International Currency Competitiveness Index Research Report (Postprint)

Authors: Zou Pingzuo, Liu Xiaoxing, HUO Dongxu

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Abstract

In today' s era of open economy, currency competitiveness has become a key factor in national competition. This report studies and constructs an international currency competitiveness index system, aiming to better grasp the evolving trends of the current international currency competition landscape, provide pathway guidance for enhancing the competitiveness of the Renminbi, and elevate the internationalization of the Renminbi to a new level.

Based on the formation mechanism of currency competitiveness and upon a profound exploration of the theoretical foundations and influencing factors of international currency competitiveness, this report constructs an international currency competitiveness index system from four dimensions: basic competitiveness of national (regional) currencies, value competitiveness, environmental competitiveness, and sustainable competitiveness.

Based on quantitative analysis and demonstration of objective data, evaluation results indicate that this indicator system can provide scientific and reasonable assessments of national currency competitiveness levels, offering a strong reference basis for the formulation and implementation of international financial strategies and policies.

Full Text

Preamble

Zou Pingzuo[1], Liu Xiaoxing[2], Huo Dongxu[1]

[1]Financial Research Institute, People' s Bank of China, Beijing 100800
[2]Southeast University, Nanjing 211189

Abstract

[**Objective/Significance**] In today' s era of open economies, monetary competitiveness has become a key dimension of competition among nations. This report studies and constructs an international monetary competitiveness index system to better grasp the evolving trends in the current international monetary competition landscape, provide pathway guidance for enhancing the competitiveness of the RMB, and elevate RMB internationalization to new heights. [**Method/Process**] Based on the formation mechanism of monetary competitiveness and a thorough investigation of its theoretical foundations and influencing factors, this report constructs an international monetary competitiveness index system from four dimensions: monetary base competitiveness, currency value competitiveness, environmental competitiveness, and sustained competitiveness across various countries (regions). [**Results/Conclusions**] Through objective data-based quantitative analysis and demonstration, the evaluation results demonstrate that this indicator system can provide scientific and reasonable assessments of national currency competitiveness levels, offering a robust reference basis for the formulation and implementation of international financial strategies and policies.

Keywords: Monetary competitiveness; Currency index; RMB internationalization; International monetary competition pattern
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1. Evolution and Development Trends of the International Monetary Competition Pattern

With the accelerated development of economic globalization, goods, technology, information, and capital are flowing and allocating across the world with increasing speed and freedom, deepening the interconnection and mutual influence among national economies. Simultaneously, the world economic landscape is undergoing significant transformation, with cooperation, competition, and game-playing among major economies shaping the characteristics and trends of global economic development for the present and foreseeable future. Currency represents the credit of a sovereign state and embodies comprehensive national power. As the role of financial competition in overall national strength becomes increasingly prominent, monetary competitiveness has become an essential component of national competitiveness.

1.1 Historical Process of the International Monetary Competition Pattern

This research group will introduce and analyze the historical evolution and characteristics of the international monetary competition pattern using a world history periodization approach. The analysis covers four specific periods: the classical gold standard era to pre-WWII monetary competition patterns; the

post-WWII Bretton Woods system; the Jamaica system of the 1970s-1980s; and the monetary system from the 1990s to the present.

1.1.1 International Monetary Competition Pattern from the Classical Gold Standard Era to Pre-WWII The formation of modern international currencies began in the late 16th century. Around 1800, Britain formally adopted the gold standard, ushering in a new international monetary pattern. During the classical gold standard era, the British pound sterling held absolute dominance in the monetary system. Britain was the world' s primary exporter of manufactured goods and services, making the pound the natural choice for trade settlement. The United States only gradually surpassed Britain in economic aggregate during the late 19th century, but its financial system development lagged behind, with the Federal Reserve, functioning as a central bank, not established until 1913. After 1914, Britain continuously increased borrowing from the US to finance wartime supplies, transforming the US from a net debtor to a net creditor to Britain. Ultimately, the war resulted in only the dollar maintaining a fixed exchange rate with gold during the 1920s, and the dollar gradually became a major international currency, with its application in international trade and finance widely expanded and strengthened.

The decline of the pound began after World War I. Britain' s determined efforts to restore the gold standard led to overvaluation of the pound, which not only hindered post-war economic recovery and weakened international competitiveness but also caused balance-of-payments deficits and capital outflows that substantially reduced its gold reserves. Subsequently, in 1931, Britain implemented exchange controls and made a suboptimal choice—the gold exchange standard—undoubtedly diminishing its leading role in international affairs. At this time, the US possessed economic strength equivalent to the combined total of Britain, Germany, and France, and held the largest share of gold reserves. In contrast, Britain, due to long-term balance-of-payments deficits, massive gold outflows, questioned pound stability, and declining monetary credibility, was fundamentally incapable of maintaining the gold standard. This caused the pound' s status as an international currency to decline rapidly, essentially losing its core position in the international monetary system. By then, the dollar' s international competitiveness had become basically equivalent to that of the pound, and the fact that the two currencies were mutually substitutable in international markets further elevated the dollar' s status and strengthened its competitiveness.

