3,485	4,086	9.70	46,436	419	2.04

Source: compiled by the author based on the statistical data provided by the Bank for International Settlements (BIS). URL: https://www.bis.org/statistics/gli.htm?m=6%7C 333%7C 690 (accessed on 10.11.2021).

Notes: * — as a % of total credit to non-financial borrowers; ** — calculated using exchange rates at the end of each period, URL: https://www.bis.org/statistics/xrusd.htm?m=6%7C 381%7C 675; *** — as of Q1 2021.

As an estimate characterizing the role of the reserve currency in the international financial market, the author proposes an indicator equal to the volume of foreign exchange reserves placed in the corresponding reserve currency and the value of claims of international banks in this currency (Y).

The indicator of the value of international banking claims characterizes the value of assets in the corresponding reserve currency held by non-resident banks. This indicator allows assessing the significance of the reserve currency for the international banking system, as well as assessing the extent to which this currency is used by non-resident banks in the international financial market. In addition, this indicator shows the role of currency in world trade, since the presence of such assets in banks is due, among other things, to their servicing of clients engaged in foreign economic activity. A change in the volume of foreign exchange reserves placed in the corresponding reserve currency makes it possible to assess the demand for this currency from central banks when they form foreign exchange reserves. Thus, the proposed indicator allows assessing the degree of competitiveness of the reserve currency in the international financial market, considering the demand for it from credit institutions and central banks.

It seems appropriate to separately consider this indicator for the US dollar, given its key role in the international financial market. The data characterizing the dynamics of the calculated indicator for the US dollar indicate that the US dollar remains the key currency in the international financial market over the period under review and the US dollar has competitive advantages over other reserve currencies (*Fig. 2*).

The use of regression analysis made it possible to identify the trend component of the growth of the indicator under consideration for the US dollar, which is described by the equation of a log-linear time trend $\ln y = at + b$. The resulting regression equation is:

$$\ln(Y_{USD}) = 0.01117442t + 16.56552494,$$

where t — the time period.

The regression analysis data presented in *Fig. 3* confirm the significance of the obtained trend equation and its applicability to the considered data.

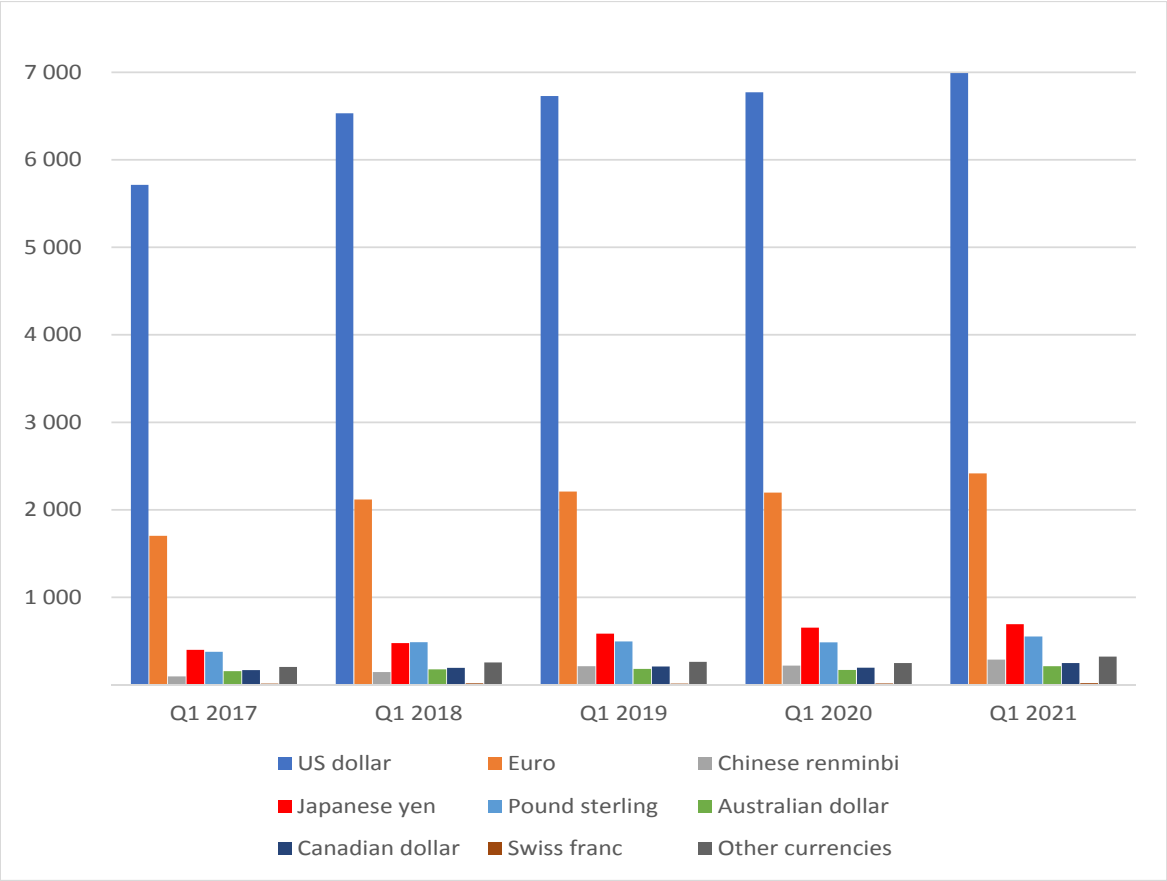

Fig. 1. **Composition of the international foreign exchange reserves by selected currencies, billion US dollars**

