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Transformation of the International Reserves in the Context of a Crisis of Confidence

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ABSTRACT

International reserves as the most important component of the international monetary system (IMS) operate on the basis of their inherent basic principles and reflect the main systemic transformations. The use of international reserves as an instrument of pressure on sovereign states has caused uncharacteristic risks in the system and led to its significant transformations, manifested in the dynamics of reserve accumulation and the structure of reserve portfolios. The **purpose** of the study was to determine the causes, factors and transformation trends of the international reserve system and the **subject of the research** was international reservation in the context of fragmentation of the global economy. In the course of the research, the **methods** of comparative, logical and contextual analysis, systematization and generalization, statistical analysis of time series and extrapolation were used. The author's contribution was an analysis of the dynamics of accumulation of international reserves and their distribution by groups of countries for the period from 2000 to 2024, which revealed significant discrepancies between forecast and actual parameters, primarily for the group of developing countries. The differences in the policy of managing international reserves of developed and developing countries and the impact of geopolitical risks are shown. It is **concluded** that the replacement of major reserve currencies with gold in the international reserves of developing countries is aimed at reducing vulnerability to the risk of blocking by decreasing the volume of toxic currency assets. This process leads to the remonetization of gold, strengthening its role both in the international reserve system and in the IMS.

Keywords: international reserves; Official Foreign Exchange Reserves; reserve assets; gold; IMS; digital currencies; tokenization

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INTRODUCTION

The exacerbation of the geopolitical situation and global confrontation, accompanied by the freezing of a significant portion of the Russian Federation's international reserves, raised the question of the expediency and risks of using major reserve currencies within the structure of international reserves (IR). At the same time, international reserves are an inherent and very significant element of the modern international monetary and financial system (IMFS), and a radical transformation of the international reserve system without reforming the existing principles of the IMFS's functioning seems to be a non-trivial task. The disruption of the basic conditions for equilibrium in the global economy and global finance, in the absence of adequate world money and a contemporary crisis of confidence in the main reserve currency — the US dollar — is leading to fragmentation and a general systemic crisis in the IMFS. In this regard, the question of the effectiveness of both the entire IMFS complex and international reserves in particular is of particular interest, both practically and scientifically-theoretically.

Restricting the free disposal of reserve assets destroys the purpose of the IR's existence. The unconditional availability of all IR components and trust in the ability of reserve currency issuers to meet their international obligations are fundamental to the possibility of using national fiat currencies as world money.

The importance of IR as a key element of IMFS has necessitated their comprehensive study, leading to a significant number of scientific publications dedicated to various aspects of their functioning. Significant attention is paid to the purpose of IR and the analysis of factors determining their currency structure [1–4], as well as the reasons for the USD dominance [5–7]. Based on a study of the currency structure of the reserve portfolios of 58 countries, a direct relationship was identified between the currency structure of export settlements and international reserves [8]. Other studies also confirm the correlation between the functions of a means of

payment and the accumulation of reserve currencies [9], which helps explain a number of recent trends in international reserves. While the relative return on reserve assets, whether traditional or non-traditional currencies, is not a key factor in the process of dedollarizing foreign exchange reserves [6].

Specialists' attention has been drawn to the volume of funds held as part of IR, particularly by developing countries, which has led to a number of studies exploring the reasons for the accumulation of foreign exchange reserves, as well as the opportunity costs of holding them [10], which can reach 1% of annual GDP [11].

The freezing of a portion of the foreign exchange reserves of one of the largest of the international reserve system participants could not help but attract the attention of researchers who attempted to assess the potential consequences of this phenomenon for the IMFS. Discrediting such an important element not only undermines the foundations of global finance but also indirectly indicates an underestimation of the role of international reserves in the IMFS. Russian scientists state that the blocking of Russia's foreign exchange reserves prevents the established concept of international reserves from being maintained [12]. Western experts also note that the precedent of imposing sanctions targeting Russian foreign exchange reserves will lead to a decrease in demand for key reserve currencies and will change the format of reserves [13].

In this regard, there is a need to determine the adequacy of existing principles of international reserve management, as well as to identify the factors and directions of its transformation in the changing IMFS, which defined the goal and objectives of this study.