1.1.2 International Monetary Competition Pattern Under the Bretton Woods System Post-WWII The abandonment of the gold standard, the decline of the pound, and the rise of the dollar were all outcomes of historical choice under global economic and trade development. Monetized gold gradually withdrew from circulation to become a store of value, while currencies of a few economically powerful nations, backed by solid economic strength, became the main components of international reserves and evolved into the world'

s primary circulating currencies along with transformations in the international monetary system and changes in national monetary and exchange rate regimes. Starting from the mid-to-late 1920s, economic crises further facilitated reserve diversification, and after World War II, the dollar gradually distinguished itself, surpassing and replacing the pound, franc, mark, and other international currencies to become the "dominant" currency in the international monetary system. The dollar' s influence and hegemonic status were established and strengthened through the Bretton Woods system.

The international monetary system transitioned from the gold standard and gold exchange standard to the gold-dollar standard, known as the Bretton Woods era. With the formation of the Bretton Woods system, the dollar attained reserve currency status equivalent to gold. The essence of the "double peg" system—where the dollar was pegged to gold and other currencies were pegged to the dollar—was also a compromise outcome. This gold-dollar standard was fundamentally based on the gold exchange standard. Compared to gold, the dollar was "bad money." When the central country' s economy encountered shocks or abandoned cooperation to meet short-term economic objectives, the non-cooperative game between the central and peripheral countries resulted in bad money driving out good money. The gold-dollar standard system inevitably faced a dilemma between dollar liquidity and monetary credibility—the "Triffin Dilemma." Due to this irreconcilable institutional flaw, coupled with the post-war economic rise of Western Europe and Japan and the relative weakening of US economic competitiveness, dollar overabundance led to massive gold outflows, forcing substantial dollar devaluation. The US faced a dilemma between sacrificing its economy to maintain the Bretton Woods system and ensuring healthy domestic economic development, creating a vicious cycle. Ultimately, the gold-dollar system collapsed, and the Bretton Woods system disintegrated.

1.1.3 International Monetary Competition Pattern Under the Jamaica System in the 1970s-1980s A new international monetary system —the Jamaica system—was established in 1976, proposing some principled recommendations on gold, exchange rates, reserve assets, and balance-of-payments adjustments, laying the foundation for subsequent international monetary system reforms.

After the collapse of the Bretton Woods system, the dollar' s international status did not fundamentally waver. The inertial advantage of currency usage and national interest demands led the US to vigorously maintain the dollar' s international hegemony. However, as the economies of Britain, France, Germany, and Japan rapidly recovered and developed post-war, their sovereign currencies continuously challenged the dollar' s hegemonic status. In the early 1970s, massive dollar sell-offs and rush purchases of German marks, yen, and Swiss francs emerged, and the international monetary pattern began diversifying.

During the 1970s and 1980s, although the dollar experienced violent fluctuations against other major international currencies and the international mone-

tary pattern evolved from unipolar to diversified, the dollar still held absolute advantages in international pricing and settlement, international clearing and payment, and international credit based on historical inertia. Although US economic dominance and leadership had slightly declined compared to earlier periods, it remained the world's largest economic power. Changes in the main international monetary competition pattern during this stage were based on shifts in national economic strength, transforming the previous monopoly pattern of dollar dominance and gradually moving toward a phase of competition and cooperation among world currencies. After delinking currency from gold, the Jamaica system implemented gold demonetization, and gold no longer served as the parity basis for national currencies. The main difference from the Bretton Woods era was the absence of institutional constraints, with market supply and demand operating spontaneously, causing gold to fade from the international monetary category. However, the lack of institutional constraints in the Jamaica system created international financial instability, with various negative effects becoming prominent, leading to its widespread perception as a transitional and incomplete system.

1.1.4 International Monetary Competition Pattern Since the 1990s
Since the 1990s, alongside the continued weakness of the yen and substantive progress in European integration, the international monetary pattern has undergone tremendous changes. The formal birth of the euro on January 1, 1999, was considered a currency that could rival the dollar' s influence. Simultaneously, currencies such as the mark and franc exited the international stage, and the euro inherited the international currency status of the mark, franc, and others, regarded as a backbone force in the international monetary pattern from its inception.

Before the euro' s birth, trends in international monetary competitiveness strength were already evident. Considering various factors influencing international monetary competitiveness, including economic strength, comprehensive national power, and financial systems, the dollar maintained its first-place position throughout the 1990s, while the mark and yen were in the second tier, and traditional strong currencies like the pound and French franc were in the third tier. Overall, the international monetary pattern continued the previous period' s polarization, characterized by one strong currency and two weaker ones among strong currencies, but the strength gap gradually widened.