Source: compiled by the author based on IMF data. URL: https://data.imf.org/regular.aspx?key=41175 (accessed on 10.11.2021).

The stable growth of this indicator for the US dollar is due to the constant growth of US dollar assets of banks outside the US. This trend points to the growing importance of the US dollar to non-US lenders and to the key role of US dollar asset markets in the international banking system. The data obtained also testify to the inertia of the preferences of the participants in the international financial market regarding the choice of currencies for transactions, which is manifested in the preservation of the key role of the US dollar. These conclusions are consistent with the results of studies [11–13].

As part of the polycentric development of the global financial system, the US dollar is likely to retain its status as the world's main reserve currency. At the same time, as the volume of accumulated reserves grows, the volume of portfolios of participants in the global financial market increases and global trade grows, the need for diversification of foreign exchange assets will increase and thereby create prerequisites for some increase in the role of the euro, the British pound, the Australian dollar, the Canadian dollar and the Japanese yen. An important prerequisite for increasing the role of these currencies is the growth of their liquidity. In particular, the further strengthening of the role of the euro in the global financial system implies the completion of the formation of a single financial market and a single banking system in the euro area. The formation of a single financial market in the Eurozone will help increase its liquidity, increase the supply of financial instruments denominated in euros, as well as further develop the market for securitization products. An additional factor in strengthening the position of the euro could be the development of digital infrastructure, including the development of global ecosystems based on European business, as well as the improvement of digital technologies for making payments and settlements. In addition, the growth in the use of the euro in the

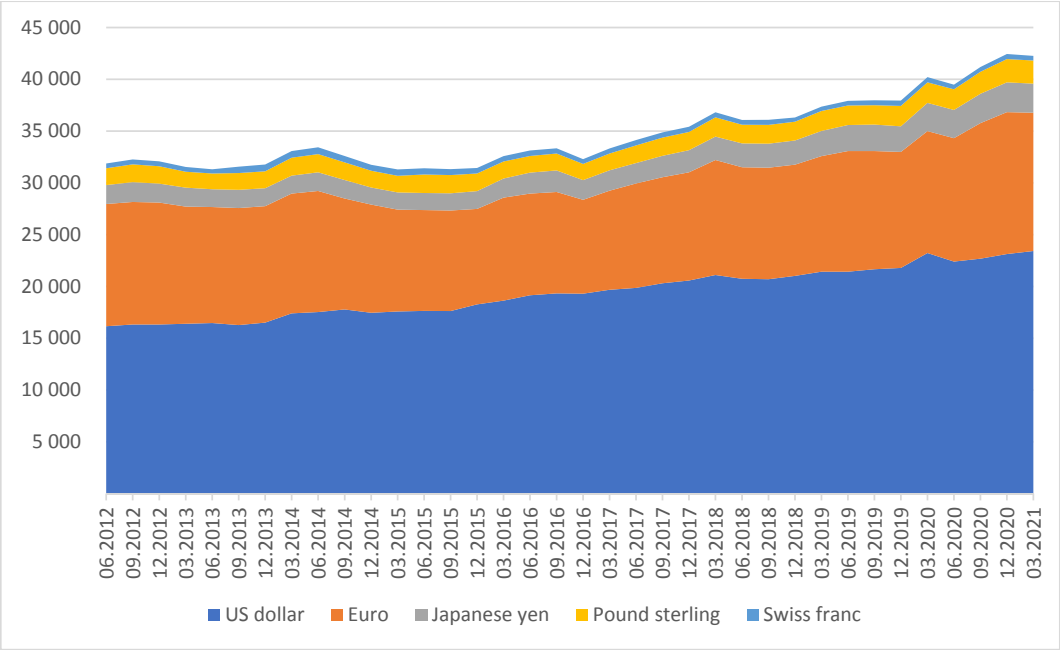

Fig. 2. **The role of selected reserve currencies in the global financial market, billion US dollars**

Source: compiled by the author based on the data from BIS, IMF. URL: https://www.bis.org/statistics/bankstats.htm?m=6%7C 31%7C69; URL: https://data.imf.org/regular.aspx?key=41175 (accessed on 10.08.2021).

