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# The Financial and Monetary System: A Study on the Structure of the Financial and Monetary System in the World and Lessons for Vietnam

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**Abstract:**

The US-China trade war, the COVID-19 pandemic, and now the Russia-Ukraine conflict have led to a new consensus from developed economies that it is necessary to reduce interdependence... However, this process of lowering interdependence has led the world to rising inflation, labor shortages, rising protectionism, shocks to the global financial system,... Will this change the international monetary and financial system? The following article has analyzed the trend of globalization in the new context and its impacts on the World Monetary and Financial System, thereby recommending a trade scenario for Vietnam. The global monetary and financial system is undergoing drastic changes, as reflected in the increase in multi-currency trade activities and new technological platforms for cryptocurrencies. These are gradually becoming a challenge to the current monetary and financial system under the dominance of the US dollar (also known as the Petrodollar system). Looking back at the history of the global monetary and financial system, a new system will replace the current system to solve bottlenecks or inefficiencies over time. Recently, economists mentioned three significant vulnerabilities in the Petrodollar system, including a persistent US trade deficit, which causes long-term imbalances; the encouragement of mercantilism, thus stimulating the actions of currency manipulation by trading partners; assets and liabilities in countries outside the United States are denominated in dollars, leading to a more robust/weaker dollar, similar to quantitative tightening/easing in those countries, which means that these countries lose their independence in monetary policy. These vulnerabilities are being challenged by the US monetary and fiscal policy itself in the post-Covid period, as well as the rise of major economies. Therefore, perhaps it is time for the world to develop a new monetary and financial system to limit its inefficiency through self-regulation mechanisms or create an entirely new system to replace it. In our view, although there are no apparent signs of the collapse of the current system, there have been changes in the system's operation. On the one hand, these changes are manifested in the dollar's role in international trade, especially in the valuation of energy, which is gradually being replaced by other currencies; on the other hand, it is reflected in the shift from fiat currencies to cryptocurrencies. Cryptocurrencies are creating certain positive benefits in promoting international trade, but they also create considerable challenges in the monetary management role of central banks.

**Keywords:** Financial - monetary system, Petrodollar system, cryptocurrency.

## 1. Introduction

History The global monetary and financial system has permanently changed when the current system causes internal economic chaos. A global monetary and financial system can last for a long time but is not infinite. Over time, as the international center of power changes, as bottlenecks and inefficiencies in the system reveal themselves and increase to unsustainable levels, leading to rising levels of disorder, the current system is gradually or suddenly rearranged or replaced by another system.

Interestingly, the external factor is not the fundamental threat to the collapse of the existing order of the system but the vulnerabilities within the system itself, along with the system not being effectively controlled. Eventually, those vulnerabilities and inefficiencies accumulate enough to take down the system. Once that happens, there needs to be a realignment of the global monetary and financial system by the regime that created it or by a new government to replace it.

Today, the global monetary and financial system, dominated by the US dollar through the US-controlled Petrodollar monetary regime, is being challenged. In particular, China and Russia are the two central countries challenging the current system while trying to find a market share in global payments. Data from the Bank for International Settlements (BIS) and the International Monetary Fund (IMF) show that the dollar's share in global economic activity remains at 40-60%, unchanged since 2018. However, the yuan's share is still too small. However, such a trend will be problematic to maintain shortly.

Thanks to the control of the Petrodollar monetary and financial system for the past five decades, the United States has used the dollar as a tool to make itself an authoritarian government, to influence other economies, and to impoverish a large part of the country's population. This is leading to growing calls for the replacement of the USD-dominated International Monetary and Financial System with a new pluralistic order based on a combination of currencies, including the Euro, Sterling, Yen, Yuan, and Ruble; even digital currencies, in the context of the growing trend of digital currencies.

The digital currency and financial system are being built on two technology platforms: centralized and decentralized. Centralized platforms include the Chinese central bank's yuan digital currency, and decentralized platforms include Facebook's Libra/Diem. The value of digital currencies has now reached over $1.7 trillion. More importantly, what makes digital currencies valuable is the network they create.

These changes raise the question of today's global monetary and financial system and its future. This article will help clarify this question in part by redescribing the history of the Global Monetary and Financial System since the birth of the first official monetary system (the gold standard), thereby examining whether the current Monetary and Financial System has caused chaos within it that is large enough to be renewed. Structure, or replaced by another new system similar to what happened to the previous monetary regimes. Or is the latest system already in place to reshape international trade and investment?

The article's structure is as follows: Part 2 reviews the history of the global monetary and financial system. Then, it mentions the shortcomings of the current financial and monetary system. Part 3 analyzes the erosion of the Petrodollar system. Finally, the article opens the discussion question of what the next Monetary and Financial System will look like.

## 2. Overview of the global monetary and financial system

Instead of international trade and exchange rates operating in a mess, the Monetary and Financial System was born to help them operate according to a particular structure. Historically, great powers built and enforced the world's monetary and financial system and often existed for a certain period. In other words, at any given time, an empire or set of powerful nations cooperates together to establish a global order based on rules about how international trade works and how they are priced.

However, there is always the possibility of economic disorder in any system when the order of the system becomes chaotic. A global monetary and financial system can exist for a long time but not permanently. Over time, the international center of power changes, and bottlenecks or imperfections in the system develop unsustainable levels, leading to increasing levels of disorder. Ironically, the collapse of the existing order is often not due to external threats but because the principal vulnerabilities in the system are not controlled, which eventually expand large enough to bring it down.

At that time, the current system is gradually or suddenly rearranged into another system, or a new system is developed to replace it. The same ruling regime or a new alternative regime carries out this rearrangement or replacement. Typically, in the past 80 decades, the world has gone from the gold standard system, the Bretton Woods system, to the Petrodollar system. Each system reveals defects mainly from within, not from any external force, and every time one system switches to another, a significant and widespread devaluation of the currency occurs.

**2.1. Gold standard (before 1944)**

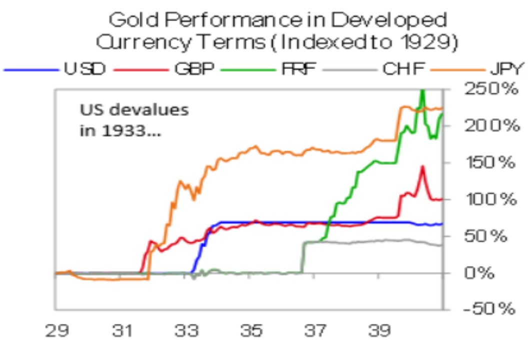
For much of human economic activity, economies are based on commercial activity. Fur was once used for oysters; olive oil was used in exchange for spices and labor for bread... Later, with the development of the mining of precious metals such as gold and silver, these metals became money. With precious metals, people can transform a specific commodity (such as fur, olive oil, etc.) into a commodity of a universal nature (such as gold and silver - materials that are rare, long-lasting, and can be divided into small measurable units), to buy anything later when one needs it.

Since then, paper money has been added as a more advantageous tool based on the amount of gold base. The gold can be kept safe in vaults, and the sheets representing that part of the gold can be used as a medium of exchange. Sometimes, these banknotes are issued by private banks, but more often, they are issued by governments. In this sense, governments will issue banknotes secured by gold stored in central bank vaults.

From that time, humanity witnessed an increase in global reserve currencies, referring to the paper money or precious metals of commercial or military empires such as the Roman Empire, the Netherlands, the United Kingdom, and the United States. In the late 1800s and early 1900s, the United Kingdom had a globally recognized currency, which existed in parallel with the system of many other currencies secured by gold.

According to the gold standard system, when a country begins to trade in surplus continuously, gold flows out of the country, and there is a risk of economic stagnation. Eventually, however, the situation will usually self-correct, as a recession will devalue their currency, making the country's exports more competitive and imports more expensive, so their trade balance is readjusted. At the end of the system's existence, all significant countries sharply devalued their currencies and reset the amount of gold converted. Figure 1 shows the substantial currency devaluation by countries.

**Figure 1: Change in the value of major currencies against gold (%) (fixed in 1929)**




Source: Bullionstar, "It is Time to Look More Carefully at "Monetary Policy 3 (MP3)" and "Modern Monetary Theory (MMT),

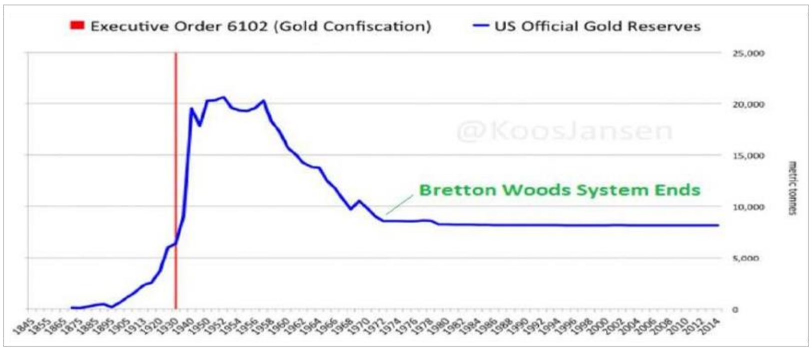
**2.2. Bretton Woods System (1944-1971)**

In the 1930s, the U.S. government made it illegal to own gold and forced people to sell it to the government. At the same time, the U.S. benefited from the trade surplus after the two world wars, thereby helping the U.S. increase the value of its reserves. Meanwhile, allies and war-torn nations chose the U.S. as a safe place to store gold. At that time, the Bretton Woods system was founded. The system works like this: The U.S. guarantees the dollar in gold, and many other countries peg their currencies to dollars. Many countries hold U.S. Treasury bonds as collateral with "good reserves" similar to gold reserves. The dollar is not (not allowed) to be converted into gold by the American people, but it is converted into gold by foreign governments.

The United States has achieved a peg in the Global Monetary and Financial System with the Bretton Woods system. The currencies of previous empires did not have that advantage, so they could not be valid "global reserves" but only "widely recognized and dominant" currencies.

However, after only a decade (around 1955), the Bretton Woods system began to crack. The US started to have a large fiscal deficit and experienced a slight increase in inflation. The U.S. started to see its gold reserves shrink (Figure 2), and as other countries started to doubt the dollar's security, they began exchanging dollars for gold instead of holding the dollar with peace of mind.

**Figure 2**: **Chart of US gold reserves (tons)**



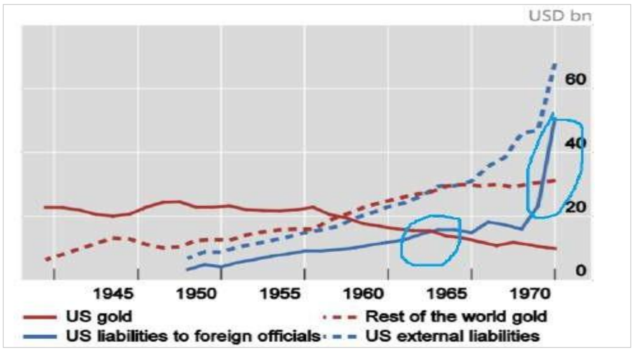

Source: Bullionstar, at https://static.bullionstar.com/blogs/uploads/2015/02/US-Official-Gold-Reserves.png

The figures in Figure 3 show that the Monetary and Financial System has shown signs of instability since its inception. The United States joins the system with more gold holdings than foreign debt. However, that gap quickly began to narrow in the first few years.

By the late 1950s, America's external liabilities exceeded its gold reserves. By the mid-1960s, the total external debt of the United States to foreign governments exceeded its existing gold reserves, which was the crossover point that troubled the system and finally collapsed in 1971.