PROBLEM STATEMENT

The current IR concept and its main provisions are outlined in the IMF document "Guidelines. International reserves and foreign currency liquidity. Data Presentation Format". Paragraph 9 of this document states that a country's international reserves are "...external assets that are readily available to and controlled by monetary authorities for the purpose of meeting balance of payments financing needs, intervening in foreign exchange markets to influence the exchange rate, and for other relevant purposes (such as maintaining confidence in the currency and economy, and as a basis for external borrowing)".[1] The concept is based on understanding reserve assets as foreign liabilities. Simply put, these are the requirements of monetary authorities for non-residents in foreign currency. At the same time, p. 11 specifically emphasizes that "the indispensable components of the concept of international reserves" are their free disposal by monetary authorities.[2]

Reserves are formed from four main types of reserve assets: monetary gold, holdings of special drawing rights (SDRs), a country's reserve position in the IMF, and foreign exchange reserves (FXR). The latter constitute the main part of IR.

The volume of international *currency* reserves (FXR) varies significantly across countries. For example, in 2023, 90% of the 205 countries for which the IMF has relevant information held less than 100 million in their currency portfolios, while the top five countries accumulated almost 7 trillion US dollars, or over half of the total global currency reserves (China — 3.3 trillion, Japan — 1.2 trillion, Switzerland — 756 billion, India — 575 billion, and Taiwan — 564 billion).

The structure of IR is also different because the priorities of those who manage them do not align. The potential uses of reserves, determined by the degree of economic development and the monetary and financial system of countries, their integration into the global economy, the monetary policy pursued by regulators, and other factors, define the priority of either the transaction motive or the precautionary motive in managing reserve portfolios. The first is primarily followed by developing countries with export-oriented economies, which are forced to maintain undervalued national currencies, for which they need substantial reserves with a large foreign exchange component. Furthermore, many developing countries have limited access to crisis financing from the Global Financial Safety Net (GFSN), which means they primarily have to rely on their own reserves [14].

[1] Guidelines. International reserves and foreign currency liquidity. Data presentation format. URL: https://www.imf.org/external/np/sta/ir/irprocessweb/pdf/guideRUS.pdf (accessed on 21.11.2024).

[2] Guidelines. International reserves and foreign currency liquidity. Data presentation format. URL: https://www.imf.org/external/np/sta/ir/irprocessweb/pdf/guideRUS.pdf (accessed on 21.11.2024).

The second motive is followed by the managers of the central banks of the most advanced economies (further — AE), who do not conduct active currency interventions, typically hold small reserve portfolios, often with a predominant share of monetary gold. At the end of 2023, the share of gold in the composition of MR exceeded 72% for the USA and Germany, 68% for Italy, and 70% for France.[3] On average across the countries of the European Union's Economic and Monetary, including the European Central Bank, the share of gold in the IR composition was higher than 60%. If necessary, in crisis situations, they have access to foreign exchange from all GFSN sources, as well as from capital markets. These IR portfolio management policy priorities influence the distribution of aggregate global foreign exchange reserves across country groups and the structure of reserve portfolios.

Under the gold standard and the emergence of paper money in circulation, the MR existed as a state gold reserve, which secured the state's national currency, external obligations, and international settlements.

Within the framework of the Genoa International Monetary System, a currency component appeared in the IR, but as a proxy for gold. National currencies (the US dollar, the British pound, and the French franc) became part of the reserves because they were convertible to gold. Similarly, in the Bretton Woods system, the dollar as a reserve currency was significant because it was exchangeable for gold.

After the gold standard was abolished, gold's role in IR began to diminish in the context of its "demonetization", but this metal never left the IR composition, increasing its presence during crisis periods and thus demonstrating its reserve, collateral, and protective potential.

The development of globalization processes, followed by the formation of a unipolar world, led to the transformation of the role of IR, shifting the focus from their security and collateral function to a transactional one and embedding them in the system of global currency liquidity redistribution. The role of gold in the international reserve system has been declining.

In 1999, European central banks concluded the Washington Agreement on Gold (Central Bank Gold Agreements, CBGA), which coordinated their sales of monetary gold to prevent imbalances in the global precious metal market and a collapse in world prices. This was reflected in the structure of total global international reserves, where the gold component began to decrease while the currency component became dominant. International foreign exchange reserves have become "external assets" that have literally become external both in an economic sense (as obligations of reserve currency issuing countries to non-residents, holders of foreign exchange reserves) and physically, as they were held in accounts and financial assets abroad under the control of their issuers. The sanctions potential of reserve currencies has been formed, but it was not in demand until recently because the leading issuing countries were the main beneficiaries of the global monetary and financial system operating under the Washington Consensus.

In the modern international financial system, international reserves are a crucial element ensuring the interconnection between the official and private components of global liquidity[4] within the framework of its redistribution in the international and national monetary systems. The current model of international reserve accumulation provokes the reproduction of global imbalances [15], unequal exchange, and the redistribution of savings from developing countries in favor of reserve currency issuing countries. The dominance of the transactional motive for reserve formation and management over the precautionary motive, along with the increasing share of their currency component and volumes that are clearly excessive for fulfilling their inherent functions, indicates a loss of the main purpose of reserves as a factor of reliability for international obligations and the stability of monetary and financial systems at the national and international levels.