Regression Statistics	
R Square	0.9804
Adjusted R Square	0.9798
Standard error	0.0169
Observations	36

	df	SS	MS	F-test	p-value for F test
Regression	1	0.48511	0.48511	1699	$1.29145 * 10^{-30}$
Residual	34	0.00971	0.00029		
Total	35	0.49482			

Coefficient	Coefficient value	Standard error value for the coefficient	Student's t-test for the coefficient	p-value for the coefficient
b	16.56552494	0.00575133	2880.29	$3.52586 * 10^{-93}$
a	0.01117442	0.00027107	41.22	$1.29145 * 10^{-30}$

Fig. 3. **Data of regression analysis of the indicator equal to the size of foreign exchange reserves and the value of claims of international banks for the US dollar (Y_{USD}) from 30.06.2012 to 31.03.2021**

Source: compiled by the author based on the data from BIS and IMF using Microsoft Excel. URL: https://www.bis.org/statistics/bankstats.htm?m=6%7C31%7C69; https://data.imf.org/regular.aspx?key=41175 using Microsoft Excel (accessed on 10.08.2021).

international financial market will be facilitated by a stimulating monetary policy that ensures the growth of final demand and an increase in the capacity of the financial market.

The development of the global financial system towards multipolarity will help increase its stability, create additional investment opportunities for market participants, as well as develop the infrastructure of the global financial market.

IMPACT OF MONETARY POLICY ON CURRENCY COMPETITIVENESS IN THE CONTEXT OF POLYCENTRIC DEVELOPMENT OF THE WORLD FINANCIAL SYSTEM

With the dynamic development of financial markets and the increasing importance of the financial sector for economic growth in developed countries, the policies pursued by the central bank are critical to ensure and maintain the competitiveness of the currency. The central bank influences the competitiveness of the currency in several key areas, the most important of which is monetary policy, as well as policies aimed at developing financial market infrastructure and introducing innovative financial technologies.

The effectiveness of the monetary policy of the central bank is determined by the degree to which the objectives of the policy are achieved and its validity in terms of creating favorable conditions for economic development. The inflation rate is a key benchmark in the conduct of the monetary policy of developed countries. In addition, the level of employment is also considered an important indicator characterizing the degree of effectiveness of the monetary policy. In a broader context, ensuring and maintaining financial stability is a strategic goal and at the same time the most important criterion for the effectiveness of the ongoing monetary policy [14–16]. Violation of financial stability inevitably means the loss of the competitive advantages of the currency.

Considering the leading role of the US dollar in the global financial system, the US Federal Reserve's approach to assessing financial stability risks deserves special attention. The US Federal Reserve identifies four groups of factors that could potentially lead to a violation of financial stability:

- excessive borrowing by business entities and growth in debt burden;
- "bubbles" in the market of financial assets;
- excessive leverage in the financial sector;
- possible deterioration of liquidity indicators of credit institutions.[1]

The complexity of assessing these factors lies not only in the fact that they are interrelated but also in the difficulty of identifying specific criteria that indicate an increase in certain risks. In particular, in practice, it seems very difficult to make an unambiguous conclusion about whether the growth in prices for financial assets is fundamentally justified or indicates the formation of a "bubble". In addition, the question of what level of the debt burden of business entities in the context of a high level of development of the financial system can actually be considered excessive, in many cases it is debatable and does not have an unambiguous solution. Consideration of financial stability issues in the context of determining the competitive advantages of world currencies involves specifying these factors and identifying key aspects of competitiveness that affect the appetite of global financial market participants for the world's leading currencies.

At the present stage, the monetary policy of central banks issuing reserve currencies is clearly stimulating. Monetary policy pursued by central banks combines keeping interest rates close to zero, buying assets in the securities market, and special funding programs [17, 18]. The implementation of quantitative easing programs by the world's leading central banks has led to a significant increase in their balance sheets, as well as indicators of the monetary base.

The coronavirus crisis has created serious risks for the competitiveness of the world's leading currencies, associated with widening spreads in corporate bond markets, as well as the prospect of disruption in the functioning of securitization markets and falling stock markets.

[1] Financial Stability Report. Board of Governors of the Federal Reserve System. May 2021. URL: https://www.federalreserve.gov/publications/files/financial-stability-report-20210506.pdf (accessed on 10.06.2021).

The use of monetary policy instruments made it possible to prevent the spread of the crisis [19]. The ultra-soft monetary policy pursued by the central banks of the countries issuing reserve currencies, both in the context of the global financial crisis and the current situation related to the spread of the coronavirus, was largely similar in nature and proved to be effective by creating additional prerequisites for the recovery of economic activity, increasing confidence in the financial system and strengthening the competitive positions of these currencies in the global financial system. In particular, the quantitative easing programs carried out by the ECB during the European debt crisis, as well as during the coronavirus pandemic, had a positive impact on the Eurozone economy and ensured an increase in investor confidence in the euro. Quantitative easing programs strengthened the competitive position of the euro in the global financial system and contributed to strengthening the financial stability of the Eurozone by creating additional conditions for lower government and corporate bond yields, as well as the growth of stock markets. The ECB's quantitative easing policy has provided additional liquidity to the securities market, boosted the confidence of economic actors in the eurozone financial system, and created additional competitive advantages for European companies and banks by reducing the cost of debt funding.