Launched in 1999 by the European Monetary Union—the highest form of regional international monetary cooperation—the euro was considered capable of challenging the dollar's long-standing central position in international currencies. Based on historical inertia, the international monetary competition pattern did not change significantly for a period, but unified currency and unified markets provided a solid foundation for the euro to participate in international monetary competition. Thereafter, the focus of international monetary competition shifted to competition between the euro and the dollar. After the 2007 US

subprime mortgage crisis, the dollar gradually weakened while the euro, yen, pound, and other currencies relatively strengthened. However, since the outbreak of debt crises in Greece, Ireland, and other eurozone countries starting December 2009, the euro' s competitiveness has shown a declining trend, while the dollar has strengthened again. Overall, the current international monetary competition has formed a pattern with the dollar at the core and multiple currencies competing simultaneously. Although both the yen and euro have posed significant challenges to the dollar' s core status, the dollar remains the world' s primary currency for pricing and settlement, foreign exchange trading, and value storage. Naturally, as China' s economic and trade strength improves and develops, the RMB has gradually participated in mainstream world currency competition and is expected to gradually enter the core competitive level.

Following the 2008 global financial crisis, most developed economies fell into the quagmire of sluggish growth and mounting debt, suffering from the risk of "double-dip" recession. For emerging economies, however, this crisis seemed a valuable opportunity to catch up. Compared with developed countries, most emerging economies had sound fiscal conditions, debt levels far below some developed countries, large foreign exchange reserves, and rising international monetary status. Emerging economies gradually demonstrated influence in international capital markets through their substantial foreign exchange reserves. From a competitiveness perspective, emerging economy currencies will exhibit increasing externalities and internationalization along with the expansion of their domestic economic scale and growth in financial strength. Based on current world economic development patterns, the natural evolution of the future international monetary system will be multipolarization, with future international monetary competitiveness mainly manifested as competition between developed and emerging economies, fundamentally determined by economic development foundations.

1.2.2 Divergent Strength Trends Among Developed Economy Currencies is Inevitable; Imbalanced Development Among Emerging Economy Currencies Will Persist Long-term

As the world economy approached the "seven-year itch" after the 2008 global financial crisis, it gradually emerged from the quagmire and entered a relatively stable development period. However, the global economy simultaneously entered a pattern of differentiated growth, with significant differences in growth rates among major economies and obvious divergence. Non-unified recovery paces between developed and emerging economies, as well as within each group, made global monetary policy and financial market competition and development more complex, exacerbating volatility in international financial markets.

Since 2012, the US recovery pace has continuously accelerated. Despite impacts from the "fiscal cliff" and extreme cold weather disasters, US economic growth data showed continuous improvement after excluding interference factors due to gradually strengthening endogenous growth drivers. Particularly since 2013,

the US has consolidated its position as the main engine of global economic growth, with US economic recovery continuing to lead global growth. While the current eurozone economy shows slight improvement, it has not recovered from the heavy blow of the debt crisis, and the outbreak of the Greek debt crisis makes its growth prospects even more uncertain. Japan' s economic stimulus through "Abenomics" has not achieved obvious results, and many structural problems constraining long-term growth remain unresolved.

The rise of emerging economies and the narrowing or even partial surpassing of technological gaps with developed countries will lead to relative declines in the monetary competitiveness of resource-scarce countries like Japan. It is foreseeable that before a new international monetary order emerges, the dollar will remain very strong, while the eurozone' s economic instability will cause the euro' s competitiveness to show a short-term declining trend. Based on recent economic development trends in emerging economies, their growth trends will diverge. The monetary competitiveness of BRICS countries continues to improve, but each currency also shows certain differences. For example, Russia' s currency competitiveness faces great uncertainty in development prospects due to international sanctions and falling oil prices, a major revenue source. India, however, is expected to become a new global growth pole, with relatively fast economic growth and promising prospects for enhanced currency competitiveness. The formation of RMB competitiveness is the organic product of China' s economic strength, financial market scale, and global monetary system demands. Relying on financial reforms and important development strategies such as the "Belt and Road Initiative," RMB' s international competitiveness is expected to achieve sustained and stable improvement.

1.2.3 A New International Monetary Order is Brewing

From the current perspective, from quantitative easing tapering to eventual interest rate hikes, Federal Reserve monetary policy has tightened step by step, running counter to Europe and Japan' s continuous use of loose monetary stimulus, making the "divergence"in developed economy monetary policies noteworthy. Regarding the current international economic situation, changes in US monetary policy may remain one of the key factors affecting global economic growth. The Fed' s contractionary monetary policy and substantial dollar strengthening have also posed various challenges to emerging economies, including financial risk pressures and capital flight pressures. Under these circumstances, how emerging economies can enhance their own currency competitiveness to resist risks brought by US monetary policy fluctuations becomes particularly important.