The idea of securing the debts of some countries with the debts of others, given the debt nature of fiat reserve currencies and the Triffin dilemma, is

[3] URL: https://www.rbc.ru/quote/news/article/5ae098a62ae5961b67a1c4ba (accessed on 22.11.2024).

[4] Global liquidity — concept, measurement and policy implications. Committee on the global financial system. Bank for International Settlements, 2011. CGFS Papers. No. 45. URL: https://www.bis.org/publ/cgfs45.pdf (accessed on 20.10.2024).

becoming increasingly questionable. The global monetary system, which is not gold-backed but operates under the Bretton Woods framework, can exist only with unconditional trust in the reserve currency issuing countries that have assumed the corresponding international obligations. These obligations also apply to the international reserves of countries in the global community.

The fact that a sovereign state's currency reserves have been blocked is by no means an isolated incident, which indicates that this tool has become systematically considered as a means of influencing the behavior of sovereign states and punishing them. In addition to the foreign exchange holdings of the Bank of Russia, the United States has blocked the reserve assets of the central banks of North Korea, Iran, Venezuela, Libya, and Syria. In 2021, Afghanistan's foreign exchange reserves have been frozen since 2021 till now, and they have not been unfrozen to this day. The US practice of freezing foreign reserves has been adopted by its other Western allies. The EU and the UK have also blocked the reserve assets of the Russian Federation, Libya, and Syria.

The United States has managed to extend sanctions restrictions to such an IR component as SDRs, prohibiting its Treasury Department from exchanging SDRs held by Russia and Belarus for dollars.

The expansion of the practice of blocking reserve assets in the IMF system could not go unnoticed, which was reflected in both the statistics on total global foreign exchange reserves and in the portfolio management policies of many countries around the world.

DISTRIBUTION AND DYNAMICS OF INTERNATIONAL RESERVES

Analyzing the dynamics of aggregate international currency reserves is of particular interest, given the speed and scale of their accumulation, especially before the global crisis of 2008–2009.

IRS' statistics show their growth until 2015, after which their volume stabilized at 11–12 trillion in 2015–2024. Minor price fluctuations during this period are mainly related to changes in the currency structure and exchange rate dynamics. The peak volume of total foreign exchange reserves was reached in the fourth quarter of 2021 (12.9 trillion), but by the second quarter of 2022, it had decreased again to 12.0 trillion. The latest IMF data for Q1 2025 indicates that total reserves amount to 12.54 trillion.[5]

Let's analyze the dynamics of foreign exchange reserves from 2000 to 2021.

Before the global crisis, from 2000 to 2007, total global foreign exchange reserves grew at an average annual rate of 18.5%. In the following 7 years, they increased at an average rate of 9.8%, and from 2015 to 2021, the average annual growth rate decreased to 0.5% (*Fig. 1*). In 2022–2024, the average annual growth rate, calculated quarterly, became negative (–0.145%).

An analysis of the distribution of reserves across major country groups shows that between 2000 and 2014, reserves in AE increased 3.3 times, while those in developing countries increased 11.6 times. As a result, by the beginning of 2015, two-thirds of global currency reserves were concentrated in developing countries: the average annual amount of reserves held by developing countries in 2014 was twice that of developed countries (7.9 trillion US dollars compared to 3.9 trillion US dollars in Q1 2015). At the same time, while the reasons for the concentration of reserves in the group of developing countries are quite understandable, given their export orientation, the sudden change in their growth rates requires further study. It was decided to make a projected forecast of the dynamics of global foreign exchange reserves by developed and developing countries and compare the obtained data with the actual figures.

Official IMF data from 2000 to 2014 inclusive were used to forecast the dynamics of the ICR and extrapolate the indicators. The actual figures for 2019 and 2021 are taken from World Bank statistics, as the IMF stopped providing data for these country groups from the beginning of 2015.

The cumulative absolute increases and growth rates for AE and emerging markets & developing economies (EMDEs) differed significantly over the analyzed period: annual increases in absolute increases were observed in the group of developing countries, while growth was linearly stable in AE.

[5] Currency Composition of Official Foreign Exchange Reserves (COFER), International Financial Statistics (IFS). URL: http://data.imf.org/ on: 10/09/2025 (accessed on 10.09.2025).