The system has a fundamental flaw that has not been addressed, making it less sustainable than designed. There is no way for the U.S. to maintain enough gold to secure its currency for domestic use while at the same time guaranteeing enough to expand its use on a global scale. Robert Triffin (1959, 1960) warned Congress and the business community about this problem, calling Triffin's dilemma. Triffin pointed out that in countries whose currencies serve as global reserves, the rest of the world wants to hold that currency, so countries with reserve currencies must be willing to supply large amounts of money to the world to meet the demand for foreign exchange reserves. Leading to a persistent deficit in the country's trade balance with global reserve currencies.

**Figure 3: Liabilities to Foreign Organizations and U.S. Gold Reserves ($ billion), 1944-1971**




Source: "Triffin: dilemma or myth?", BIS Working Papers No 684, tại https://www.bis.org/publ/work684.pdf

John Keynes (1943) also saw the problem before it happened and proposed an alternative system called Bancor. This is an inherently more balanced system, with a neutral settlement mechanism instead of focusing everything on the currency of a single country. However, the Bretton Woods system prevailed. The Bancor idea was only implemented by the IMF later, in 1969, as SDR (Special et al.).

Finally 1971, President Nixon ended the USD's convertibility to gold, thus ending the Bretton Woods system. All major currencies, including the dollar, have been severely depreciated against gold.

**2.4. Petrodollar system (from 1974 to the present)**

Starting in 1971, after the breakdown of the Bretton Woods system, all currencies became fiat currencies, and the global monetary and financial system became less orderly. Fiat currency is a financial system whereby the currency has no intrinsic value, just paper sheets, cheap metal coins, or digital bits of information. So why are they valuable? The answer is simply because the government claims it has value (as indicated by its name – fiat money), and it is the currency required to be used in payment activities, including in paying taxes.

A fiat currency may encounter problems when trying to use it outside the borders of the issuing country. Why do businesses and governments accept paper samples issued by foreign governments that the issuer can print continuously but without any guarantee as a means of payment for their valuable goods and services? If there is no guarantee, what is it worth? Why would you sell oil to foreigners to get back the papers without guaranteeing anything?

In the early 1970s, many geopolitical conflicts occurred, including the Yom Kippur War and the OPEC oil embargo. However, in 1974, the United States and Saudi Arabia reached an agreement (Nakhleh, 1975), from which the Petrodollar system was born. This is considered a smart way to make the global fiat monetary and financial system operate more orderly and efficiently.

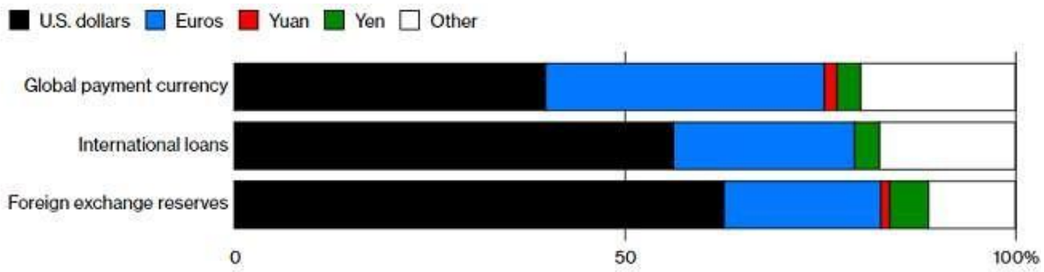
With the Petrodollar system, Saudi Arabia (and other OPEC countries) price and sell their oil in dollars in return for the protection and cooperation of the United States (Nunan, 2004). Any country that wants oil needs to be able to earn USD to pay. So, even though the dollar is purely foreign paper, non-oil-producing countries also have to sell many of their exports in dollars to have enough dollars to buy oil from oil-producing countries. All of these countries also hoard surplus dollars as foreign exchange reserves and simultaneously invest in reserves in US Treasury bonds to earn some interest.

In return, the U.S. uses its navy to protect global shipping routes, preserving the geopolitical status quo with military action or threats when necessary. In addition, the U.S. must have a persistent trade deficit with the rest of the world to have enough dollars to put into the international system. However, many of those dollars are returned to buy US Treasury bonds and are stored as foreign exchange reserves. This means that most of the federal budget deficit is financed by foreign governments, while other developed countries rely heavily on domestic funding.

This results in a disproportionate volume of global trade in dollars compared to the size of the U.S. economy, meaning that the dollar is backed by oil but not pegged to oil at a specific rate.

Figure 4 shows that, although the U.S. only represented about 11 percent of global trade and 24 percent of global GDP at the beginning of 2018, the dollar's share of global economic activity is much higher, at 40-60 percent depending on how much it is used for international payments, international loans, etc. or foreign exchange reserves. Moreover, this gap shows the dollar's position as a global reserve currency and an essential currency for global energy pricing.

**Figure 4**: The **position of the USD in international trade and reserves (%)**




Source: Bloomberg, Data: Bank for International Settlements, International Monetary Fund, Society for Worldwide Interbank Financial Telecommunication, and European Central Bank calculations.

**2.5. Globalization trends in the new context**

Since ancient times, humans have been looking for distant places to settle, produce, and exchange goods thanks to improvements in technology and transportation. However, it was not until the 19th century that global integration developed. After centuries of European colonization and trade, that first wave of globalization was fueled by the advent of steamships, railways, the telegraph, and many other breakthroughs, as well as by methods of increasing economic cooperation between countries. However, that trend toward globalization eventually weakened and collapsed during World War I, followed by *post-war protectionism*, the Great Depression, and World War II. After World War II in the mid-1940s, the United States led efforts to recover international trade and investment under negotiated ground rules. Western elites believe that trade is beneficial to peace and vice versa. Franklin Roosevelt's secretary of state, Cordell Hull, was convinced that reducing tariffs and increasing international trade would help lay the foundations for peace. The EU is also an economic and political project. Its origins lie in the European Coal and Steel Community, founded in 1952 to make French and German industries so interdependent that another European war could never have happened. From the 1960s, Germany implemented a policy of looking east by normalizing economic relations, and then Russian gas began flowing to Germany in 1973.

Thereby, globalization has promoted growth and certain economic progress. Table 1 shows that the trend of globalization has promoted the growth and economic openness of the G7 countries in their role in leading the globalization process. This globalization has been declining since the 2007-2008 global financial crisis. The share of trade in world GDP began to decline after 2007, as China's export-to-GDP ratio plummeted by 16 percentage points. In 2007, China's export-to-GDP ratio was 35.43% and has fallen to 18.5% in 2020. Global value chains have stopped expanding and are now shifting between countries.

**Table 1: Trade openness and GDP of G7 countries (Exports plus imports/GDP)**

| Country | Exports (billion USD) | | | Trade openness | | Economic growth (billion USD) | | |
|---|---|---|---|---|---|---|---|---|
| | 1990 | 2020 | Proportion | 1990 | 2020 | 1990 | 2020 | Proportion |
| Canada | 149,46 | 476,04 | 219% | 50,18 | 59,91 | 593,93 | 1.645,42 | 177% |
| Brother | 252,31 | 770,48 | 205% | 47,98 | 55,64 | 1.093,17 | 2.759,8 | 152% |
| Germany | 404,58 | 1.669,99 | 313% | 45,86 | 81,11 | 1.771,67 | 3.846,41 | 117% |
| France | 266,22 | 733,17 | 175% | 42,74 | 57,77 | 1.269,18 | 2.630,32 | 107% |
| Italy | 215,68 | 555,04 | 157% | 36,32 | 55,09 | 1.181,22 | 1.888,71 | 60% |
| America | 551,87 | 2123,41 | 285% | 19,82 | 23,38 | 5.963,14 | 20.953,03 | 251% |
| Sun | 320,17 | 785,37 | 145% | 19,66 | 31,38 | 3.132,82 | 5.057,76 | 61% |

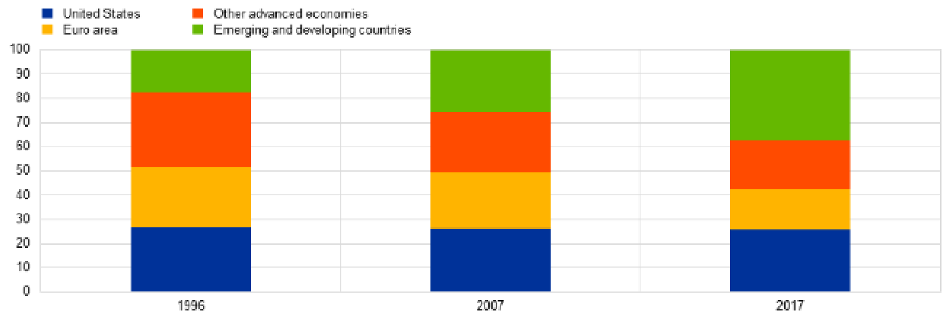
Source*: The World Bank (2020)*

However, the global era of chemotherapy ended when the world faced the COVID-19 epidemic and the war between Russia and Ukraine. Currently, global trade is pushed to a secondary position, and national goals are pushed to the top of the list, especially in terms of public health and national security. The goal of globalization is to implement a principle of a country's comparative advantage in order to specialize the production process. However, the development of globalization creates another principle to promote a country's economic growth by promoting the economy to produce what the wealthier countries demand. The result is a conflict between policy intervention, promoting successful economic growth, and principles of international trade *(Dani Rodrik, 2017).* Today, with the rise of China as a geopolitical rival and the Russia-Ukraine conflict, the U.S. strategic competition over national security interests over international economic cooperation interests. This puts global trade under two scenarios: (1) the worst and less expected scenario of the 1930s when a country/group of countries withdrew from production; (2) A scenario for a less dire possibility is that geopolitical supremacy is maintained, i.e., trade wars and economic sanctions will become a prominent feature of global trade and finance.

**World monetary and financial system**

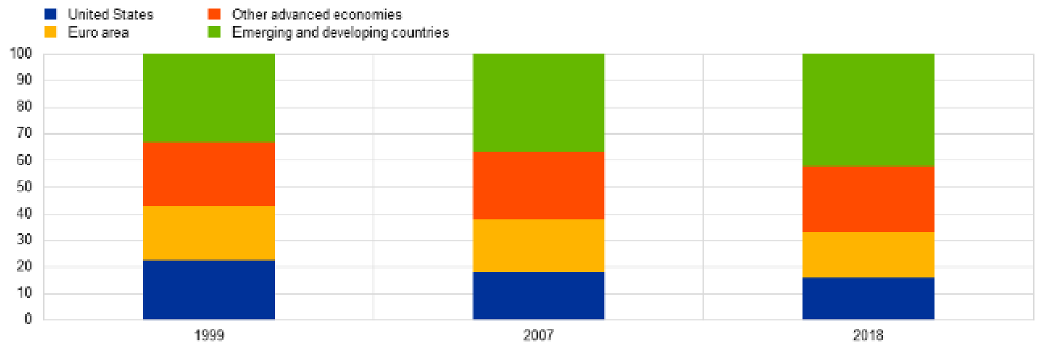
Globalization has fundamentally reshaped how advanced economies (including the Eurozone and the United States) operate. The remaining countries are the main destinations for producing and designing goods and services, providing a diverse selection of imported goods for domestic manufacturers and consumers. At the same time, the financial systems of developed economies have been transformed through global financial flows. Meanwhile, a fundamental shift in global economic growth has emerged from the increasing contribution of emerging and developing economies (Figure 1). This means that the contribution of these economies has also increased in global trade (figure 2).