Currently, emerging economy currencies, represented by the RMB, have launched powerful challenges to developed economy currencies. Promoting the formation of RMB regional competitiveness and joining the IMF Special Drawing Rights (SDR) basket also provides strong support for the RMB to play a more important role on the international monetary stage. The old

international monetary order is quietly changing, and a new international monetary order is brewing. The diversification, complexity, and politicization of monetary competition will become prominent features of future international monetary competition patterns.

1.3 Opportunities and Challenges for China from Changes in the International Monetary Pattern

Globally, US monetary policy has normalized, and its influence on the global economy after interest rate hikes is very significant. Japan and Europe, although still conducting quantitative easing policies, have difficulty achieving expected results, while emerging economies dependent on commodity exports face worrying growth prospects. Under the influence of divergent monetary policy trends among major economies, exchange rate fluctuations among major currencies have intensified, and the current international monetary pattern shows a situation of dollar dominance. Historically, a strong dollar has twice severely impacted the economic development of emerging economies. In the short term, dollar strengthening increases debt burdens for some emerging market countries, and accompanying dollar strength are robust US economic recovery and Fed rate hikes, making dollar capital reflux from emerging markets very significant, thereby triggering liquidity crises in emerging market countries. It is foreseeable that in the short term, emerging economies with current account and fiscal "double deficits" and low reserves will suffer greater impacts. In the medium to long term, changes in the monetary pattern will exacerbate differentiated growth, internal imbalances in monetary competitiveness, and divergent competitiveness development among emerging market economies. For China, current monetary pattern changes bring both challenges and development opportunities.

Challenges mainly concentrate on capital and trade aspects. Dollar strength in the short term creates capital outflow pressure on China, simultaneously increasing the difficulty of cross-border capital management and forecasting, causing domestic liquidity tightening to some extent. During China' s current special period of "three overlapping phases," dollar strengthening also makes the background and problems faced by policies to stimulate domestic demand and economic growth more complex. Meanwhile, dollar appreciation and euro depreciation have significantly impacted China' s imports and exports, mainly increasing exchange rate risks for Chinese enterprises and goods exported to Europe.

The RMB has already joined the SDR and become an international currency. Since August 2015, the RMB has become the world's second-largest trade financing currency and fourth-largest payment currency. RMB exchange rate policy adjustments receive worldwide attention, with adjustment space continuously narrowing. Therefore, current monetary pattern changes will negatively impact China's export growth. Naturally, everything has two sides. The current strong-dollar monetary pattern also helps reduce RMB appreciation pressure, while the resulting persistent weakness in international commodity prices priced and set-

tled in dollars helps reduce future China' s inflation pressure and risks. In the medium to long term, such a monetary pattern also facilitates China' s economic structural adjustment and RMB competitiveness enhancement and development.

Besides the negative impacts of a strong dollar on China, the strong dollar has also pushed the RMB onto the international stage, with more European, American, and emerging market countries recognizing the need to reduce dollar dependence and expressing increasing interest in RMB internationalization. From an investment attraction perspective, this change will increase investment in China, partially stimulating China' s economic structural adjustment and growth, such as promoting financial market opening and modern service industry development. From an outward investment perspective, current monetary pattern changes will also promote Chinese enterprises' "going out" process through the Belt and Road Initiative to some extent, reducing investment costs in emerging economies and Europe. RMB internationalization also signifies the deepening and quality improvement of China' s integration with the global economy. Along with the Belt and Road strategy' s implementation, the establishment of the AIIB, and the opening of free trade zones, China' s connections and cooperation with the world will be continuously consolidated and deepened, which is conducive to further improving RMB competitiveness. Moreover, against the backdrop of global economic rebalancing, this will also promote China' s more active participation in global economic governance, enabling China to adopt more constructive measures in global monetary pattern and financial governance system reforms, which is also beneficial for promoting and consolidating RMB internationalization and its status as an international mainstream currency.

2.1 Connotation of International Monetary Competitiveness

In recent years, as China' s capital account opening, interest rate, and exchange rate marketization have gradually deepened, how to advance currency internationalization while enhancing currency competitiveness and ensuring national economic security has become an important academic topic, prompting relevant research by scholars. Since the 21st century, the dollar' s oligopolistic position has faced challenges from the rising euro due to suboptimal US macroeconomic conditions, thereby introducing the concept of international monetary competitiveness and its influencing factors. Domestically, Chen Yawen and Hu Yong argue that the euro' s launch changed the international monetary pattern, but due to incomplete integration of the eurozone' s money and capital markets, the need for further legal and regulatory integration, and the influence of behavioral inertia and historical traditions, competition between the euro and dollar is a gradual process [**?**]. Chen Yulu 较早 proposed the concept of international monetary competitiveness, noting that it mainly includes competition between early government-issued sovereign currencies and private currencies, and com-