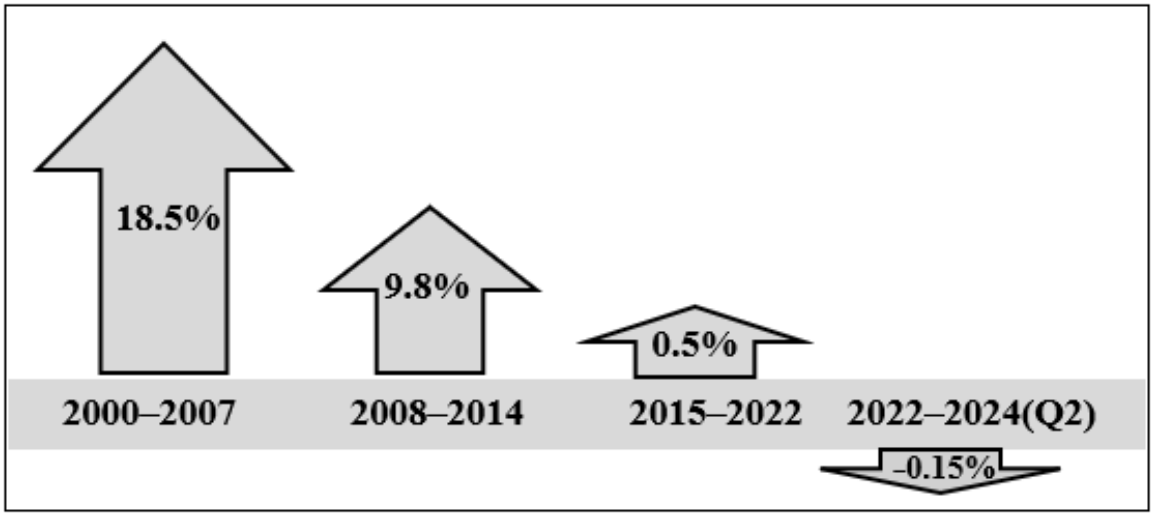

Fig. 1. **Changes in Average Annual Growth Rates of Total International Currency Reserves for the Periods Indicated**

Source: Compiled by the author based on Currency Composition of Official Foreign Exchange Reserves (COFER), International Financial Statistics (IFS).

Therefore, the analysis and forecasting calculations were made for AE based on the linear trend $Y = a + bt$.

A 2nd order parabola $Y = a + bt + ct^2$ was used to forecast the indicators of EMDE.

After calculating the parameters of the corresponding trend equations and smoothed (theoretical) levels of the time series, point forecasts for the reserve sums for 2019 and 2021 were made. The results obtained are presented in the *Table*.

Let's supplement our calculations by also making an interval forecast. The root mean square deviations of the trends were calculated, which amounted to ± 827 323.5 million for developing countries and ± 106 440.54 million for AE

Next, taking into account the Student's t-test for a probability of 0.95 and the corresponding degrees of freedom, prediction intervals were calculated: ± 229 954.15 million for AE and ± 1 787 349.68 million for EMDE.

The resulting forecast results differ significantly from the actual ones, primarily for the group of developing countries (*Table*). For this group, the trend broke after the 2008–2009 crisis, causing their annual increases in total ICR to slow down and stabilize to a linear trend. The distribution of reserves across country groups has also changed; in 2023, developing countries accounted for 58.5% of global reserves excluding gold.

The dynamics of aggregate FXR indicate significant transformations in the global economy and finance after the global crisis, as their dynamics are driven by the nature and intensity of cross-country interaction.

The shift in the balance of power in the global economy in favor of countries that have consistently developed long-term national development strategies, such as China and India, has disrupted the fragile balance that was established after the collapse of the Soviet Union. Following the global financial crisis of 2008–2009, financial globalization gave way to deglobalization processes associated with the restoration of the role of nation-states and the strengthening of interstate barriers to various types of exchanges. The sanctions policy and trade wars of the United States and its Western allies, which intensified after 2015, strengthened the objective deglobalization trend and led to the fragmentation of the global economy. According to the IMF, the share of countries subjects only to financial sanctions increased from 22% to 57% of their total number between 2010 and 2022. The number of new trade barriers imposed annually has almost tripled since 2019, reaching 3000 in 2022.[6]

[6] Global financial stability report: Safeguarding financial stability amid high inflation and geopolitical risk. April. 2023. Washington, DC. URL: https://www.imf.org/en/Publications/GFSR/Issues/2023/04/11/global-financial-stability-report-april-2023 (accessed on 12.11.2024).