**Figure 5: Contribution to global economic growth**




Source*: IMF World Development Indicators and Haver Analytics*

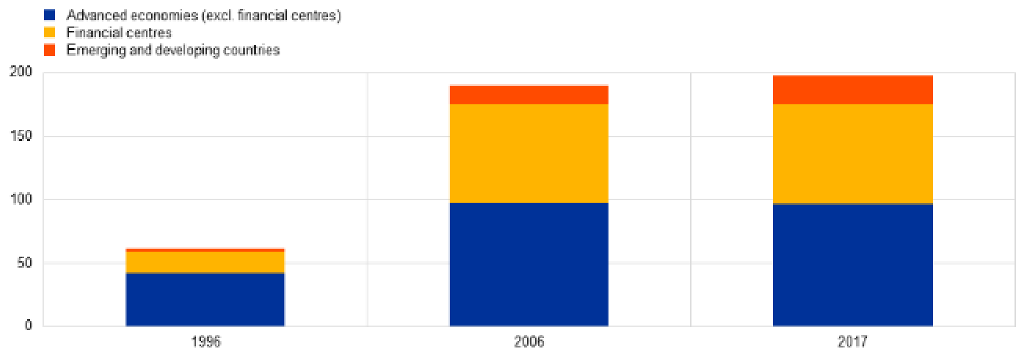
**Figure 6: Percentage of imported goods in USD**




Source*: IMF World Development Indicators, IMF World Economic Outlook and Haver Analytics*

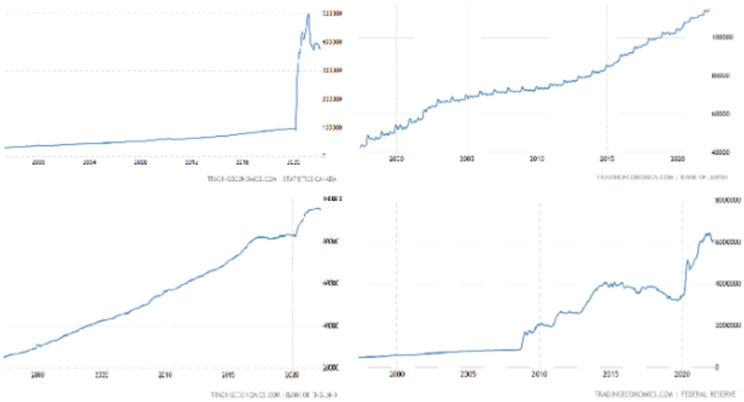
The expansion of international trade has been accompanied by an increase in external assets relative to global GDP (figure 3), which shows the interest of developed economies in promoting global trade to expand the money supply. The increase in international trade and investment has led to a concentration in certain currencies. The US dollar still plays a leading role; the euro ranks second. That is also why the United States and Western countries use this dominance to impose sanctions. The increasing sanctions imposed through this monetary payment system have prompted countries worldwide to set up different payment systems to circumvent these sanctions. Some bilateral payment countries use each other's currencies or set up payment systems that replace the SWIFT system, such as China's CIPS system.

**Figure 7: Development of external assets in global economic growth**



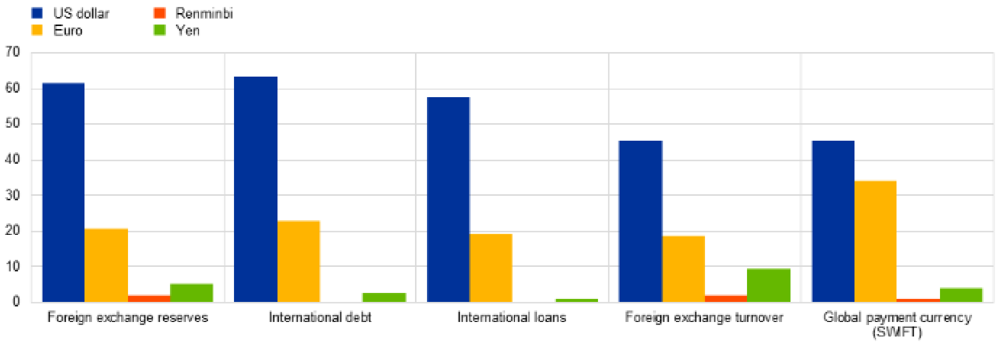

Source*: External Wealth of Nations database (Lane and Milesi-Ferretti) and ECB staff calculations*

**Figure 8: M0 money supply of some countries**



Source*: Trading Economics*

**Figure 9: International monetary and financial system**




Source*: BIS, CLS Bank International, IMF, SWIFT, and ECB calculations. See also ECB (2019)*

**Table 2: Economic growth and M2 money supply growth of G7 countries**

| **Country** | **M2: Q1 1999/Q4 2021** | **GDP: Q1 1999/Q4 2021** |
|---|---|---|
| Canada | 406% | 152% |
| Brother | 373% | 133% |
| Germany | 189% | 80% |
| France | 335% | 85% |
| Italy | 250% | 56% |
| America | 382% | 155% |
| Sun | 33% | 2% |

Source*: Thomson Reuters datastream*

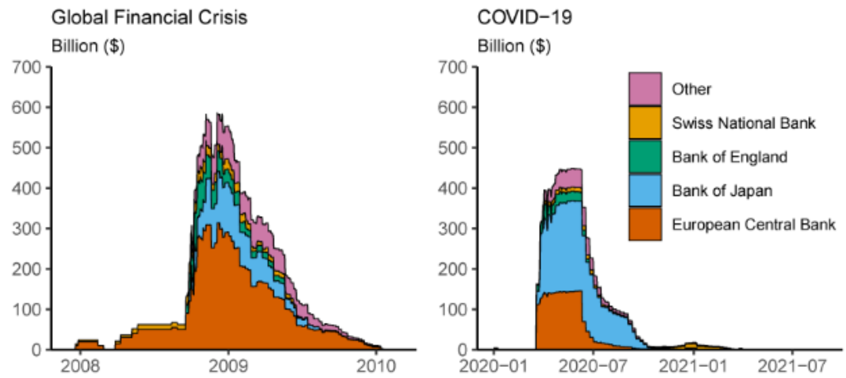
Thus, the challenges to the current financial and monetary system still exist and are increasing as developed countries continuously impose sanctions. But have these challenges been significant enough for the U.S. dollar-based monetary system to lose its role?

Today's world is undergoing many rapid changes from the leading role of developed economies in globalization, the rise of China, the intensity of imposing sanctions in the current financial and monetary system increasing... Will countries' confidence in global trade and investment decline in the current dollar-based monetary and financial system?

From Paul Krugman's point of view, the use of the monetary and financial system by countries participating in international trade needs to be approached in two aspects: size and thickness of the market (Paul Krugman, 1980). While the monetary and financial system has become weaponized before the Russia-Ukraine conflict, China and Saudi Arabia are becoming concerned about joining the SWIFT system. Zhou Xiaochuan (former governor of the People's Bank of China) spoke about China's risks and called for increased use of the yuan globally through the CIPS system. However, as a result, the transaction value was only 1% compared to SWIFT.

A monetary and financial system of choice in international payments requires meeting the high demand for financing in times of crisis for international financial institutions. The US Federal Reserve has launched two programs to respond to the stresses of the shortage of payment currency: the 2008-2009 crisis and the Covid-19 crisis in March 2020 (Carol et al., 2021). These transaction flows are enormous, worth \$585 billion during the 2008-2009 crisis and \$450 billion during the Covid-19 period. Meanwhile, the Euro is also widely used in international payments but is not widely used interchangeably with currencies other than the US dollar. Thus, the use of the dollar as a "means" rather than in the role of direct payments between countries, as China calls for.

**Figure 10: Currency swap flow through the Fed banking system**




Source*: Federal Reserve Bank of New York; European Central Bank*

Gita Gopinath and Jeremy Stein described another round of feedback regarding valuation (Gita et al., 2021). Since many commodities are priced in US dollars, US dollar assets have relatively predictable purchasing power. This strengthens the demand for these assets, thus making borrowing in dollars somewhat cheaper than other currencies. Cheap U.S. dollar loans, in turn, incentivize businesses to limit debt risk through product pricing in U.S. dollars, again reinforcing the U.S. dollar's advantage.

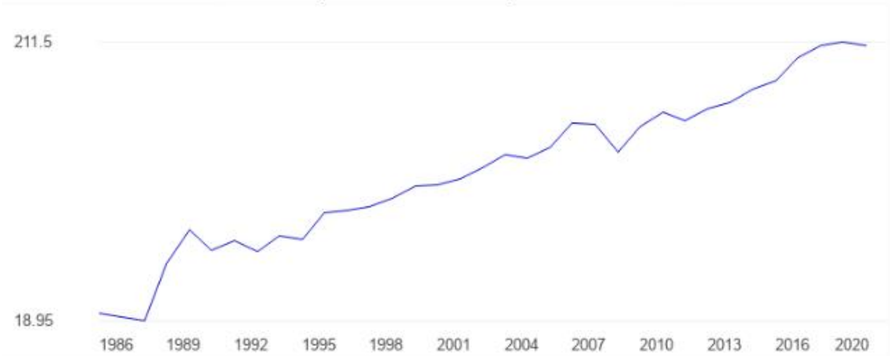
A third important issue in choosing a currency for international payments is the extent to which the debt market for that currency has developed. When the euro was born, it facilitated the development of a competitive debt market with the United States. However, after the debt crisis, due to concerns about default, the yield of euro bonds issued by European governments became divergent. This means there is no longer a euro bond market to compete with the US (Paul Krugman, 2022).

Meanwhile, how will this currency be administered if countries and international financial institutions use the yuan in international payments? If, in the way that economists often refer to the role of a currency based on its three functions, does the yuan meet the role of an international currency? If you judge by Paul Krugman's two criteria, the yuan is also not eligible. Therefore, from the author's point of view, even if there are many challenges to the current monetary and financial system, the US dollar cannot be replaced in the coming years, but the currency story can also be mentioned.

**Vietnam in economic development**

The first scenario in global trade would create substantial economic losses in which the major countries were in control of the situation in managing conflicts, and Vietnam should think about a second scenario in which Vietnam should strike a balance between its national interests and the demands of globalization. This means that Vietnam takes advantage of the shift in the supply chain to attract investment and promote the economic growth model from export activities to producing products according to the needs of developed economies. With this strategy, there will inevitably be adverse impacts from global trade activities imposed by significant economies. Managing these relationships with major countries in global trade is crucial in market diversification. Therefore, the first step must be to balance international trade between economies to avoid the damage caused by unilateral sanctions.

**Figure 11: The openness of Vietnam's economy 1986-2020**



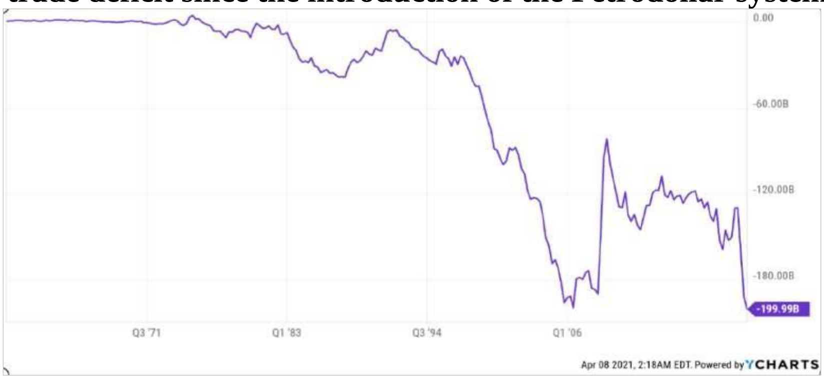

Source*: The World Bank (2020)*

### 3. Shortcomings of the current global financial and monetary system

### 3.1. Persistent US trade deficit

The inherent vulnerability of the Petrodollar system is the same as the inherent vulnerability of the Bretton Woods system; the US must maintain a persistent trade deficit, especially since the level of trade deficit of the US in the past two decades is enormous. However, the U.S. trade deficit cannot last long; in other words, it can last for decades but not indefinitely.