petition among sovereign currencies of different countries after governments took over currency issuance rights. Initial currency competition was confined within a single country, but as governments monopolized currency issuance rights, currency competition gradually evolved into international competition [**?**]. Yu Xuewei (2010) elaborated on the connotation of international monetary competitiveness from broad and narrow perspectives. The broad concept refers to a currency' s radiation power resulting from the combined forces of economic, financial, and various non-economic factors (politics, geography, history, military), while the narrow concept refers to a currency' s ability to settle, trade, and store value across borders beyond its territorial currency scope. He listed several main factors determining international monetary competitiveness, such as output volume and trade volume, financial market development level, confidence in currency value, and network externalities [**?**]. Qiu Zhaoxiang and Su Qin (2008) argue that whether in domestic or international economic activities, money performs the functions of transaction medium, value measure, and store of value. The basis of international monetary competition is the rational choice of economic agents, with influencing factors being currency value and currency usage costs. When currency usage costs remain unchanged, the essence of currency competition is competition among national economic strengths and macroeconomic policies, with the ultimate result being currency substitution [**?**]. Li Changchun (2011) analyzed the international status and competitive landscape of the dollar and euro from perspectives of exchange rate stability and the proportion of settlement currencies in international trade [**?**]. Lü Xiang and Hou Jingchuan (2012) defined international monetary competitiveness as the comprehensive performance of a country or region' s currency in overseas circulation, free convertibility, and reserve capabilities, supported by certain economic and political strength. They proposed four indicators to measure international monetary competitiveness: the proportion of trade settlement in the local currency, capital account openness, the proportion of other countries' reserves, and exchange rate flexibility [**?**].

It is evident that previous conceptual definitions of international monetary competitiveness were based on its influencing factors or monetary functions. These interpretations neglected reflection on the nature of money, considered perspectives were singular, and failed to comprehensively express the connotation of international monetary competitiveness. Therefore, building on previous research and combining the nature of money and the essence of international monetary competitiveness, we reinterpret international monetary competitiveness: International monetary competitiveness is fundamentally based on a country' s credit, comprehensively determined by factors including economic development strength, currency value factors, monetary and financial environment, currency historical inertia, and currency development prospects. It is a relative strength indicator reflecting the performance of that country' s monetary functions in international markets. This interpretation demonstrates that behind international monetary competitiveness lies a comparison of a country' s overall strength, financial environment, and monetary development potential.

As global economic integration deepens, the global economic and financial competition pattern is undergoing transformation, with money and its credit foundation exerting increasingly profound influence on finance. The rise of emerging economies represented by China and India directly drives the global diffusion and enhancement of their currency influence. Meanwhile, currencies of developed countries or regions represented by the US, Europe, and Japan have been impacted, and their global influence is also being shaken. National competition and cooperation are, in a sense, monetary competition and cooperation, which are based on national competition and cooperation. This increase or decrease in monetary competitiveness strength is both a reflection of and a result of changes in the global monetary competition pattern. Against the backdrop of RMB internationalization, this pattern change has been particularly significant in recent decades, making in-depth research on this factor affecting national competition patterns necessary. Accurately grasping the changing trends and influencing factors of various countries' monetary competitiveness can provide important references for formulating domestic and foreign financial and monetary strategies, offer crucial foundations for enterprises' outward investment strategic planning, and enhance national currency presence and sense of belonging.

2.2 Related Theoretical Basis of International Monetary Competitiveness

Exchange rate movements are the most intuitive manifestation of currency competitiveness changes. In a sense, theories related to international monetary competitiveness are essentially exchange rate determination theories. Exchange rate determination theories are abundant, with relatively persuasive theories including purchasing power parity theory, interest rate parity theory, productivity parity theory, and portfolio theory. These theories examine the dominant factors of exchange rate changes from different perspectives.

2.2.1 Productivity Parity Theory

A country' s currency strength is ultimately determined by its productivity level. Zou Pingzuo (2003) creatively proposed and proved the productivity parity theory of exchange rate determination based on analysis of currency' s value foundation and currency pricing theory [**?**].

The natural foundation of value is natural resources. Let r represent natural resources, L represent labor, l represent physical labor, and k represent knowledge, referring to everything spiritual belonging to humans that is useful, including experience, technology, institutions, management, etc., with $L = f(l, k)$. Let the value function be $V = f(r, L)$, where V represents value, which is composed of labor and natural resources. Labor is a function of physical labor and knowledge, meaning value is a function of natural resources, physical labor, and knowledge.

Productivity consists of four elements: labor tools, labor objects, labor, and management, which also represent the total cost of productivity. Total cost reflects the total input of an economy. Through the production process, transforming the value function into a productivity function yields total output, meaning total output is the integral of the production function rather than the integral of total input sum. The turnover frequency of total input is consistent with transaction behavior turnover, thus being the integral of transaction sum. This leads to the conclusion that the productivity cross-section equals money balance. Theoretically, a country' s optimal money supply should equal the sum of productivity components. If money supply and productivity components become imbalanced, excess supply will cause money to flow into non-productive fields, bringing inflation, while insufficient supply will result in underutilization of some resources in the economy.