Table

Forecast and Actual Data on the Volume of Total International Currency Reserves, Million US Dollars

Indicator / Year	Point forecast		Interval forecast		Actual Data*	
	AE	EMDE	AE	EMDE	AE	EMDE
2019	4884150.29	12557705.55	–	-	4998117.03	7197893.88
2019 всего	17441855.84		15424552.0–19459159.67		12196010.91	
2021	5289846.02	14443974. 49	–	–	6119965.76	7829807.08
2021 всего	19733820.51		17716516.68–21751124.34		13949772.84	

Source: author's calculations based on: Currency Composition of Official Foreign Exchange Reserves (COFER). International Financial Statistics (IFS). International Liquidity selected indicators.

Note: AE — advanced economies, EMDE — emerging market and developing economies. * Total Reserves excluding Gold.

The increasing instability and crisis-proneness of the global economy has necessitated a revision of the global development paradigm, a rejection of the deregulation concept, and a difficult choice between efficiency based on the optimal use of global economic resources and ensuring sustainability to protect against external shocks, disruptions in value chains, and economic and geopolitical risks [16]. The priority of ensuring the sustainability of trade and production links is evident in the trends of reshoring and "friend-shoring" (relocating value chains to friendly countries). Changing national development strategies involves shifting the focus from export orientation to domestic markets, which reduces the need for foreign exchange reserves. Trade and investment flows are being redirected along new geopolitical lines within allied blocs.

In the financial sector, the tightening of Basel capital and liquidity requirements for banks has negatively impacted the growth rate of bank assets and their lending potential. All of this has led to a slowdown in the growth rate of global GDP and world trade. Before the global financial crisis of 2008–2009, the growth rate of world trade was almost twice that of real GDP, but after the crisis, they have converged. During 2000–2005 the average annual growth rate of global exports was 11.4%, in 2005–2010–6.3%, 2010–2015–1.5%, and in 2015–2020–2.7%. The corresponding figures for imports were 11.3%, 5.9%, 1.5%, and 2.8%, respectively.[7] These aspects of global development have led to a slowdown in the accumulation of total international reserves.

TRANSFORMATION OF THE STRUCTURE OF INTERNATIONAL RESERVES

The fragmentation of the global economy and finance, deglobalization processes, and the intensification of geopolitical tensions, especially after 2015, have affected not only the dynamics but also the structure of international reserves. Let's note the following main trends:

- dedollarization and diversification of international reserves;
- orientation toward geopolitical allies when determining the currency structure of the reserve portfolio;
- the influence of the reserve management policies of major holders on the structure of total international reserves;

[7] UNCTAD website. URL: https://unctadstat.unctad.org/insights/theme/11#indicator-45 (accessed on 12.11.2024).

• an increase in the share of monetary gold while the currency component of total international reserves stagnates.

The decrease in the share of the US dollar in total FXR by 13 percentage points, from 71% in 2000 to 57.7% in Q1 2025, did not lead to a corresponding increase in the share of other major reserve currencies — the euro, yen, and British pound — but was accompanied by a growth in the share of such non-traditional currencies as the Australian, Canadian, and Singaporean dollars, the Chinese yuan, the South Korean won, and Scandinavian currencies. While the combined share of the US dollar, euro, British pound, and Japanese yen decreased from 96.5% (Q1 2010) to 88.1% (Q1 2025) after the Global Crisis. Significant diversification of foreign exchange reserve portfolios toward alternative currencies has been observed in about fifty countries, including both developed and developing ones [17]. In 2022, investments in US Treasury securities decreased in Japan, China (including Hong Kong), Taiwan, South Korea, and Brazil. The dedollarization of global currency reserves, reflecting the weakening of the US position in the global economy and trade, accelerated after the freezing of part of Russia's currency reserves, when objectively forming global trends were exacerbated by geopolitical risk.

About a quarter of the dollar's share reduction was due to the yuan, whose weight increased from 1.08% in 2016 to 2.18% by the end of 2024. At the same time, countries show a significant direct correlation between the volume of trade with China and the share of the yuan in their reserves. Globally, the ratio of the total volume of reserves in yuan to the volume of international trade in yuan (the currency of invoice denomination) is close to the ratio of the total volume of foreign exchange reserves in euros to the total volume of global trade in euros [17]. As international trade using the yuan expands, its share in international reserves is likely to grow. This is facilitated by the policy of the People's Bank of China, which has concluded swap agreements with 39 central banks for a total amount of about 3.7 trillion yuan (550 billion US dollars) to increase the scale of trade in its national currency.