**Figure 12: US trade deficit since the introduction of the Petrodollar system (billion USD)**




Source: US balance on goods and services (quarterly). https://ycharts.com/indicators/us_balance_on_goods_and_services_quarterly

Theoretically, when a country has a trade deficit, it must devalue its currency large enough for exports to become more competitive and imports to become more expensive. However, because the Petrodollar system creates consistently high international demand for the dollar, the U.S. trade deficit is never adjusted and self-balanced. The trade deficit is maintained continuously by the structure of the Global Monetary and Financial System, which creates permanent imbalances and, eventually, after a long enough time, erodes the system (Charlotte & Larry, 2003).

Meanwhile, the US trade deficit has also benefited from trade surpluses for many countries. Japan had a trade surplus throughout the 1980s and 1990s. Germany also had a trade surplus in the late 1990s and 2000s, especially when the euro was introduced, Germany's trade surplus increased. In the late 2000s and 2010s, China also achieved a large trade surplus. Countries with trade surpluses directly or indirectly from the U.S. have had the opportunity to internationalize their paper money. Japan uses foreign exchange reserves from the dollar to support the yen, which has joined the list of internationally settled currencies. Meanwhile, Germany uses foreign exchange reserves from the dollar to invest and lend to European countries. As a result, Germany became the most influential country in the bloc. After nearly ten years of trade surplus, China has used its foreign exchange reserves to lend money to build the Silk Road, which is one of the ways for China to dominate other countries.

The purpose of countries with trade surpluses is to internationalize their currencies. The problem is that these currencies are also based on the reserves obtained from the dollar. This means that the USD is still a guaranteed currency for another currency to initiate currency internationalization and participate in the Global Monetary and Financial System.

### 3.2. Creating incentives for currency manipulation in other countries

Another flaw in the Petrodollar system is that it encourages mercantilism. This means that the monetary and financial system encourages various trading partners to maximize exports while minimizing imports by manipulating their currencies to a sufficiently weak level. Due to the currencies of countries with floating exchange rates, many countries try to keep their currencies weak to have a positive trade balance with the United States and other trading partners. Of course, they don't want their currency to be so weak that their citizens can't import goods, but they want their currency to be weak enough for their country's exports to be competitive and their import power not strong to adjust their trade surplus. This allows a country to quickly build industrial production and accumulate USD and foreign exchange reserves. The U.S. has essentially been excluded from this option as the global reserve currency, with a persistent trade deficit.

Because the exchange rate has been freely floating since 1971 in the dollar system, the currency can strengthen or weaken against other currencies significantly, and other currency pairs can strengthen or weaken against each other. The dollar has had two sharp depreciations of up to 40% against a basket of other major currencies in the current monetary and financial system. However, this decline has not lost its role as a global reserve currency. Being a depreciating dollar in the Petrodollar system does not mean the end of a monetary and financial system. Figure 6 shows the USD index from the early 1970s when the Petrodollar system began. The chart shows the three primary cycles the USD index has gone through.

### 3.3. Reducing the monetary policy independence of countries around the world

The third problem is that today's financial and monetary system has impacted the monetary independence of countries when almost the entire system has been firmly anchored to the US dollar (there are about 40 trillion USD of nominal debt in this currency). Governments and organizations outside the United States also have $13 trillion worth of dollar-denominated debt and many dollar-denominated assets worth $42 trillion (data from the BIS, IMF, and US BEA). These debts and assets have accumulated over decades due to these countries' trade surpluses with the United States. Dollar-denominated debts represent a stable demand for USD for payment. Therefore, when there is an economic recession or global trade in dollars slows, there is a possibility of a shortage of dollars outside the United States. This happened in March 2020 when the Covid-19 pandemic sharply reduced global trade and oil prices declined. As such, the dollar is backed by oil, trade, and debt in dollars, and it's a powerful interlocking network effect.

When the dollar is strong relative to the local currency in emerging markets, it will serve as quantitative tightening for that country, as the dollar-denominated liabilities in that country's currency will increase relative to their assets and cash flows. This can be extremely serious during periods of economic downturn. Conversely, when the dollar is weak, it will act as a form of quantitative easing. This creates a dependence on countries' monetary policy on the United States.

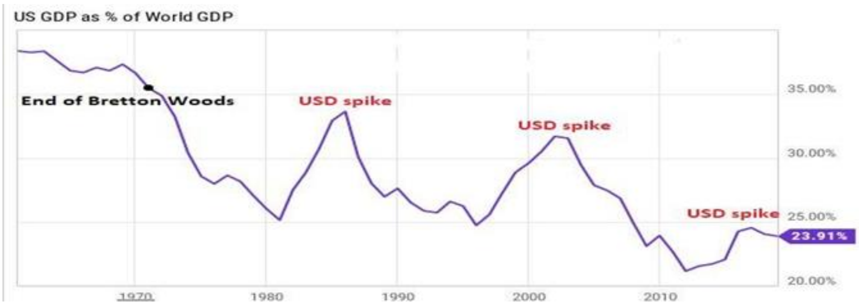
### 3.4. Erosion of the Petrodollar system

The dollar's role in the current Petrodollar system faces a decline as a global reserve currency.

**Shrinking the share of global GDP in the United States**

After World War II, the United States accounted for more than 40% of global GDP. By the time the Bretton woods system ended and the Petrodollar system began, the U.S. still accounted for 35 percent of global GDP. Since then, US GDP has fallen to only 20-25% of global GDP.

**Figure 14: Proportion of U.S. GDP to global (%)**




Source: US GDP as % of World GDP, in https://ycharts.com/indicators/us_gdp_as_a_percentage_of_world_gdp

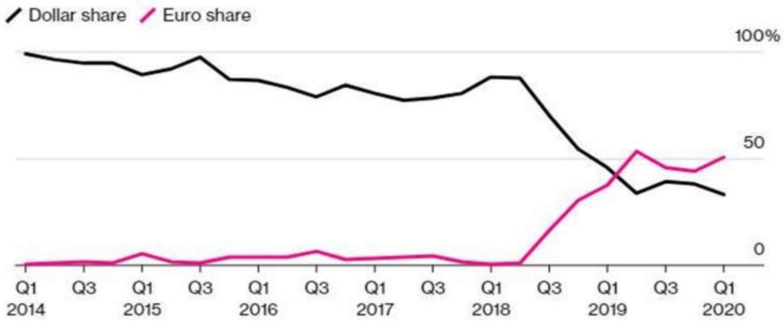
It's nominal GDP (i.e., denominated in USD), so it's partly tied to the dollar's strength. If the dollar has another downward cycle, this number could drop to 20%. Based on purchasing power parity, the U.S. accounts for only 15 percent of global GDP. That's still pretty good for a country with 4% of the world's population, but it's not enough to maintain the Petrodollar system indefinitely.

The global energy market, and more broadly, international trade, is now too large to be priced primarily in the currency of a single country, especially the country that accounts for a small share of global GDP. Imagine if the whole world tried to price energy in Swiss francs alone; simply not enough money. The Petrodollar system is not at this extreme because the United States is much larger than Switzerland. But the problem is that as the U.S. economy accounts for a smaller and smaller share of global GDP over time, it becomes even more impossible to supply enough dollars to the world to price all energy in dollars.

No country or group of currencies is big enough to do it alone. Neither the United States, China, the European Union, or Japan. The United States has been able to do that for decades after World War II. However, as the world grows and becomes more multipolar over time, no single country represents a monopoly share of global GDP as the United States once did, and the global monetary and financial system requires more decentralization to function effectively.

**Multi-currency international trade**

**Figure 15**: **Today, China pays Russian exports more euros than dollars**




Source: Central Bank of Russia

Six years ago, Russia's exports to China were based on 98 percent in dollars. As of early 2020, the rate was only 33% based on the USD, 50% based on the Euro, and 17% in their currency. Significantly, Russia's exports rely heavily on energy and commodities, which are at the heart of the Petrodollar system.

Similarly, Russia's exports to Europe are also increasingly using the euro. Six years ago, Russia's exports to Europe were 69% in dollars and 18% in euros. They are based on 44% of the dollar and 43% of the euro. That is also why the United States has consistently opposed and hindered the Nord Stream 2 project. In addition, in 2019, Russia achieved the same result as India, whereby India agreed not to use the dollar in huge defense deals with Russia, resulting in a significant decline. Russia's exports to India in dollars accounted for only 20% of the almost absolute level in previous years.

However, as major powers such as China, Russia, and India begin to price things outside the dollar-based system and use their currencies for trade, including energy, in some cases, the United States cannot intervene militarily. Instead, it can only intervene through sanctions, trade disputes, or geopolitical pressure.

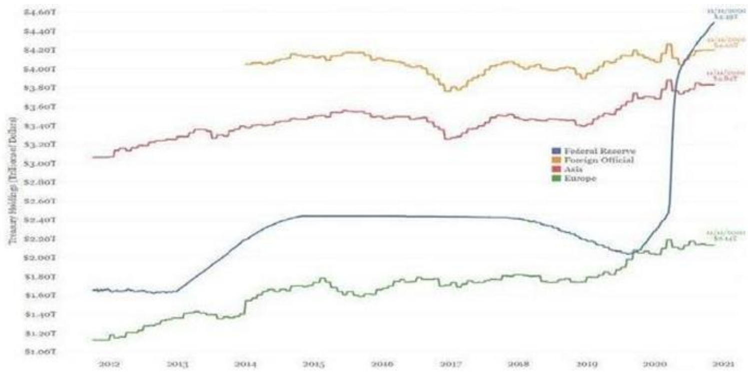
Perhaps the most recent threat is US sanctions against companies involved in the Nord Stream 2 pipeline from Russia to Germany. If the pipeline is completed, it will strengthen Russia's gas supply system to Europe. The executive and the U.S. legislature seem very interested in the project. Another good example is the U.S. sanctions on Iran. At the same time, Europe, India, and China all have trade relations with Iran; these countries are all major energy importers, while Iran is an energy producer.

Europe created INSTEX (The Instrument in Support of Trade Exchanges) in 2019, a dedicated means of circumventing U.S. sanctions on Iran. This means creating more favorable conditions for trading outside the SWIFT (The Society of Worldwide Interbank Financial Telecommunication) and USD systems. INSTEX has been successfully tested but has not yet been used. Similarly, India has long had trade relations with Iran despite the two countries' religious/cultural differences, which often cause problems between India and neighboring Pakistan and territorial disputes in Kashmir. However, the Iran-India trade partnership was limited in 2020 due to a combination of US sanctions and the outbreak of COVID-19. China also has several strategic energy partnerships and trade agreements with Iran, but U.S. sanctions and the COVID-19 pandemic have significantly affected the trade situation between them.

**America holds its bonds.**

The next anomaly is that the United States seems to be holding on to its debts. Figure 10 shows that, as of 2021, the US Federal Reserve (Fed) owns more Treasury bonds than all foreign central banks combined. This is not the usual way the currency acts as a "global reserve." This case is likened to a restaurant chef eating more dishes cooked by himself than diners. Within a year, the Fed has sharply increased its holdings of U.S. Treasury bonds, from about half the value of Treasury bonds held by foreign central banks combined to even more than that number.