The quantitative easing programs implemented by the US Federal Reserve have also been successful both in terms of maintaining financial stability and restoring investor confidence in the financial system and in terms of creating favorable conditions for the recovery of the US economy in the post-crisis period.

Monetary policy by major central banks issuing reserve currencies has kept markets healthy and credit available to economic actors during the coronavirus crisis. An important result of the monetary policy of the world's leading central banks during the global financial crisis and the corona crisis was also the creation of additional conditions for changing the composition and structure of the portfolios of financial market participants in favor of more risky assets. The growth of risk appetite among the participants of the global financial market contributed to the stabilization of the credit market, the growth of demand for more risky assets, and also had a beneficial effect on the stock markets of countries issuing reserve currencies.

The positions of currencies in the international financial market are largely determined by the capacity of the financial markets of the respective countries or regional associations [20, 21]. Creating conditions for the development of the financial market, as well as for issuing a sufficient number of financial assets that are attractive investment objects and can satisfy the existing demand, is fundamentally important to ensure the leading position of the currency in modern conditions. In particular, the high capacity of the stock and bond markets is important in terms of ensuring a high level of competitiveness of the US dollar in the international financial market (*Table 2*). Strengthening the competitive positions of currencies requires leading central banks to pursue a monetary policy that contributes to increasing the capacity and depth of the financial market by ensuring high rates of GDP monetization, and developing funding instruments that allow access to liquidity in the respective currency, not only national but also foreign credit organizations.

A characteristic feature of the modern international financial market is a consistently high demand for bonds with high credit quality, due to the growth of assets of credit institutions and the increase in foreign exchange reserves of central banks. In works [22, 23] the authors note the shortage of bonds of a high-reliability category. High demand for this group of financial instruments stimulates the purchase of reserve currencies of countries with the largest financial markets and creates additional prerequisites for increasing their competitiveness.

The importance of expanding the capacity of financial asset markets determines the particular importance of not only the markets for government debt, stocks, corporate bonds, but also asset-backed bond markets. The effective functioning of the securitization market, especially mortgage securitization, can be considered as an important factor in

Table 2

Debt outstanding, equity outstanding and monetization of GDP for the countries issuing reserve currencies as of December 2020

	Bonds outstanding, billion USD	Government bonds outstanding, billion USD	Equity market capitalization, billion USD	Monetary aggregate M1 to GDP, %	Monetary aggregate M3 to GDP, %
USA	47,199	16,003.3	40,720	85	92
Eurozone	22,260	9,479.3	10,368	90	127
China	18,556	–	12,214	62	228*
Japan	14,670	8,377.6	6,718	173	275
UK	7,172	2,490.8	2,945	103	155
Australia	2,502	588.7	1,721	70	124
Canada	3,915	673.0	2,641	63	133
Switzerland	575	75.5	2,002	104	162

Source: compiled by the author based on the statistical data provided by the Organisation for Economic Co-operation and Development (OECD). DOI: https://doi.org/10.1787/data-00900-en; BIS. URL: https://stats.bis.org/statx/toc/SEC.html; World Bank Group. URL: https://data.worldbank.org/topic/financial-sector?view=chart; The Swiss National Bank. URL: https://data.snb.ch/en/topics/snb#!/cube/snbmonagg; The People's Bank of China, URL: http://www.pbc.gov.cn/diaochatongjisi/resource/cms/2021/01/2021011817552169087.htm (accessed on 10.08.2021).

Note: * — M2 to GDP is provided for China, %.

the competitiveness of the currency since this market segment creates additional prerequisites for the inflow of capital into the financial market and maintaining the demand for currency in the market in the long term.

A well-functioning securitization market makes it possible to create financial assets with attractive characteristics and thus attract investors interested in acquiring this asset type to the financial market. The use of securitization mechanisms also allows banks to increase lending without raising additional capital. The asset-backed bond market stimulates the development and growth of the household lending market, which is especially important for the largest economies with a high share of final consumption in GDP. For advanced economies that are issuers of the world's leading currencies, a high level of lending to the population contributes to the growth of the competitiveness of currencies by creating conditions for the growth of consumption and increasing the capacity of the domestic market.

The US securitization market is the largest in the world, the markets of other countries lag far behind it (*Fig. 4*). The high level of development of the asset securitization market is one of the factors that ensure the attractiveness of the US financial market and the leading position of the US dollar in the system of international financial relations.

The 2008 crisis development scenario also confirms the importance of this segment not only for the US economy but also for the global economy. Mortgage defaults, the securitization crisis and the resulting fall in residential real estate prices led to major disruptions in the mortgage securitization product market. The problems quickly spread to other segments of the financial market and led to the global financial crisis. In this context, it is also important to note that the monetary policy of the US Federal Reserve during the 2008 global financial crisis and the corona crisis contributed to the stabilization of the asset securitization market.