The influence of geopolitics on the structure of the IMF was first noted in 2017. Researchers [18] identify two main strategies: forming reserve portfolios from the assets of political and military allies, or based on trade and financial ties, the reliability, and liquidity of the main reserve assets. The first strategy is designed to protect against geopolitical risks, such as the blocking of reserve assets, and is favored by Eastern Bloc countries, allies of China and Russia. The second strategy is characteristic of the Western bloc countries, the United States and their allies. Geopolitical fragmentation is causing a *structural transformation of international reserves*, including thru the policies of their main holders.

The Bank of Russia has been taking "non-economic risks" into account in its IR management policy since 2018. Two portfolios were identified within their structure: one to protect against financial and currency shocks, and another to protect against geopolitical pressure and non-economic sanction risks. The first contained traditional reserve currencies (the dollar, the euro, the British pound), while the second included the yuan, SDRs, and monetary gold. Subsequent events proved the correctness of this approach; the Bank of Russia managed to protect the reserve assets of the second portfolio.

The transformation of the IR structure is influenced by their high degree of concentration among a specific group of countries. As mentioned earlier, over half of the total FXR is accounted for by China, Japan, Switzerland, India, Taiwan, and Russia. It is evident that a change in the policy of IR formation by these countries alone can trigger a general structural transformation of aggregate global reserves. For example, the decrease in the share of dollar reserves held by China, Russia, and Switzerland (from 42% in 2000 to 39% at the end of 2021), and maintaining them at a level significantly below the global average, influences the overall picture [19].

The potential threat of blocking foreign exchange reserves has prompted central banks to diversify their reserve portfolios not only in favor of the currencies of geopolitical partners but also in favor of gold, which is a traditional, politically neutral safe-haven asset and can be stored within national territory under the control of monetary authorities. Against the backdrop of stagnating dynamics in total foreign exchange reserves, the increase in the gold component is happening at a noticeable pace.

GOLD AS A PROTECTIVE RESERVE ASSET IN CONDITIONS OF A TRUST CRISIS

The share of gold in IR began to increase after the global crisis of 2008–2009. Throughout the entire post-crisis period in the global gold market, central banks have been net buyers. As a result, they now own a fifth of all the gold ever mined in human history.

At the same time, the policies of developed and developing countries differed. While the former gradually sold off part of their gold reserves, especially before the Global Financial Crisis, the latter increased their acquisition of it. As a result, by the beginning of 2022, approximately 60% of monetary reserve gold was held in the reserves of developed countries (including 50% by the US and the EU), 30% by developing countries and emerging markets, and 10% by international organizations (primarily the IMF and the Bank for International Settlements (BIS)). On average, the gold component accounted for 19.2% of the developed countries' reserves and 7% of the developing countries' reserves during this period. Over the past 20 years, 14 developing countries have increased the share of gold in their reserves by 5 percentage points or more, with research showing that half of the largest annual increases in central bank gold reserves since the beginning of the 21st century have been linked to the risk of sanctions. At the same time, the proportion of the gold component of the reserves of the Western bloc countries as a whole did not change [20].

The directions of IR transformation in the Eastern Bloc are clearly demonstrated by China, which increased the share of gold from 2% of its world's largest reserves to 5.9% between 2015 and 2025, while the share of American securities (treasury and agency bonds) consistently decreased in 2024 and 2025 from 44% to 30%. Central banks in India and Turkey are actively acquiring gold. The Bank of Russia accelerated its gold purchases after the annexation of Crimea in 2014, and in 2025 its share in reserves reached 37%.[8]

The escalation of the geopolitical situation in 2022–2024 has boosted central banks' net gold purchases to record levels: 1082 tons in 2022 and 1037 tons in 2023. According to the WGC,[9] a third of the 70 central banks planned to continue acquiring this precious metal in 2024,[10] which they did, collectively purchasing 1045 tons. As a result, the share of gold in total global international reserves has reached 20% over the past three years.

Interest in gold is fueled by the rise in its global prices (*Fig. 2*).

The upward price dynamics result in an increase in the value share of gold in reserves, including due to revaluation. Additionally, the annual return of this IR component reached 15% in 2023. In September 2025, spot gold prices on the global market exceeded 3600 US dollars.

The trend toward replacing major reserve currencies with metallic gold in the IR of developing countries is further confirmation of the crisis in the international reserve concept due to a loss of confidence in major reserve currencies and the exacerbation of geopolitical risks.

RESULTS AND DISCUSSION

The repeated practice of blocking reserve assets has undermined confidence in the major reserve currencies and their issuers. Any country that, in the opinion of the United States and its allies, behaves improperly is at risk. In Western literature, an attempt has been made to provide a theoretical justification for such actions. The authors supplemented the functionality of the IR with new content, stating that US dollars are used in them as *security deposits* for foreign investments in developing economies, which can be withdrawn if these countries do not abide by the rules of the game [21].