**Figure 16**: **Global value of US Treasury bond holdings (billion USD)**




Source: Bianco Research

As previously described, countries can only continue to buy Treasury bonds if the liquidity conditions of the global dollar remain good. A strong dollar will limit foreign accumulation in Treasury bonds and any impact on trade. The pandemic and related disruptions to economic activity that reduced oil demand and import and export volumes, for example, threatened that entire system.

**Increasing budget deficit and public debt after Covid-19**

COVID-19 may contribute to further eroding the consequences of the prolonged Petrodollar system. The sudden outbreak of COVID-19 has affected the whole world with observable economic impacts through financial market turmoil, increased unemployed labor and unemployment insurance claims, and the closure of many shops and businesses. COVID-19 reduced tax revenues for the budget as many businesses scaled back, economic growth slowed, and the government's burden on the healthcare system increased significantly. At this time, there will be a greater demand for fiscal stimulus packages from the US government to help promote economic recovery so that the budget deficit will spike in the short term.

The US House of Representatives approved the $1.9 trillion bailout package on March 11, 2021, one of the second largest relief packages in decades, expected to help the United States promote economic growth—however, the larger the bailout package, the higher the US public debt. The projected budget deficit 2020 before the Covid-19 outbreak was $1,083 billion, about 4.8% of GDP. However, Covid has pushed the deficit to a record high rate, to about 3,700 billion USD (17.8% of GDP). In 2021, the estimated deficit for the pandemic scenario was less than $1,000 billion, but the epidemic brought the deficit forecast to $2,100 billion. Although the $1.9 trillion rescue plan is expected to boost the economy, credit rating agency Fitch Ratings said that the large scale of this rescue package shows a delay in returning to a fiscal stance in line with keeping the government debt ratio stable. As a result, the outlook for debt stabilization is even worse than when Fitch rated US sovereign debt 'AAA' in its Negative Outlook report in July 2020.

US government debt increased by approximately $4 trillion - from $21.5 billion at the end of 2018 to 26.4 at the end of the second quarter of 2020, not to mention the vast bailout package recently passed. The debt-to-GDP ratio also increased sharply, reaching 136% at the end of the second quarter of 2020 due to the worsening budget deficit. The IMF warned that borrowing more could lead to economic and financial instability.

Post-Covid is accelerating the accumulation of US government debt. When debt becomes high, and the Fed cannot provide liquidity to the market, it is time for foreign investors to reduce their demand for US Treasury bonds. This could put downward pressure on the dollar. When the dollar depreciated, foreign investors received a currency of less value in return, causing demand for US Treasury bonds to continue to fall. By then, the U.S. will likely have to accept higher interest rate borrowing to keep investors from leaving U.S. Treasury securities. Will such a scenario occur when the US is different from other countries, that is, the US dollar is still dominating international payments and reserves? Is a particular digital currency the solution to reducing dependence on the US dollar as it is today?

## 4. Lessons for the development of the financial and monetary system in Vietnam

Vietnam's currency market was formed in the 90s of the twentieth century, and Vietnam's banking industry was powerfully transformed from a single-tier banking system to a two-tier one. Up to now, Vietnam's currency market has gradually developed from simple lending transactions between banks from simple goods to a small number of members. The currency market has grown in scale and sales, and the infrastructure for market activities is increasingly complete... Therefore, the money market has become an effective monetary policy transmission channel of the State Bank (the State Bank) and a place to regulate short-term capital among credit institutions. Up to now, it can be said that the currency market has initially formed synchronously with the market components. Although not developed long, Vietnam's currency market has formed relatively synchronously. The market's financial instruments have been relatively fully formed, such as bills and government bonds, State Bank bills, certificates of deposit, corporate bonds, and local government bonds. The market members are increasingly numerous and diverse in terms of types and professionalism.

The State Bank participates in the money market as a market member and a regulatory agency. As a market member, the State Bank participates in the money market by issuing State Bank bills and purchasing and selling valuable papers with credit institutions through open market operations. As a management agency, the State Bank promulgates the legal framework for the operation of the money market and monitors, supervises, and controls the operation of the money market to serve the objectives of administering the national monetary policy. Within the scope of this article, we would like to review the main activities of the State Bank in the role of operating and managing the money market in recent years, specifically:

***Developing a legal framework for the operation of the money market***

Since the formation of the money market, the State Bank has focused on the organization and administration of the market; a series of legal documents have been promulgated, specifically regulating each type of operation, such as Directive No. 07/CT-NH1 dated October 7, 1992, Decision No. 132/QD-NH14 dated 10/07/1993 on the establishment of the interbank market, Decision No. 114/QD-NH14 on the Regulation on organization and operation of the interbank market, Decision No. 190/QD-NH14 dated 6/10/1993 amending and supplementing several contents of the Regulation on organization and operation of the interbank market. These are the first legal documents issued by the State Bank, the primary legal corridor to create and form a market for credit relations between credit institutions. At this stage, the interbank market is still in its infancy because credit institutions are unfamiliar with this form of transaction and do not have mutual trust, so credit relations between credit institutions hardly arise or have to go through the intermediary of the State Bank. However, after less than ten years of operation, from a small number of members with not much operating sales, the market has made great strides in terms of the number of members participating in the market and transaction sales. The information emitted from the market has become an important signal, relatively clearly reflecting the liquidity situation of members in the interbank market, which is the basis for the State Bank to make appropriate policy decisions.

In order to build a legal framework for the interbank money market through the operation of credit institutions in the new conditions and meet the management requirements of the State Bank, on October 15, 2001, the State Bank promulgated the Regulation on loans between credit institutions enclosed with Decision No. 1310/2001/QD-State Bank replacing normative documents the law regulates the loan market between credit institutions on those mentioned above interbank. The regulation of borrowing between credit institutions with open regulations has given credit institutions autonomy in mutual loan relations, creating conditions for the interbank market to develop vigorously and vibrantly.

From 2001 to the end of 2011, along with the economic integration and development of the country, Vietnam's currency market in general and the lending and deposit market among credit institutions have undergone many changes associated with significant changes in the domestic and world economy. In 2012, the market was marked by a turning point by Circular 21/2012/TT-State Bank dated 18/6/2012, regulating lending, borrowing, buying, and selling valuable papers between credit institutions and foreign bank branches. Accordingly, Circular 21/2012/TT-State Bank only allows credit institutions and foreign bank branches to transact with each other with a transaction term of less than one year. These are new, stricter regulations, in line with the nature of short-term capital transactions in the interbank money market and the Law on Credit Institutions 2010 provisions to manage interbank activities safely and effectively. After Circular 21/2012/TT-State Bank took effect, the market had inevitable fluctuations, but the market has operated stably.

In fact, since its inception, the transaction scale of the interbank market has been increasing, and the market is getting closer to international practices. The interbank lending and deposit market's activities have grown markedly over the years. In 2000, when the new interbank market was initially formed, the total turnover of loans and deposits between credit institutions in the interbank market was only about 280 billion VND. However, by 2005, this figure had reached 760 trillion VND, 2.7 thousand times higher than its initial formation stage. In 2011, the total transaction turnover of the whole market reached 6,896 trillion VND, an increase of 1,860 trillion VND compared to sales in 2010, which was nine times higher than the data 2005. In the first ten months of 2012, loans and mutual deposit turnover between credit institutions and foreign bank branches reached VND 5,354 trillion. That proves the interbank market's vital role in meeting the banking system's liquidity and short-term capital needs.

Along with the process of completing the legal corridor of interbank lending activities, the legal corridor for the operation of the market for buying and selling valuable papers has also been gradually completed. The first legal documents marking the birth of the primary market were promulgated by the State Bank, such as the Regulation on the issuance of State Bank bills enclosed with Decision No. 211/QD-NH1 dated September 22, 1994, the Regulation on Bidding of Treasury Bills at the State Bank issued together with Decision No. 61/QD-State Bank No. 19 dated March 8, 1995. the first legal authority for developing the secondary market is the Regulation on the organization and operation of the bill purchase and resale market, enclosed with Decision No. 76/QD-NH14 of March 18, 1995. In order to meet the requirements of management and development of the market, especially the secondary market, since the 2000s, the State Bank has issued a series of legal documents such as Decision No. 1325/2004/QD-State Bank dated 15/10/2004 on the promulgation of the Regulation on discounts, rediscount valuable papers of credit institutions to customers. For the purchase and sale of valuable papers between credit institutions and foreign bank branches on the interbank currency market, Circular 21 replaces the regulations on this activity in previous documents in order to manage this activity more uniformly and strictly.

The first Regulation on open market operations promulgated by the Governor of the State Bank together with Decision No. 85/2000/QD-State Bank No. 14 dated March 9, 2000, was an important milestone marking the development of Vietnam's currency market. On January 5, 2007, the Governor of the State Bank promulgated the Regulation on open market operations together with Decision No. 01/2007/QD-State Bank, and this Regulation was amended and supplemented in Decision No. 27/2008/QD-State Bank of September 30, 2008. In order to support and increase the flexibility of the money market, on April 7, 2004, the Governor of the State Bank promulgated the Regulation on currency brokerage together with Decision No. 351/2004/QD-State Bank to create professional entities for the market.

Along with the interbank market, open market operations also have continuous growth and development in terms of transaction volume and the number of market members. The mechanism and professional process are increasingly perfect: the payment process has been shortened, from payment after two days in 2000 to 1 day in 2001, and from 2002 to now, payment is made on the transaction day. The transaction period has also been shortened from 10 days/session in 2000 to 1 session/week in 2001, 2 sessions/week in 2002, and 3 sessions/week from November 2004; the State Bank has implemented it daily.

The volume of open market transactions has increased sharply over the years. In 2008, the State Bank conducted 401 bidding sessions, an increase of 46 sessions compared to 2007. The total transaction turnover in 2008 was 1,036 trillion VND, an increase of 618 trillion VND compared to 2007. In 2011, to meet the capital needs of credit institutions in liquidity difficulties, the State Bank of Vietnam organized 431 sessions of term purchase of valuable papers with a total winning turnover of VND 2,800 trillion. In 2012, the system's liquidity was improved, and the amount of money provided by the State Bank to banks through open market operations in the first ten months of the year reached VND 404 trillion, with the number of bidding sessions reduced to 257 sessions.

**Building infrastructure, supporting the operation of the money market**

As an agency managing and administering the money market, the State Bank attaches great importance to building infrastructure, supporting market operations, and developing the money market. The State Bank has developed software to carry out money market transactions between the State Bank and credit institutions that are market members, such as treasury bill auctions, open market operations and part of discounting operations etc, rediscount and mortgage loans for valuable papers. The market information collected through this channel is also the basis for the State Bank to develop an appropriate monetary policy management plan in each period. Since 2002, the State Bank has started operating the interbank electronic payment system, a modern online payment system for payment and clearing activities between members. After ten years of operation and development, the interbank electronic payment system has proven its role and importance in supporting clearing activities between banks, thereby promoting the development of the currency market.

**Monitoring, supervising, and operating the currency market**

Building and developing a safe, healthy, and transparent money market has always been the goal of the State Bank. Therefore, the collection, analysis, and publication of information on the operation of the entire banking system in general and information on the currency market in particular are permanently attached great importance to the State Bank. Information on the operation of the whole market and information about each market participant is an essential basis for the State Bank in making policy decisions and developing suitable monetary policy management plans for each period. On the other hand, information on market activities such as sales, interest rates, and transaction terms is also provided regularly and promptly by the State Bank through the media, primarily through its website, which is also helpful information for market members in planning their business strategies.