A reflection of the polycentric development of the global financial system is the development

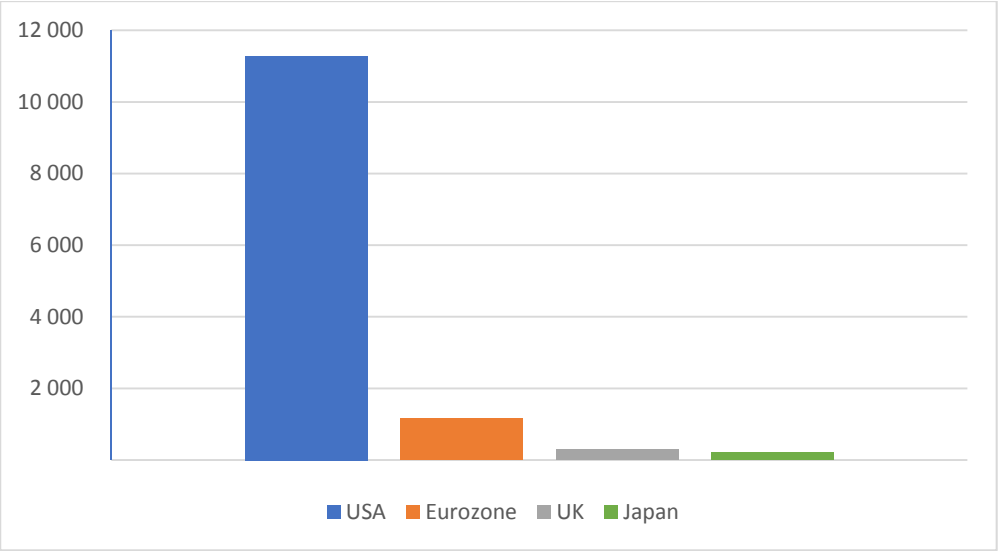

Fig. 4. **Largest global securitization markets based on issues outstanding as of Q1 2021, billion US dollars**

Source: compiled by the author based on the data from Association for Financial Markets in Europe. URL: https://www.afme.eu/Portals/0/DispatchFeaturedImages/AFME%20Q1%202021%20Securitisation%20Report%20v1.pdf; Japan Securities Dealers Association; https://www.jsda.or.jp/shiryoshitsu/toukei/doukou/files/2020doukou2bE.xls (accessed on 10.08.2021).

of cooperation between major central banks in conducting monetary policy. The basis for such cooperation is currency swap agreements. Swap agreements between central banks play a particularly important role during a crisis.

Periods of increased turbulence in the international financial market are characterized by an increase in demand for US dollar funding. This circumstance confirms the status of the US dollar as the world's leading reserve currency and also imposes the need for the US Federal Reserve to take into account not only the current state and prospects for the development of the US economy but also the situation in the international financial market and the needs of its participants in US dollar funding.

The US Federal Reserve actively used currency swaps as part of the fight against the 2008 crisis [24]. Swap agreements signed by the US Federal Reserve and major central banks helped reduce the cost of US dollar funding for credit institutions outside the US, became an additional factor supporting demand for dollar assets and reducing credit spreads, and also made an important contribution to strengthening the market participants' confidence in the US financial system [25]. In addition, these agreements contributed to the stabilization of the situation in the international financial market. The period of the acute phase of the crisis caused by the spread of the coronavirus disease was also characterized by a significant increase in demand for US dollar funding and an increase in its cost for credit institutions outside the United States. The Eurodollar market has demonstrated its vulnerability to deep crises, as a significant part of investors providing US dollar funding chose to reduce the size of funds placed in favor of more liquid assets of the highest reliability category, primarily short-term treasury bills. The conclusion about the presence of this pattern in the behavior of investors in the Eurodollar market was made on the basis of the work [26, 27].

At the time of the outbreak of the coronavirus crisis, a significant part of the US dollar funding in the international financial market was provided by non-US lenders. In addition, the largest credit institutions registered outside the United States held significant volumes of dollar-denominated assets on their balance sheets. Faced with the uncertainty associated with the spread of the coronavirus, companies and banks in the United States and countries that are major US trading partners have increased the demand for US dollar funding. At the same time, supply volumes decreased due to the transfer of

part of the portfolios to more liquid and reliable assets. A shortage of US dollar funding and an increase in its cost can provoke a sale of Us dollar assets, cause a significant drop in their prices, losses for credit institutions, and also lead to a decrease in the use of the US dollar in the international financial market.

The increase in international lending in US dollars, as well as the dependence of business entities outside the US on short-term US dollar funding, on the one hand, highlight the significant competitive advantages of the US dollar compared to other currencies on the international financial market, and on the other hand, impose the need for the US Federal Reserve to pursue an active monetary policy aimed at ensuring the availability of US dollar funding for banks and corporations outside the United States and maintaining the status of the US dollar as the main currency in the international financial market.