Restricting the free access of monetary authorities in a number of countries to their foreign exchange reserves has discredited the entire concept of international reserves, creating specific risks within the system that cannot be diversified or reduced by any risk management methods [22, p. 196]. The peculiarity of these reserve blocking risks is that while their probability of realization is relatively low, they are fraught with a very significant

[8] URL: https://www.cbr.ru/hd_base/mrrf/mrrf_m/#highlight=%D0%BC%D0%B5%D0%B6%D0%B4%D1%83%D0%BD%D0%B0%D1%80%D0%BE%D0%B4%D0%BD%D1%8B%D0%B5%7C%D1%80%D0%B5%D0%B7%D0%B5%D1%80%D0%B2%D1%8B (accessed on 12.11.2024).

[9] World Gold Council, WGC.

[10] 2024 Central Bank Gold Reserves Survey. URL: https://gold.org/goldhub/data/2024-central-bank-gold-reserves-survey (accessed on 12.11.2024).

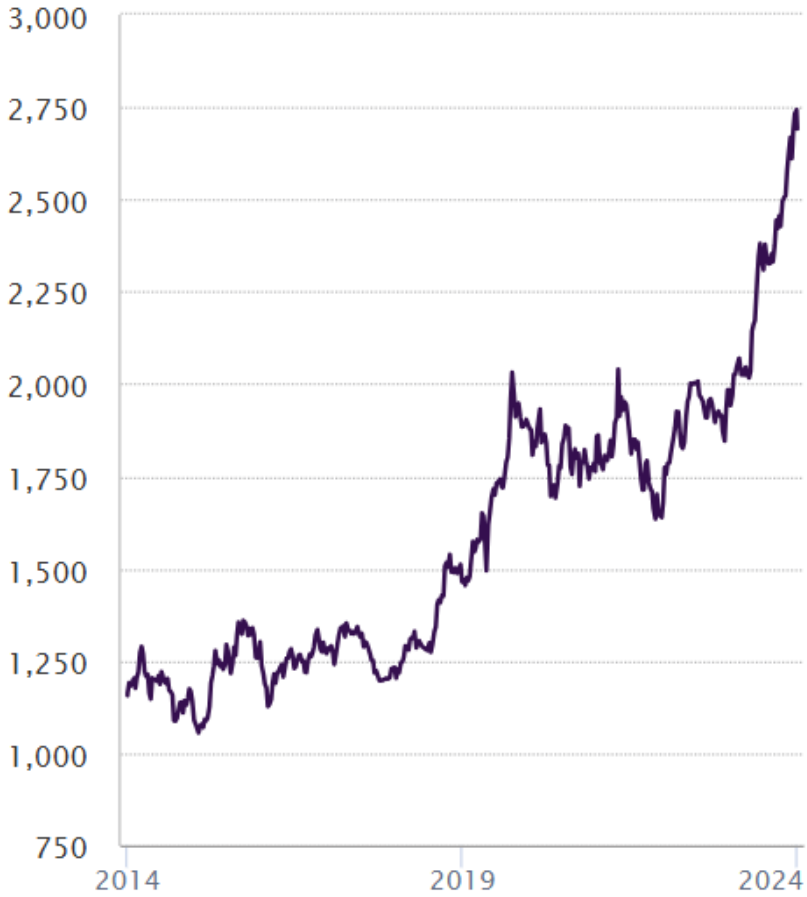

Fig. 2. **Spot Gold Price 2014–2024 US Dollars Ounce**

Source: World Gold Council. URL: https://www.gold.org/goldhub/research/library (accessed on 12.11.2024).

negative impact. The potential damage can only be reduced in one way — by *decreasing the degree of vulnerability* to it thru a reduction in the volume of toxic foreign currency assets. Developing countries, and particularly Eastern Bloc states, have to take this risk into account first and foremost, although it potentially exists for all countries, perhaps except for the United States.

The use of this tool of pressure on sovereign states gives the US the ability to control their behavior across all aspects of geoeconomics, geopolitics, and global finance. The trends in IR transformation identified thru the analysis indicate that countries are aware of this risk and are striving to reduce their vulnerability. This moment became one of the significant factors influencing the rate of accumulation and structural changes in IR in recent years. The problem is that it's not easy for the US dollar to find an alternative within the existing international monetary and financial system, so central banks are forced to act situationally, gradually replacing toxic assets with alternative currencies, primarily trade currencies, and monetary gold.

The search for ways out of the crisis is taking place in consideration of the strategic interests of the participants in the Western and Eastern blocs.