Productivity input can be expressed as:

$$P = C + T + O + L + M = \varphi_1(C) + \varphi_2(T) + \varphi_3(O) + \varphi_4(L) + \varphi_5(M)$$

Then total output, as the integral of the productivity function, can be expressed as:

$$P_t = \int_0^t [\varphi_1(C) + \varphi_2(T) + \varphi_3(O) + \varphi_4(L) + \varphi_5(M)]\, dt$$

Let capital turnover speed be δ, then the following functional relationship exists:

$$TC = \delta C$$

In the above formulas, O is the labor object, such as raw materials in the production process; T is labor tools in production, such as machinery and equipment; L is labor in the production process. These three elements are all functions of natural resources, labor, and knowledge. Assuming currency circulation speed is v, and setting $c = v\delta$, $M = C$, the following functional relationship can be obtained:

$$M = C = TC\delta$$

This proves that a country' s money stock should equal its productivity cross-section, thereby determining the quantity of currency issuance and currency pricing. We can further derive the relationship between productivity factors in determining that country' s currency value and exchange rates between two countries.

For two countries A and B, their productivity stocks can be expressed as:

$$P_A = \varphi_1(C_A) + \varphi_2(T_A) + \varphi_3(O_A) + \varphi_4(L_A) + \varphi_5(M_A)$$

$$P_B = \varphi_1(C_B) + \varphi_2(T_B) + \varphi_3(O_B) + \varphi_4(L_B) + \varphi_5(M_B)$$

Based on the above inference, let the money stocks of the two countries be:

$$M_A = C_A = \varphi_1(C_A) + \varphi_2(T_A) + \varphi_3(O_A) + \varphi_4(L_A) + \varphi_5(M_A)$$

$$M_B = C_B = \varphi_1(C_B) + \varphi_2(T_B) + \varphi_3(O_B) + \varphi_4(L_B) + \varphi_5(M_B)$$

Now further let a universal currency unit be ω, converting both countries' money stocks to:

$$M_A = C_A = \varphi_1(C_A) + \varphi_2(T_A) + \varphi_3(O_A) + \varphi_4(L_A) + \varphi_5(M_A) = \alpha\omega$$

$$M_B = C_B = \varphi_1(C_B) + \varphi_2(T_B) + \varphi_3(O_B) + \varphi_4(L_B) + \varphi_5(M_B) = \beta\omega$$

Clearly, the unified currency units contained in the two countries' money stocks are:

$$U_A = M_A\alpha\omega, \quad U_B = M_B\beta\omega$$

Obviously, the exchange rate of one unit of Country B' s currency for Country A' s currency ε is:

$$\varepsilon = \frac{U_A}{U_B} = \frac{M_A\alpha\omega}{M_B\beta\omega}$$

On the basis of complete information, prices infinitely approach value, and money demand is determined by the total value of commodity transactions, i.e., GDP over a period. T represents the transaction volume of various goods, which is the integral of productivity over time. The following functional relationship exists:

$$M_t = P_t = \int_0^t pv\,dt = \int_0^t pv(r,l,k)\,dt$$

We can further derive the value foundation quantity of money:

$$\frac{M_t}{\sigma} = \frac{P_t}{\sigma} = \frac{\int_0^t pv\,dt}{\sigma} = \frac{\int_0^t pv(r,l,k)\,dt}{\sigma}$$

For two countries A and B with currencies A_C and B_C, let Country A's currency unit be u_A and Country B' s currency unit be u_B, with a common general currency unit u. Based on the above analysis, first set $u_A = u_B = u$, then the actual value foundation quantity of each country' s currency is:

$$\frac{M_t}{u} = \frac{\int_0^t pv\,dt}{u}$$

Let the actual money supply of the two countries be S_A and S_B, then:

$$S_A = \frac{\int_0^t pv\,dt}{u_A} = \frac{\int_0^t pv\,dt}{u}, \quad S_B = \frac{\int_0^t pv\,dt}{u_B} = \frac{\int_0^t pv\,dt}{u}$$

The exchange rate between the two countries q can be derived as:

$$q = \frac{S_A}{S_B} = \frac{\int_0^t pv\,dt/u_A}{\int_0^t pv\,dt/u_B} = \frac{u_B}{u_A}$$

From the above productivity parity theory, we can see that the productivity foundation is the fundamental condition determining exchange rate movements. According to productivity parity theory, productivity is a function of resources r, physical labor l, and knowledge (referring to everything spiritual belonging to humans that is useful, including experience, technology, institutions, management) k. Therefore, the resources, labor, and knowledge behind a country' s currency are the dominant factors determining currency exchange rates and international monetary competitiveness.