These circumstances explain the adoption by the US Federal Reserve of a wide range of measures aimed at ensuring the US dollar liquidity of foreign economic entities. During the 2008 global financial crisis and the corona crisis, the US Federal Reserve actively used swap agreements with key central banks to provide banks in the respective countries with additional US dollar liquidity. The importance of this tool is confirmed by its active use at the peak of problems with US dollar funding — the volume of US dollar liquidity provided through swaps by the US Federal Reserve reached $ 400 billion in March–April 2020 [28].

In addition to swaps, repo operations are another important channel for providing US dollar liquidity as part of the stimulating monetary policy pursued by the Fed. The liquid repo market plays an important role in ensuring the competitive advantages of the currency in the international financial market since repo transactions allow credit institutions to flexibly manage liquidity by attracting funding secured by securities. The repo market also allows credit institutions to create a leverage effect that increases the demand for financial assets and expands the capacity of securities markets denominated in the relevant currency.

To provide additional liquidity, the US Federal Reserve not only significantly increased the limits on repo operations, but also expanded the range of instruments used [29]. In the context of considering issues of currency competition, the FIMA (Repurchase Agreement Facility for Foreign and International Monetary Authorities),[2] program deserves special attention, which allows the central banks of other countries to enter into repo operations with the FRS secured by federal Treasury bonds stored in Federal Reserve Bank of New York.

The People's Bank of China, as part of its monetary policy, also actively uses currency swap agreements with central banks of other countries. According to the data, at the end of 2020, the People's Bank of China entered into more than 30 currency swap agreements [30]. These agreements allow foreign economic entities to access liquidity in yuan through the central banks of their countries and use the funds received to carry out the operations they need.

The conclusion of such agreements not only contributes to the growth of Chinese exports to the relevant countries but also ensures the growth of the competitive advantages of the yuan in the context of the multipolarity of the world monetary system. In addition, the conclusion of currency swap agreements will contribute to the further internationalization of the yuan and increase its role in the global financial system.

The policy pursued by the monetary authorities of China ensured the strengthening of the role of the yuan in the global financial market. At the same time, the Chinese yuan cannot currently be fully regarded as a currency capable of competing with key reserve currencies in the international financial market. China's share in world trade is much higher than the role played by the yuan in the international financial market. A further increase in its role is possible only in the event of further easing of restrictions on the movement of capital and the transition to a regime of free convertibility

[2] The Federal Reserve System. URL: https://www.federalreserve.gov/newsevents/pressreleases/monetary20200331a.htm (accessed on 10.08.2021).

of the yuan. In addition, the growth in the use of the yuan in the global financial system also implies an increase in the capacity of the Chinese financial market and liberalization of access to it for foreign investors.

The history of the development of the world financial system shows that the opportunities for cooperation between central banks in the implementation of monetary policy may be limited due to contradictions between them or differences in policy goals [31]. In addition, such cooperation is hindered by the existence of objective competition between the currencies and financial systems of countries and integration associations. At the same time, the cooperation of the world's leading central banks within the framework of swap agreements and repo operations in the course of a joint anti-crisis policy indicates both the key role of the US dollar in the modern global financial system and its polycentric development.

IMPACT OF DIGITALIZATION PROCESSES ON THE GLOBAL FINANCIAL SYSTEM AND OPPORTUNITIES FOR CHANGING CURRENT TRENDS

Digital transformation processes have a significant impact on the global financial system. An objective prerequisite for the rapid development of the processes of digitalization of credit institutions and the entry of fintech companies into the financial services market was consumer dissatisfaction with the quality and efficiency of traditional banking services [32]. The spread of coronavirus disease has accelerated the introduction of digital technologies and the digital transformation processes of credit institutions. The largest transnational banks consider digitalization to be the most important direction of their development.

The positions of credit institutions in the global financial market play a significant role in maintaining the competitive advantages of the currency. The digitalization of the global financial system has significantly increased the requirements for the speed, quality and convenience of services provided by credit institutions.

The improvement of customer-oriented business models by multinational banks based on the introduction of digital technologies allows them to increase the profitability of their business and gain additional competitive advantages in various markets. The global competitiveness of lenders is largely related to the ability to attract customers in the markets of various countries, offer financial products that meet their growing needs, as well as the ability to provide financial services based on advanced technologies.

The high competitiveness of credit institutions contributes to the development of the financial system of the state, the inflow of funds to the financial market, and also creates additional prerequisites for the growth of capitalization of the stock market and the growth of demand for the national currency. US lending institutions play a key role in the international financial market and are the largest providers of financial services. The high competitiveness of US credit institutions, due to the high credit ratings of international rating agencies, a stable financial position, as well as the high quality of their services in the international financial market are important to ensure the dominant position of the US dollar in the global financial system.