Western elites see the future of the IMF in digital format, and their main efforts are aimed at *maintaining the dominance of fiat reserve* currencies and countering the creation of alternative monetary and financial systems outside the dollar framework [23]. The platform architecture of a digital IMFS allows for the regulation of access to digital currencies thru controlled international institutions, and the programmability of digital tools — the direction of their use and the residency of holders.

Currently, two options for a future digital IMFS have been made public, both of which involve the use of tokenization technology.[11]

[11] Tokenization is the process of recording claims on financial or real assets on a programmable digital platform and representing and circulating them as tokens.

The BIS sees the future of the IMFS in the replacement of fiat money with central bank digital currencies (CBDCs), and their international interaction — either based on national/regional platforms by connecting new jurisdictions and currencies to them, or by creating a new global multilateral platform that facilitates international connections.[12] The international reservation system is not specified in this project, but the tokenization technology and the creation of a unified global programmable ledger allow it to be integrated into the supranational platform.

The IMF project involves central banks tokenizing their FXRs on a single programmable digital platform managed by the Fund [24].

Eastern Bloc countries are seeking to create an alternative to the dollar-based monetary and financial system within the framework of intergovernmental bilateral and multilateral agreements. They prefer to use national currencies and develop projects concerning backed reserves assets.

Currently, this search is leading to an increased role for gold as a reserve asset. The reserve function of monetary gold seems quite understandable, and its qualitative characteristics meet international requirements.

The volatility of global gold prices, which creates corresponding risks for investors, is not that high. In 2021, it was 14.4%, and for securities market instruments, it was 14.8% for the S&P500 and 16.8% for the MOEX.[13] The average daily volatility of the gold price over a five-year period was less than 20%, and the weekly volatility in 2024 was 13.83%, with gold showing a positive correlation in rising markets and a negative correlation in falling ones. Assessing the risk-return ratio, the WGC modeled the impact of adding gold to a portfolio with an allocation ranging from 2.5% to 10% and concluded that gold reduces volatility and improves returns, even with an increased allocation.[14] At the same time, gold's long-term returns have significantly outpaced inflation for over 50 years.[15] From 2004 to 2024, the average annual return on gold was 9%.

Gold's lower liquidity compared to reserve currencies makes it difficult to use for transactional purposes. However, the gold swap[16] mechanism can largely solve this problem.

Thus, a solution that allows for the protection of sovereign countries' reserves in the current geopolitical conditions leads to the *remonetization of gold*, strengthening its role both in the international reserve system and in the IMFS as a whole. Moreover, the capabilities of tokenization technology allow this reserve asset to be converted into digital form as well.

CONCLUSION

The contradiction between the unsecured, fiat nature of the US dollar and its functions as the world's reserve currency, as the balance of power in the global economy shifts, has led the US leadership to aggressively defend its dominance and unilaterally abandon its international commitments in the monetary and financial sphere. The unresolved problem of global money is becoming increasingly prominent and demands the attention of the international community. The US dollar's sanction potential and the increasing practice of blocking sovereign states' international reserves have created unusual and unhedgeable risks in the international financial system. The response was a natural desire by international reserve managers in many countries to reduce risk exposure and protect reserve portfolios from the arbitrary actions of the US and its allies. Today, this task is linked to ensuring the national financial sovereignty and independence of states. Her decision requires a rethinking of both the practice of managing international reserves under

[12] BIS Annual Economic Report 2023. III. Blueprint for the future monetary system: improving the old, enabling the new. URL: https://www.bis.org/publ/arpdf/ar2023e3.pdf (accessed on 22.11.2024).

[13] Cryptocurrencies: Trends, Risks, and Measures. Report for public consultation. Bank of Russia. 2022. P. 12. URL: http://www.cbr.ru/content/document/file/132241/consultation_paper_20012022.pdf (accessed on 10.10.2024).

[14] World Gold Council website. URL: https://www.gold.org/goldhub/gold-focus/2024/08/why-bitcoin-isnt-new-gold (accessed on 12.11.2024).

[15] World Gold Council website. URL: https://www.gold.org/goldhub/research/golds-long-term-expected-return (accessed on 12.11.2024).

[16] A gold swap is an operation between two central banks, one of which sells gold for the national currency of the other with a reverse transaction at an agreed-upon date in the future. However, there is no physical movement of the gold; only ownership of the gold is transferred during the swap period.

the proposed circumstances and the scientific and theoretical justification of the role and functions of international reserves in the existing and future international monetary and financial system, as its deep systemic crisis is no longer doubted by anyone. These are precisely the aspects that could be the subject of further research into the issue of international reserves.

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