2.2.2 Purchasing Power Parity Theory

Purchasing power parity theory is based on arbitrage across different markets and the law of one price. The law of one price concludes that under open economy conditions, if transaction costs, tariffs, and other factors for tradable goods are not considered, the price of the same tradable goods should be consistent across regions. This conclusion can be expressed as:

$$e = \frac{p}{p^*}$$

where e represents the exchange rate under direct quotation, p is the domestic price, and p^* is the foreign price. The law of one price has two preconditions: first, goods in different regions must be homogeneous without any quality differences; second, goods prices must be flexibly adjustable with elastic prices and no lag.

Purchasing power parity theory is mainly divided into absolute purchasing power parity and relative purchasing power parity. Absolute purchasing power parity is the most basic form, directly derived from the law of one price. Its general form implies that the exchange rate depends on the ratio of price levels of tradable goods measured in different currencies, i.e., the ratio of purchasing power of different currencies for tradable goods. Relative purchasing power parity is the most classic exchange rate determination theory. According to this theory, relative changes in price levels between two countries lead to exchange rate changes, which are direct manifestations of international monetary competitiveness strength. Therefore, relative changes in price levels are important drivers of changes in international monetary competitiveness.

2.2.3 Interest Rate Parity Theory

Keynes first established the classical interest rate parity theory, with basic viewpoints elaborated in his book "A Tract on Monetary Reform." His ideas can be

summarized as: the difference between forward and spot exchange rates should equal the interest rate differential between different economies, with forward exchange rates fluctuating around interest rate parity according to supply and demand conditions. Interest rate differentials between two countries lead to arbitrage capital flows internationally, and such capital flows determine short-term exchange rates. Starting in the 1950s, some Western scholars proposed modern interest rate parity theory based on classical theory, with the core viewpoint that the difference between forward and spot exchange rates is determined by interest rate differentials between two economies. High-interest-rate country currencies must be at a discount in the forward market, while low-interest-rate country currencies must be at a premium.

2.3 Influencing Factors of International Monetary Competitiveness

According to exchange rate determination theory, exchange rate movements are determined by factors including national credit, productivity foundation, financial and economic environment, currency value factors, and development prospects. Currency exchange rate changes are the most intuitive manifestation of currency competitiveness changes, so factors determining exchange rates also determine currency competitiveness. Among these main factors, national credit and productivity foundation are the fundamental conditions determining currency competitiveness. As an international currency circulating worldwide, its issuance, circulation, and exchange within the issuing country must be supported by fully open financial markets. A sound and mature macro-financial environment promotes international currency development, while sound international currency development inevitably promotes optimization and improvement of the domestic financial environment. Money has value measure and store of value functions, so currency value stability and credit conditions are very important. As an international currency, stable value and good monetary credit can consolidate international currency status and enhance its competitiveness. From a temporal dimension, the world currency history has undergone layers of evolution to establish the current paper money standard system, and the establishment of new international currency status will accompany changes and updates in the entire monetary system, affecting relevant countries' economic development to varying degrees. Therefore, the importance of consolidating international currency status and sustained competitiveness formation is self-evident.

3.1 Construction of the International Monetary Competitiveness Index System

Based on the previous analysis of exchange rate determination theory and main influencing factors of monetary competitiveness, this research group summarizes factors affecting monetary competitiveness into four categories: basic factors of monetary competitiveness, currency value factors, environmental factors, and

sustainable development factors. Basic factors mainly include resource endowments, labor, knowledge, production efficiency, etc. Currency value factors mainly include factors affecting domestic and foreign currency value and currency appreciation factors. Environmental factors refer to the domestic financial market and financial development environment that a currency relies on, including financial stability, financial development level, and financial openness. Sustainable competitiveness factors mainly include currency development potential and currency influence and internationalization level. The conceptual framework and logic for constructing and releasing the international monetary competitiveness index system are shown in Figure 1 [Figure 1: see original paper].

[Figure 1: see original paper]

These four categories of factors influencing monetary competitiveness are both interconnected and have their own emphases. To make the calculated monetary competitiveness index more accurate and reasonable, this project group adopts a systematic approach to construct the monetary competitiveness index (as shown above). Specifically, these four component indices are the monetary base competitiveness index, monetary value competitiveness index, monetary environment competitiveness index, and monetary sustained competitiveness index. The overall international monetary competitiveness index is a composite index based on these four component indices. Considering the world economic and monetary pattern and data availability, this project group selected and collected data related to 23 currencies from G20 countries/regions and other major emerging markets, calculated their monetary competitiveness component indices and overall indices, and ranked them based on calculated index values. Simultaneously, to better understand current trends in the international monetary competition pattern, we also separately released developed economy monetary competitiveness indices, emerging economy monetary competitiveness indices, and BRICS monetary competitiveness indices for comparison. These category indices have important practical significance for comparing changes in various countries' monetary competitiveness and analyzing their stages.