In the management and administration of the market, in order to support the legal corridor to take effect, the State Bank has flexibly used monetary policy tools to operate and control the money market in recent years. Before 2000, the interest rate management mechanism of the State Bank was mainly based on the system of the guiding interest rate bracket or the ceiling interest rate set by the State Bank. Since August 2000, along with the application of the base interest rate in VND as the reference interest rate for credit relations in the market, in addition to the refinancing interest rate, the interest rate for winning open market operations, the interbank market interest rate has also been closely monitored by the State Bank. It can be seen that, in each different period in the operation of the money market, the State Bank has used relatively flexible management methods and combined monetary policy tools to suit the domestic and world economic context as well as the development trend of the market. Since 2008, when the credit market grew too hot, banks' lending interest rates were pushed up; the State Bank has continuously injected money into the banking system by acquiring valuable papers of commercial banks on the open market. Along with promoting the supply of money through open market operations, in this period, the State Bank of Vietnam issued directions requiring commercial banks to earnestly implement and maintain mutual lending concentrated at the Head Office, with an interest rate not exceeding 150% of the introductory interest rate announced by the State Bank. It has contributed significantly to cooling down market interest rates and providing liquidity for market members, especially those with difficulties in capital. Under the management of the State Bank in 2012, the capital tension situation of the banking system has been significantly improved, the transaction interest rate in the market has cooled down and gradually stabilized, and the transaction market is vibrant again. It is an effective capital conditioning channel among market members.

## 5. Orientations and solutions for the development of Vietnam's currency market to 2030

In order to build and develop Vietnam's currency market more and more strongly, integrating with the international market, on August 12, 2010, the Governor of the State Bank signed Decision No. 1910/QD-State Bank approving the Scheme on development of Vietnam's currency market, which clearly states the objectives, orientations, solutions, and roadmaps for the development of Vietnam's currency market to 2020. Accordingly, the Vietnamese currency market model is built on *"developing a safe, synchronous and highly competitive currency market to create an important basis for planning and administrating monetary policy, increasing the convertibility of the Vietnamese dong."* On that basis, the Scheme has also put forward solutions to develop the money market in the future, focusing on solutions such as selecting market models, completing the legal framework to improve the qualifications of market members, diversifying products, etc. deal... and specific roadmaps to implement short-term as well as long-term solutions.

It can be said that up to now, Vietnam's currency market has made great strides in scale and level, playing an essential role in transmitting the impact of monetary policy on the economy. This is the most explicit demonstration of the role of the State Bank in organizing and administering the market. The money market is increasingly promoting its essential role in regulating the banking system's capital. Thereby, the critical role of the State Bank of Vietnam in organizing, managing, and developing the currency market has also been affirmed; the money market has accordingly become an effective tool, a place to quickly, accurately, and effectively transmit monetary policy to the banking system in particular and the whole the economy in general.

### Mainstream trends of the global financial system in the period 2021 - 2030

Under the impact of digital transformation, the catalyst of the epidemic and the process of international integration, and the change in the trend of consumption of financial services in a more "green" direction, five main trends of the global financial system can be observed in the coming period.

***Strong digital transformation trend***

The development of Industrial Revolution 4.0 and the digital transformation trend have changed all aspects of the financial services sector. Modern and breakthrough technologies such as cloud computing, big data, artificial intelligence, blockchain, Internet of Things, robotic process automation, biometrics, virtual reality technology, etc., are increasingly widely applied, contributing to diversifying activities and distribution channels, modernizing financial products and services; increase understanding of customer needs and behaviors; increase the productivity and quality of operations of the financial system. Digital transformation is also taking place firmly in the financial fields such as insurance, real estate business, and financial education... as well as the strong development of global financial technology centers, including leading financial centers in Asia such as Singapore, Hong Kong, Dubai, etc.

From the perspective of management and supervision, traditional management methods will gradually be replaced by modern and diverse management methods suitable for the digital economy and financial system. Central banks worldwide are trying to find management methods suitable for new technological developments and the diversity of types and financial entities, especially fintech companies and technology companies participating in the finance/payment sector. The Bank for International Settlements (BIS) and several central banks have agreed to establish the "Innovation Center for Responding to Technology Trends," which is expected to be headquartered in Basel (Switzerland), Hong Kong, and Singapore, in order to respond promptly to new technological trends and strengthen the stability of the global financial system.

***Digital currency development trends***

Digital currency (digital) is a financial product based on modern technology, so the trend of existence and development of digital currency is inevitable because of the resonance of fundamental factors and main drivers such as the strong development trend of technology; the trend of developing modern payment and digital economy; Risks related to cash and traditional currencies are the driving force and pressure on the development of digital currencies.

By the end of April 15, 2021, the world recorded the appearance of 4,684 unofficial digital currencies, with a total capitalization of nearly 2,200 billion USD which, the capitalization of the ten most popular digital currencies reached nearly 1,930 billion USD (accounting for nearly 90% of the total market) and the most prominent was Bitcoin accounting for 55% of the total market capitalization. Despite their many advantages and potentials, unofficial digital currencies also contain many risks (legal risks, risks of instability to payment systems, finance, technical risks, illegal activities, and challenges to the policy administration of central banks and regulators), so this currency has not been used much the country, management agencies. A large number of people accept it.

Mainstream digital currencies issued and managed by central banks (CBDCs) have many outstanding advantages, offsetting the disadvantages of unorthodox digital currencies, and are guaranteed by reputable global institutions and widespread adoption. The development of CBDC is a trend and is being paid more and more attention by many countries. However, the view on the issuance of CBDC coins is a big difference between the group of developed countries and the group of emerging countries. Accordingly, it can be divided into three groups: (i) Pioneer groups (China et al....); (ii) Groups that actively support and are studying to release (India et al., etc.); (iii) The group is cautious in considering the negative impacts and risks brought by CBDCs on financial stability, banking structure, the entry of non-bank institutions in the financial system and the transmission of monetary policy (United et al....).

According to BIS estimates (2020), about 20% of the world's population can access CBDCs within the next three years. However, there are also certain limitations regarding technology and legality to officially operate in each country and globally. This requires each country to have an appropriate approach and international cooperation in recognizing, managing, and supervising digital currencies.

***The trend of restructuring, healthy, and standardizing the financial system***

"Restructuring" is the most mentioned phrase in plans to restore the economy and global financial and monetary markets during and after the COVID-19 epidemic. Restructuring strategies focus on reducing personnel and operating costs, merger of departments, transfer of personnel positions, restructuring of the operating mesh film, investing heavily in digital technology, cooperating and acquiring several Fintech products and services, and cooperating with Bigtech to create an ecosystem... M&A activities in the finance and banking sector have increased sharply since the second half of 2020 and are forecast to continue to be active in the number of deals and value in 2021 - 2022. The market is likely to witness major M&A deals in the banking sector, such as UBS and Credit Suisse (Switzerland), Caixa Bank and Bankia (Spain), Citic et al. (China), the wave of M&A of Japanese banks and financial institutions in the ASEAN[1] region... In securities, restructuring and modernization of operations are essential to overcome technical risk incidents (order congestion, suspension of trading, closure, etc.) globally, especially since many stock markets (stock markets) worldwide have established historical milestones.

Although fiscal and monetary easing is still a popular global trend to support businesses and households in overcoming difficulties due to the impact of the COVID-19 epidemic, credit conditions seem to be quite tight rather than easing. Most countries do not lower credit standards; credit standards are applied at a high level by credit institutions (credit institutions) and financial institutions to control risks, increase capital safety buffers, apply more risk management standards according to Basel III, IV (especially liquidity risk management, financial leverage risk and derivatives business....).

***The trend of green finance and green banking development***

In the face of the heavy impacts of epidemics, environmental pollution, and climate change, the awareness and behavior of global humanity are increasingly changing strongly in the direction associated with health protection, environment, thrift and prevention, and the trend of prioritizing green economic development. Clean energy. According to financial data provider Refinitiv, the search trend for the sustainability triangle: environmental, social, and governance (ESG) via Google in the period 2017 - 2020 increased ten times from the period 2011 - 2015, showing a growing level of interest in greening the economy and financial markets. ESG is also one of the additional criteria of international credit rating agencies such as Moody's and Fitch Ratings.

The financial "greening" strategy will cover all the components of the financial system: green financial intermediaries (including carbon markets, green bond markets, green stocks, and stock indices), green capital mobilization tools, and green investments. Sustainable investment (through ESG funds) is becoming a mainstream trend globally, in addition to traditional criteria such as profit growth and financial capacity. For the stock market, the birth and development of the sustainable green securities market (SSE)[2] is an essential solution to overcome risks and fluctuations towards more sustainable and greener development. By the end of 2020, the capitalization of the SSE has reached more than 88,300 billion USD, and the number of SSE members has reached 107 stock markets and 53,403 listed enterprises, notably the participation of many small-scale stock markets of low-income developing countries.

***The trend of international integration is deepening.***

Along with developing new-generation free trade agreements (FTAs) and fintech centers, opportunities for cooperation, development of international trade and investment, and international finance are increasingly open, especially for dynamically developing economies. From a management perspective, cooperation in the management and sharing of data and information between central banks and international monetary management agencies will contribute to innovating management principles and methods to focus on managing the process of providing financial services. Instead of focusing on organization or technology, there should be a shift from management based on general principles to management based on risk assessment according to international practices. At the same time, international integration will strengthen information security and cybersecurity, protect investors' interests, and ensure the financial system's stability. Accordingly, regulations on inspection, supervision, and sanctioning of administrative violations; high-tech crime prevention needs to be more permanent, have cooperation on a regional and international scale, with a broader scale and scope to adapt to the rapid, continuous, multi-dimensional and cross-border development of financial technology, digital currency, as well as sophistication, complex of high-tech crime and financial crime.

**Risks and challenges to the global financial system**

The global financial development trend and the recovery and growth expectations of the economy and businesses are the foundation for the prosperity of the global financial and monetary markets in 2020-2021 and the medium-term. However, the global financial system has been. It will be significantly affected by the unpredictable and complex developments of the COVID-19 epidemic, the uneven production and distribution of vaccines, the unsustainable recovery of the economy, and the inherent risk of the financial and monetary markets.

***Potential risk of global financial instability***

After more than one year since the outbreak of the COVID-19 epidemic on a global scale, the main risk signs for the global financial system, although they have been identified and warned, are still at risk of increasing, outbreaks even lasting the next 2-3 years. In particular, 6/7 main signs of financial risk are still increasing, especially in the government, household, insurance, and asset management sectors. (i) "Debt bomb" remains the most significant risk in all three government and corporate and household debt areas. The debt burden will be more unpredictable as interest rates rise, especially in developing and low-income countries where access to vaccines is more complex; (ii) Increased risks to the insurance and asset management sectors. According to a report by Deloitte Auditing Firm (January 2021), the global insurance market is strongly affected by the Covid-19 epidemic. The global insurance market 2020 reached 6,100 billion USD, down 2.8% compared to 2019, mainly due to a sharp decline in life insurance by 6.0%/year. For the field of asset management, the decline in profits/losses/suspension of operations of investment funds (especially stock investment funds) is quite common in 2020 due to the impact of the Covid-19 epidemic, fluctuations in commodity and currency prices; (iii) The stock market and real estate market are still at risk of decline due to the uncertain and uneven economic recovery, increasing inflationary pressure, herd sentiment and the "hot" increase of the global stock market; (iv) Emerging markets face the risk of reversal of foreign capital flows. Indirect investment capital inflows (FII) have been more stable since the end of 2020 but are still at risk of declining in 2021 - 2022. According to the International Monetary Fund - IMF (April 2021), if the economic recovery rate does not meet expectations and the vaccine supply process is worse than the baseline scenario, global net FII capital inflows will decrease by about 25-28% compared to 2020, to -110 billion USD, and the more significant decline is in low-income countries. Large current account deficit, high public debt, complicated epidemic situation, slow vaccine distribution; (v) The banking system still has many potential risks. Although the resilience of the global banking system is improving, bad debts in some regions, such as China and emerging countries, are still high, even increasing. In addition, the banking system also faces new challenges, such as the alarm status of shadow banking, the development of fintech, digital currency, etc.; (vi) The issue of cybersecurity and financial crime is becoming increasingly complex. The development of new technologies in the

Industrial Revolution 4.0, such as 5G, IoT, cloud computing, and AI, promoted the strong development of digital finance, digital banking, non-cash payments, and cross-border payments. However, this is also the basis for cybercriminals to take advantage of "targeted" attacks in banking and finance.