The development of the global financial system at the present stage indicates that the rapid introduction of innovative technologies leads to its profound changes, and also creates conditions for further changes in the business models of participants in the global financial market [33]. The processes of digital transformation of credit institutions and the global financial system in the future may affect the competitive positions of the world's leading currencies in the global monetary and financial system. In particular, the issuance of central bank digital currencies (CBDCs), improvements in payment and settlement technologies, and the development of ecosystems that enable the provision of both financial and non-financial services can help change the current situation.

Currently, all major central banks are at different stages of research into issues related to the issuance of digital money that meets the

needs of business entities in the context of accelerating the digitalization of the economy in developed countries [34]. The possible issue of CBDC can be seen as a response of central banks to the new needs of the digital economy in settlements and payments.

In particular, the possibility of issuing digital money with different characteristics is being considered by the European Central Bank,[3] the Bank of England,[4] the Bank of Canada,[5] the Bank of Japan,[6] the Swiss National Bank[7] and the Reserve Bank of Australia.[8] The People's Bank of China considers the study of the issue of the Central Bank of China one of the priority areas of its activity and was the first among the world's largest central banks to begin active testing of the digital yuan as part of a pilot project.[9] To date, the largest central banks have not made a final decision on the issuance of CBDC and their possible characteristics.

The issue of CBDCs will help accelerate the digitalization of the global financial system and the development of payment systems. The degree of influence of CBDCs on the financial system will be determined by their characteristics, as well as by how much new digital money will be in demand when making payments and settlements [35]. The possibility of issuing CBDC is considered in the context of increasing the competitiveness of the currency in the global financial system, developing payment and settlement systems, ensuring financial stability, improving the quality and availability of financial services, and stimulating competition among organizations providing financial services.

In case of the success of projects for the issuance of CBDCs, the competitive positions of the respective currencies may increase. CBDCs released in retail form, are potentially a convenient means for making payments and settlements within ecosystems.

The expansion of the business of the largest ecosystems can be seen as a factor that can have a significant impact on the development of the global financial system [36]. Ecosystem users gain access to unique combinations of products and services that create a competitive advantage for ecosystems and help them increase their market share [37]. The client-oriented development of ecosystems, as well as the availability of significant financial and technological resources at their disposal, create favorable conditions for their expansion in the world market. The global nature of the development of ecosystems, as well as the expansion of the range of goods and services offered, can provide additional support for digital currencies if they are used in them.

The use of CBDC in global ecosystems providing financial and non-financial services will not only provide additional demand for this currency but will also contribute to the development of the ecosystems themselves. Ecosystems created by the US and Chinese companies are not only world leaders in terms of the volume of operations, but also actively developing in foreign markets. The largest ecosystems include, in particular, US —Facebook, Alphabet, Amazon, Apple, Microsoft and Chinese — Alibaba, Tencent, JD.com.

The accumulated information about their customers allows companies, within the ecosystems they have created, to create financial and payment and settlement services that can

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[3] ECB. URL: https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210714~d99198ea23.en.html (accessed on 10.08.2021).

[4] Bank of England. Discussion Paper: Central Bank Digital Currency Opportunities, challenges, and design. 2020. URL: https://www.bankofengland.co.uk/-/media/boe/files/paper/2020/central-bank-digital-currency-opportunities-challenges-and-design.pdf?la=en&hash=DFAD 18646A77C 00772AF1C 5B 18E 63E 71F68E 4593 (accessed on 10.08.2021).

[5] Usher A. et al. Bank of Canada. The Positive Case for a CBDC. Staff Discussion Paper. 2021. URL: https://www.bankofcanada.ca/wp-content/uploads/2021/07/sdp2021–11.pdf (accessed on 10.08.2021).

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[7] Swiss National Bank. Press release. 10 June 2021. URL: https://www.snb.ch/en/mmr/reference/pre_20210610/source/pre_20210610.en.pdf (accessed on 10.08.2021).

[8] Richards T. et al. Retail Central Bank Digital Currency: Design Considerations, Rationales, and Implications. Reserve Bank of Australia. 2020. URL: https://www.rba.gov.au/publications/bulletin/2020/sep/pdf/retail-central-bank-digital-currency-design-considerations-rationales-and-implications.pdf (accessed on 10.08.2021).

[9] Working Group on E-CNY Research and Development of the People's Bank of China. Progress of Research & Development of E-CNY in China. 2021. URL: http://www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021071614584691871.pdf (accessed on 10.08.2021).

successfully compete with banking services. In particular, WhatsApp Pay allows individuals to make P2P transfers without commission; Alibaba has successfully entered the financial services market. The presence of various profitable lines of business hypothetically allows large technology companies in the ecosystems they have built to subsidize the provision of financial services at some point in order to continue their expansion in the international market [38].

Another possible option for the development of digital technologies in the field of payments and settlements in ecosystems is the use of stablecoins backed by fiat money. In particular, Facebook is considering issuing Diem, a stablecoin,[10] backed by fiat money. In particular, Facebook is considering issuing Diem, a stablecoin backed by the most liquid currencies. If a decision is made to launch a project, Diem stablecoins can be pegged either to one of the liquid currencies or to a basket of currencies. The use of stablecoins by the largest companies within the ecosystems and platforms they support can become an additional factor supporting the demand for currencies to which stablecoins are pegged.

Given these facts, we can conclude that the Chinese yuan and the US dollar can potentially benefit the most from accelerating digitalization processes towards the development of ecosystems, the issuance of digital currencies, as well as the creation of private digital assets used for settlements within the ecosystem. In this context, private digital assets are stablecoins backed by fiat money. Further expansion of global ecosystems to world markets and digitalization of financial systems may lead to a reduction in the use of national currencies in favor of digital currencies of the largest central banks or stablecoins accepted in ecosystems.

In the long term, we can expect a gradual change in the nature of international monetary competition due to the development of digitalization processes. Important factors determining the competitive advantages of currencies, in addition to those previously considered, will be the leadership of countries in the development of global ecosystems and the possibility of using the corresponding digital currencies or digital assets linked to certain currencies in them. Leading positions in the global financial system will be occupied by the currencies of countries that are world leaders in the development of global ecosystems and in terms of the degree of integration of their currencies into them.

CONCLUSIONS

The article examines the current problems of the competitiveness of reserve currencies. To assess the role of reserve currencies in the global financial system, an indicator is proposed that is calculated as the volume of foreign exchange reserves placed in the corresponding reserve currency and international banking claims in this currency. The world financial system is developing towards currency multipolarity, which is manifested in the increasing role of the euro, the British pound sterling, the Australian dollar, the Canadian dollar, and the Japanese yen while maintaining the leading role of the US dollar in the international financial market.

The capacity of the national financial market is becoming an increasingly significant factor in the competitiveness of the currency. Significant demand for financial assets with high credit quality provides demand for reserve currencies and is an important factor explaining the leading position of the US dollar in the global financial system. The article shows that in addition to the bond and stock markets traditionally considered in this context, the securitization market is of paramount importance. The ability to meet the demand for assets with the characteristics desired by investors becomes a key factor in the competitiveness of a reserve currency.

Monetary policy is an important tool for ensuring the competitiveness of the currency in the context of the polycentric development of the global financial system. During the corona crisis, the monetary policy pursued by central banks issuing reserve currencies was proactive and helped strengthen the positions of these currencies in the international financial market.

[10] Diem. URL: https://www.diem.com/en-us/learn-faq/ (accessed on 10.08.2021).

The availability of affordable funding instruments from the regulator is necessary to ensure the competitive advantages of the currency. Monetary policy, which creates conditions for increasing the capacity and depth of the financial market, creates favorable conditions for increasing the competitiveness of the currency in the international financial market. The implementation of a policy that ensures the strengthening of the role of the currency in the international financial market involves not only assistance in creating a favorable environment for issuers to enter the securities market, but also the development of refinancing instruments in the direction of providing liquidity to foreign credit institutions through repo operations and currency swaps.

The conclusion of the US Federal Reserve with the largest central banks of currency swap agreements indicates the expansion of cooperation between central banks in conducting monetary policy and is an objective reflection of the multipolarity of the global financial system. In addition, the conclusion of such agreements confirms the key role of the US dollar in the global financial system.

The acceleration of digitalization processes in the global financial system can affect not only the competitive positions of individual reserve currencies but also the factors of competitiveness of currencies in the global financial system. The scale of the business of the largest ecosystems and the prospects for their expansion into international markets make it possible to consider the degree of development of national ecosystems as a new factor in the competitiveness of the currency in the global financial system. The current trajectory of the expansion of the largest ecosystems allows us to draw a conclusion about the potential benefits for the US dollar and the Chinese yuan from the development of digitalization processes in the global financial system.

The capabilities of ecosystems, allowing them to meet the growing needs of economic entities in financial and non-financial services on a global scale, will provide key positions for the currencies of countries leading in the development of ecosystems. Due to the significant benefits of ecosystem development, countries issuing reserve currencies should adopt an approach that combines the creation of a favorable regulatory environment for the development of national ecosystems, protecting the interests of end consumers and stimulating competition. The possible use in ecosystems of digital currencies of central banks or stablecoins pegged to reserve currencies will provide additional demand for these currencies and create competitive advantages for them.

The strengthening of currency competition in the context of the multipolarity of the world economy is in the interests of consumers of financial products and services, contributes to an increase in the speed of the introduction of financial innovations, and also creates additional prerequisites for improving the quality of the economic policy pursued.

Further evolution of the global financial system towards multipolarity will increase its resistance to crises. The competition of reserve currencies in the context of the multipolarity of the global financial system will contribute to an increase in the supply of financial instruments of a high-reliability category, which, in turn, will create additional opportunities for diversifying market portfolios of participants, reducing the role of the US dollar in the international financial market by increasing the share of other reserve currencies, as well as the development of the international financial market.

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