***The risk of an uncertain and uneven global economic recovery increases financial risks.***

The economic and health crisis due to the impact of the Covid-19 epidemic caused global economic growth in 2020 to decline by -3.3% compared to 2019 - the lowest level since 1930; the recovery momentum was forecast at 6% growth in 2021 and 4.4% in 2022 (IMF, April 2021). The economic recovery depends heavily on the development, supply, distribution, and vaccination of vaccines globally. According to CitiResearch (February 2021), vaccines will help global GDP grow by 4.1 percentage points in 2021-2022. However, the distribution of vaccines is facing many difficulties, the most worrying of which are inequality, unevenness, and psychological factors. These negative factors cause the economic recovery to slow down and prolong. The level of recovery is "uncertain," which in turn can affect and exacerbate the risk of financial risks. In addition, geopolitical fluctuations are complicated, making gold and oil prices fluctuate sharply, which impacts the global financial and monetary markets and is also a big challenge. In addition, inflationary pressure increases, interest rates rise, and the trend of gradually decreasing quantitative easing packages, trade protection trends, strategic competition, trade-technology tensions between the United States and China, and the sharp and unpredictable fluctuations of world commodity prices... all increase the risk of financial instability.

## 6. Trends, prospects, and challenges of Vietnam's financial system in the period of 2021 - 2030

***Trends and Prospects***

Vietnam is also catching up with the five leading global financial and monetary market trends. Those are digital transformation trends, restructuring, health and standardization, developing green finance and green banking, and financial - banking integration. Particularly for the trend of digital currency development, Vietnam may belong to group 3 - a cautious group to consider because of concerns about the negative impacts and risks of digital currencies in general and CBDC on financial stability, the structure of the financial system (including the increase of non-bank institutions) and the operation of monetary policy terrible. After 34 years of innovation, development, and critical socio-economic achievements, Vietnam's financial system has developed rapidly in quality and quantity, promoting growth and restructuring the economy. In 2020, the size of Vietnam's financial and monetary market (including three regions: banking, securities, and insurance) was equivalent to 334% of GDP. Along with that, the legal framework for the financial and monetary market has been increasingly improved, improving transparency, safety, standards, and approaching international practices, contributing to improving the endurance and ability to prevent and respond to risks.

*Digital finance development trends*

Vietnam has been affirming its position as one of the most dynamic countries in the world in terms of developing the digital economy and digital finance, especially in the new post-COVID-19 development period. A significant driving force to become a financial monetary market for the development of Asia and the world is the increase in the population of working age (about 58% of Vietnam's population), urban population (40% of the population), and the sharp increase in the use of the internet and smartphones (the rate of internet use accounts for 70.4% of the population, ranked 4th in the ASEAN region; the number of mobile connections has reached 145.8 million, 1.5 times the population of Vietnam). Vietnam's digital economy growth rate is the highest in the ASEAN region, reaching an average of 27% in 2015 - 2020, and is expected to reach an average of 25 - 30% in 2021 - 2025 (Google & Temasek, 2020). Vietnam has also made great strides in its digital finance, especially non-cash payments and the digital transformation of commercial banks and fintech companies.

Vietnam ranks first in ASEAN regarding fintech development speed; the number of fintech companies in 2020 reached 115, 2.6 times higher than in 2017. According to a survey by PwC Auditing Firm (2017), 72% of Vietnamese fintech companies are actively cooperating with commercial banks in exploiting the unbanked residential market segment (40%) and exploiting new banking and financial services (payments, crowdfunding, etc., online lending, AI, Blockchain...), contributing to the elimination of black credit, transparency of the personal finance and currency market, and the development of Vietnam's consumer finance and currency market.

By the end of 2020, there were 78 commercial banks and organizations providing payment services via the Internet; 45 organizations providing mobile payment services; 34/37 non-bank organizations providing e-wallet services; piloting Mobile money through telecommunications enterprises Viettel, VNPT, and MobiFone. According to the State Bank of Vietnam (the State Bank), in 2020, the number of personal accounts reached 95.6 million accounts, an increase of 45.5% compared to 2016; the value of mobile payment, internet payment, and POS payment increased by 794%, 353.1%, and 139.5% respectively over the same period in 2016.

*The trend of restructuring and healthy Vietnam's financial system*

Vietnam's banking system will continue to be restructured to contribute to competitiveness, transparency, professionalism, and modernity (applying Basel III and IV). The growth of credit institutions will rely more on revenue from fees and services (the rate of service fee collection will gradually increase from about 20% in 2020 to about 30-35% in 2025). Bad debts are more substantial and are controlled at 2-3%. Along with the restructuring of credit institutions, M&A in the banking sector will continue to be active in 2021 - 2025, so the number of credit institutions may decrease but will grow in depth with a growth model based on less capital.

The capital market is increasingly diversified and modern. Vietnam is one of the ten stock markets resilient to the COVID-19 epidemic and have the best growth in the world in 2020. The government bond market is considered the most developed market in ASEAN. The corporate bond market grew strongly and changed qualitatively; the market size reached about 13% of GDP in 2020, exceeding the set target. Although the derivatives market has only been established for three years, it has made remarkable growth, with open volume (OI) increasing by 143% and the average trading volume in 2020 increasing by nearly 80% compared to 2019, effectively promoting the role of risk hedging. The insurance market maintained a reasonable growth rate (premium revenue increased by an average of 19.5%, reaching 3.3% of GDP, and the rate of people participating in life insurance reached nearly 11% in 2010 - 2020) and diversified insurance products. Insurance businesses strengthen the application of information technology and digital transformation, contributing to improving customer experience.

*The trend of "greening" Vietnam's financial system is focused on*

The trend of green finance development has been promoted: the successful pilot issuance of green government bonds (Ho et al.). Commercial banks initially had policies for green credit, prioritizing several industries and fields in the direction of in-depth investment, using high technology, etc.; 3 commercial banks have applied the Environmental and Social Responsibility Management System (ESMS), 17 commercial banks have developed an environmental and social risk appraisal process in internal regulations, environmental and social risk assessment in credit extension activities. The Sustainable Development Index version 1.0 (VNSI index), according to ESG criteria, has been officially operated since July 2017, creating an attraction for foreign investors. The trend of applying ESG standards in-stock selection has increased sharply since the second quarter of 2020...

*The trend of international integration*

Integration is an opportunity for Vietnam's economy and financial and monetary market to develop in the direction of modernization, integration, and transparency according to international standards. Along with commitments under the new generation of FTAs, Vietnam's financial services will be increasingly liberalized. The trend of linking banks - insurance - securities - and other financial services creates a complete ecosystem, overcoming the limitation of geographical distance. Foreign investors' ownership rate will gradually increase, contributing to attracting foreign investment and increasing market liquidity. In addition, the State Bank will gradually increase its independence, initiative, accountability, and modernity and strengthen institutional capacity, effectiveness, efficiency, and scope of inspection and supervision in line with international practices. At the same time, Vietnam's financial system has the opportunity to affirm its position on international rankings, notably that Vietnam has officially become the market with the most significant proportion of stocks in the basket of marginal markets and has the opportunity to develop into emerging markets before 2025 with the quality of corporate governance towards the level of ASEAN-6 average; prospects for the development of Ho Chi Minh City's international financial and technology center. Along with that, Vietnam successfully fulfilled its role as the Chair of the ASEAN Capital Markets Forum (ACMF) in 2020, contributing to improving its capacity to adapt, manage financial risks, and be ready to handle regional and global financial instability.

***Some challenges and risks***

As an economy with great openness, Vietnam's financial system is significantly affected by the unsustainable recovery of the economy and the global financial and monetary markets, as well as the internal difficulties of the economy. Accordingly, Vietnam's financial system also faces five main risks and challenges: (i) Vietnam's financial system faces financial risks due to the influence of the world. The level of risk and endurance of Vietnam's financial and monetary market is assessed at an average level - of 5. However, some regions are suffering at an average level but are greatly affected by fluctuations in the world financial and monetary markets and are always at risk of turning into a higher-risk state if there is a lack of timely and effective measures. Notably, Vietnam's stock market is forecast to grow. However, the risk and volatility risk is also relatively high (especially if cheap capital flows are still popular and the main load leverage is not strictly controlled).The scale is still small; the goods are not rich, and the transparency is low, mainly individual investors. Types of investment funds have not yet been developed. The information technology system is still outdated. The banking sector is always under pressure to increase capital (due to the thin capital base; CAR is low while relying on credit; the credit/GDP ratio is quite high, about 138%, higher than the ASEAN-9 average of 86% of GDP). Potential bad debts are at risk of increasing (possibly to 2.5-3% in 2021-2022 when the support for deferral and extension of debt repayment time expires). The responsibility is also to set aside additional risk provisions in 2021 - 2023. Although Vietnam's insurance and asset management market has had quite positive growth (up 15% and 20% respectively in 2016 - 2020, a high increase compared to many emerging markets, especially in the context of the Covid-19 epidemic), it is still a young market. competitiveness is still low compared to the region and the world; (ii) Vietnam's economy and financial system's scale and competitiveness have been increasingly strengthened but have not really met the requirements. The institutional, technological, and human resource systems for the financial and monetary market are increasingly perfect, actively supporting the economy's and the financial system's stable and healthy development. The specialized laws governing finance and banking are being standardized and perfected according to international practices. The safety net of the financial and monetary system and financial and monetary management capacity have been formed. Risk prevention capacity has improved in the direction of initiative and flexibility. Fiscal and monetary policies have made many important steps, contributing to inflation control, macro stability, etc. However, the competitiveness of Vietnam's financial and monetary market is still low compared to the region, so the risk of high risk and stamina may decrease. Although impressive results were achieved in 2020, the scale, transaction value, and capitalization of the stock, bond, and insurance markets have not been commensurate with the potential. The ratio of securities accounts/population and bank accounts/population is low compared to the region. Vietnam's insurance penetration rate is still meager, only 2.7% of the population compared to the average of 3.3% in other emerging countries. The per capita insurance premium is only 72 USD/person/year, less than half the average of emerging countries. The proportion of cash in Vietnam's total means of payment is still higher than the target of 10% by the end of 2020. Therefore, institutional issues, financial system risk management capacity, The transparency and professionalism of the investment environment are still a big challenge in the context of the rapidly developing digital economy, finance, and digital currency; (iii) Vietnam's financial system still faces challenges from within the economy. Despite achieving positive economic growth results in the context of the global recession (growth of 2.91% in 2020 and forecast to continue to grow at 6.5-7% in the period 2021-2025), Vietnam's economy is still facing five major internal challenges: the quality of growth and competitiveness is not high, the restructuring is still slow and has not gone into depth; competitive pressure, legal risks, spillover risks... in the process of integration; the results of the implementation of the three strategic breakthroughs (institutions, human resources, and infrastructure) have not met expectations; the problem of population aging affects the quality of human resources; Vietnam is one of the six countries most affected by climate change; increased environmental pollution; (iv) Vietnam's financial system faces the risk of crime in the field of finance and banking. Although Vietnam has made many strides in preventing and suppressing crime in the field of finance and banking, mastered 90% of the ecosystem of safety and cybersecurity products, and invested in many information security solutions such as new-generation firewalls, malware prevention software, biometric authentication (fingerprints, palm veins, voice), digital signatures. However, the prevention and control of financial and banking crimes still face many challenges due to institutional limitations, organizational and management capacity; there are still many security vulnerabilities that have not been overcome in time; the number of fraudulent attacks and appropriation of bank accounts is forecast to continue to increase; (v) Developing green finance and green banking still faces many challenges. The National Strategy on Green Growth to 2020 (Decision No. 1552/QD-State Bank dated 06/8/2015), the Scheme for the development of green banking in Vietnam (Decision No. 1604/QD-State Bank dated 07/8/2018), green finance has achieved initial results; VN-Index and HNX-Index have participated in the SSE initiative since 2015... However, Vietnam's green finance is considered a new investment and development trend and is still facing many challenges such as the legal system on green finance is still in its infancy; commercial banks do not have their department dedicated to green credit; the amount of green credit capital is quite large while the financial efficiency is not high; have not yet developed corporate bonds and green debt instruments; the sense of responsibility of businesses and people for environmental protection and green finance development, ESG standards are still limited... According to RobecoSAM, a consulting company specializing in sustainable investment, Vietnam is one of the ten countries with the lowest ESG index.

## 7. Some strategic solutions for Vietnam

Vietnam's financial system has been making solid developments, strengthening its stamina. However, its development prospects depend heavily on the recovery of the economy and the global financial and monetary markets and the stability and sustainability of investor confidence in the market. Therefore, strategic solutions are necessary to proactively seize opportunities and development prospects and prevent risks towards sustainable development.

Strategies and legal institutions in the field of finance and banking need to be completed and implemented effectively. Accordingly, the amendment of the Law on the State Bank, the Law on Credit

Institutions, and the Law on Deposit Insurance should be considered. The Law on Securities 2019 (effective on January 1, 2021) needs to be implemented, and the Law on Insurance Business (allowing the financial group model) needs to be completed. Projects such as the Strategy for developing the banking industry to 2025 (Decision No. 986/QD-TTg dated 08/8/2018) and the green finance and banking development strategy need to be built and implemented uniformly from the central to the local level...

The legal corridor for new business models in the digital economy and finance - digital currency and green finance (including experimental management mechanisms) needs to be completed soon to facilitate the operation of fintech companies, new business models such as the sharing economy, etc. Blockchain applications, AI, cloud computing... In addition, the Fintech Center (which can be chosen in Ho Chi Minh City because this is where 60% of fintech companies and fintech clubs are located) needs to be built soon to support the State Bank, the Fintech Steering Committee, and credit institutions in the process of operating the experimental management mechanism. In addition, a dedicated research team on CBDC trends and Vietnam's approach needs to be studied. At the same time, the roadmap for developing Vietnam's green financial system to 2030, with a vision to 2045, also needs to be built soon with four main pillars: green financial intermediaries, green capital mobilization tools, green investment enterprises, and green finance and money markets.

The capacity for management, supervision, safety, and stability of the financial and monetary system must be improved. Accordingly, the State Bank and management and supervisory agencies (State Securities Commission, Deposit Insurance, etc.) must be more independent and empowered. The model of management and supervision of systemic risks, the financial and monetary stability model, and the mechanism for handling crises need to be built. Inspection and supervision tools and forms need to be modernized. Violations in the market need strict sanctions. In addition, the effectiveness of policy coordination (especially between monetary policy and fiscal policy) needs to be improved to achieve efficiency in interest rate policy and medium and long-term capital mobilization, promoting the upgrading process of Vietnam's stock market. Policy credits and commercial credits need to be clearly separated to increase autonomy in the operation of financial institutions. A set of indicators to assess the level of greening of the financial system (green banking, green investment, green securities, corporate sustainability indicators - SSI, and a set of green finance composite indices - GFI) should be formed to determine the evaluation criteria.

Management agencies need to proactively develop and consistently implement the Digital Transformation Strategy in the field of finance and banking, in which building and standardizing databases, digital human resources, and modern information technology infrastructure are the keys. In addition, the Scheme to upgrade Vietnam's stock market also needs to be developed and implemented, in which, transparency, professionalism, diversification of products and services, especially products to support risk management, digital finance products and green finance, must be paid special attention. In addition, financial literacy needs to be popularized to raise people's awareness of using digital financial services and develop green finance, considering this as a pillar of the Comprehensive Financial Strategy to 2030.

## References

[1] Can Van Luc (2021), *The Shape of Vietnam 2045.*

[2] Can Van Luc and the research team of BIDV Institute of Training and Research (2021), *Vietnam's socio-economic and financial system 2011 - 2030 - Orientation and key solutions to 2030.*

[3] Asian Development Bank (ADB), *Strategy 2030 - Towards a prosperous, equitable, adaptable and sustainable Asia-Pacific.*

[4] Standard Chartered Bank (2021), *Global Monetary and Financial Market Outlook - Time for Restructuring?.*

[5] Vu Nhu Thang (2021), *Orientation for the development of Vietnam's financial and monetary market in the period of 2021 - 2030,* Finance Magazine in February 2021.
[6] Australia Aid, Csiro and Data 61 (2018), *Vietnam's Future Digital Economy Towards 2030 & 2045.*
[7] Google and Temasek (2018, 2019, 2020), *E-Conomy SEA 2018 - 2020.*
[8] IMF (2021), *Global Financial Stability Report and Fiscal Monitor.*
[9] OECD (2017), Green Finance and Investment Mobilising Bond Markets for a Low-Carbon Transition.
[10] WB (2021), *World Economic Outlook.*
[11] Keynes, John Maynard. (1943), "Proposals for an International Clearing Union", H.M.S.O. London, 30 November.
[12] Nakhleh, Emile A. (1975), "United States and Saudi Arabia: a policy analysis." Nunan, C. (2004), Petrodollar or Petroeuro? A new source of global conflict.
[13] Triffin, Robert. (1959), "The international monetary positions of United States.". Pp: 417-426.
[14] Triffin, Robert. (1960), Gold and the Dollar Crisis: The Future of Convertibility, New Haven: Yale University Press.
[15] Bullionstar, "It's Time to Look More Carefully at "Monetary Policy 3 (MP3)" and "Modern Monetary Theory (MMT)", tại https://www.linkedin.com/pulse/its-time-look-more- carefully-monetary-policy-3-mp3-modern-ray-dalio/
[16] US Budget Deficit by Year Compared to GDP, Debt Increase, and Events, tại https://www.thebalance.com/us-deficit-by-year-3306306
[17] US Stimulus Will Boost Growth at a Cost of Higher Deficits, Debt, https://www.fitchratings.com/research/sovereigns/us-stimulus-will-boost-growth-at-cost-of- higher-deficits-debt-09-03-2021
[18] *Report on the economic and financial situation of the National Financial Supervisory Committee (2018).*
[19] *TS. Nguyen Dinh Cung: "Difficulties of businesses: Problems and solutions".*
[20] *TS. Nguyen Duc Thanh: "Facing the challenge of economic restructuring. Vietnam Economic Annual Report 2015"*
[21] Calleo DP. (2011) Twenty-First Century Geopolitics and the Erosion of the USD Order. In: Eric H & Jonathan K (eds) *The Future of the USD.* Cornell University Press, 164-190.
[22] CIPS. (2021) CIPS Participants Announcement. 63. (accessed 05-04-2021).
[23] Cohen BJ. (2015a) *Currency Power: Understanding Monetary Rivalry*: Princeton University Press.
[24] Cohen BJ. (2015b) The Demise of the USD? *Revue de la Régulation - Capitalism, institutions, powers* 18.
[25] CPT. (2020) Will China's Push to Internationalize the Renminbi Succeed? (accessed 05-04-2020). Dorrucci E & McKay J. (2011) The international monetary system after the financial crisis. European Central Bank.
[26] Doshi R. (2019) China's Role in Reshaping the International Financial Architecture: Blunting U.S. Power and Building Regional Order. In: Tellis AS, Alison & Wills M (eds) *Strategic Asia 2019: China's Expanding Strategic Ambitions.* The National Bureau of Asian Research, 279 - 310.
[27] Eichengreen B. (2011a) *Exorbitant Privilege: The Rise and Fall of the USD and the Future of the International Monetary System*, New York: Oxford University Press.
[28] Eichengreen B. (2011b) The renminbi as an international currency. *Journal of Policy Modeling* 33: 723-730.
[29] Emine B, Camila C, Georgios G, và cộng sự (2020) Patterns in invoicing currency in global trade. European Central Bank.
[30] Giannini C. (2011) *The Age of Central Banks*: Edward Elgar Publishing.
[31] Gopinath G & Stein JC. (2021) Banking, Trade, and the Making of a Dominant Currency.*The Quarterly Journal of Economics* 136: 783-830.
[32] Ignazio A, Agnès B-Q, Benjamin C, và cộng sự (2011) Global currencies for tomorrow: A European perspective. Directorate General Economic and Financial Affairs (DG ECFIN), European Commission.
[33] Kirshner J. (2014) Regional Hegemony And An Emerging RMB Zone. In: Helleiner E & Kirshner J (eds) *The Great Wall of Money.* Cornell University Press, 213-240.
[34] Krugman P. (1984) The International Role of the USD: Theory and Prospect. In: Bilson JF & Marston RC (eds) *Exchange Rate Theory and Practice.* University of Chicago Press, 261-278.
[35] Matsuyama K, Kiyotaki N & Matsui A. (1993) Toward a Theory of International Currency.*Review of Economic Studies* 60: 283-307.
[36] Prasad E. (2016) *Gaining Currency: The Rise of the Renminbi*: xford University Press. Prasad E. (2019) Has the USD Lost Ground as the Dominant International Currency? : Brookings Institution Report.
[37] Rey H. (2001) International Trade and Currency Exchange. *The Review of Economic Studies* 68: 443-464.
[38] Seghezza E & Morelli P. (2018) Rule of law and balance of power sustain US USD preeminence. *Journal of Policy Modeling* 40: 16-36.
[39] Subramanian A. (2011) *Eclipse: Living in the Shadow of China's Economic Dominance*: Peterson Institute for International Economics.
[40] US Budget Deficit by Year Compared to GDP, Debt Increase, and Events, tại
[41] https://www.thebalance.com/us-deficit-by-year-3306306

[42] US GDP as % of World GDP, at
[43] https://ycharts.com/indicators/us_gdp_as_a_percentage_of_world_gdp
[44] US Stimulus Will Boost Growth at a Cost of Higher Deficits, Debt, https://www.fitchratings.com/research/sovereigns/us-stimulus-will-boost-growth-at-cost-of- higher-deficits-debt-09-03-2021
[45] US balance on goods and services (quarterly) https://ycharts.com/indicators/us_balance_on_goods_and_services_quarterly