3.2 Construction of the International Monetary Competitiveness Index Indicator System

When constructing the index, secondary indicators must be selected for the four component indices of international monetary competitiveness (monetary base competitiveness, monetary value competitiveness, monetary environment competitiveness, and monetary sustained competitiveness). Based on the previously analyzed productivity parity theory and monetary competitiveness influencing factors, this project group selected resource endowments, labor level, national education level, scientific and technological innovation capability, national governance level, production efficiency, and output level as secondary indicators for monetary base competitiveness. Sovereign currency credit, main currency value change factors, and currency value stability factors were selected as secondary

indicators for monetary value competitiveness. For the monetary environment competitiveness index, financial stability, financial infrastructure, and financial openness were selected as secondary indicators. For monetary sustained competitiveness, economic growth, financial development, currency internationalization level, and currency influence were selected as secondary indicators. The entire indicator system composition is shown in Figure 2 [Figure 2: see original paper].

[Figure 2: see original paper]

3.2.1 Selection of Monetary Base Competitiveness Indicators

Since resource types are abundant, selecting which resource types to reflect resource endowments is crucial. Considering data availability and the high positive correlation between overall resource endowment levels and land area, this project group selected land area as a proxy variable for resource endowments. Labor level is measured by total population, labor force participation rate, and labor force population. Higher education is the most prominent manifestation of a country' s education level, so higher education enrollment rate was selected to reflect national education level. Scientific and technological innovation capability is measured by the number of resident patent applications, number of R&D personnel, and R&D expenditure as a percentage of GDP. National governance level indicators in monetary base competitiveness are measured by government effectiveness index, regulatory quality index, rule of law index, and political and social stability index. For production efficiency measurement, this research group draws on the World Economic Forum' s annual "Global Competitiveness Report," selecting per capita GDP and per capita GNI, while also adding urbanization rate as an indicator. Output level is reflected by GDP (calculated by purchasing power parity) and GNI index.

3.2.2 Selection of Monetary Value Competitiveness Indicators

For measuring monetary value competitiveness, this research group mainly considers sovereign currency credit, main currency value change factors, and currency value stability factors. For sovereign currency credit, sovereign currency credit ratings published by Fitch Ratings and countries' international reserve levels are selected as measures.

3.2.3 Selection of Monetary Environment Competitiveness Indicators

For calculating the monetary environment competitiveness index, the analysis focuses on three aspects: financial stability, financial infrastructure, and financial openness.

3.2.4 Selection of Monetary Sustained Competitiveness Indicators

Monetary sustained competitiveness is an important factor affecting monetary competitiveness. Based on previous analysis, currency development potential

and currency influence are important reflection indicators of monetary sustained competitiveness. Therefore, for monetary sustained competitiveness, this research group selects economic growth, financial development, currency internationalization rate, and currency influence for evaluation.

3.3.1 Sample Selection

Considering that sample currencies should satisfy conditions of broad representativeness and data availability, this research group selected 23 currencies from 23 countries/regions, including G20 countries/regions and major emerging market countries. These currencies are currently important currencies circulating in international financial and trade markets, thus well reflecting trends in the world currency pattern. Sample countries and their currency names are detailed in Table 5 .

3.3.2 Determination of Indicator Direction and Weights

After completing the monetary competitiveness indicator system, it is necessary to identify and measure the contribution direction and degree of each indicator to monetary competitiveness, providing a reliable foundation for measuring and releasing the monetary competitiveness index. Accurately determining indicator direction is particularly important. Combining previous theoretical foundations and influencing factor analysis of monetary competitiveness, this project group ultimately determined the contribution direction of tertiary indicators, as shown in Table 6 .

On the basis of identifying each indicator' s contribution direction to monetary competitiveness, this project group further determined weights for indicator systems at various levels. Since many factors affect monetary competitiveness, subjective methods cannot accurately determine factor rankings, while some objective weighting methods like principal component analysis require high correlations among variables. Considering the evaluation system needs fairness and uniformity, and when factor priorities cannot be determined and variables are numerous, the equal weighting method is an effective approach. Therefore, this research group, referencing the weight determination method of the World Economic Forum' s "Global Competitiveness Report," selected the equal weighting method to construct the international monetary competitiveness index. Specifically, the weights for the four primary indicators are 1/4 each. Secondary indicator weights under monetary base competitiveness are 1/7 (1/28 of total index), under monetary value competitiveness are 1/3 (1/12 of total index), under monetary environment competitiveness are 1/3 (1/12 of total index), and under monetary sustained competitiveness are 1/4 (1/16 of total index). Similarly, tertiary indicator weights are determined by the number of tertiary indicators under their respective secondary indicators.

3.3.3 Data Sources

Based on theoretical foundations and influencing factor analysis of international monetary competitiveness, this project group decomposed monetary competitiveness into four component competitiveness indices, selecting 17 secondary indicators and 51 tertiary indicators for measurement. Among these indicator variables, constrained by data availability, the time starting points for "number of ATMs per 100,000 people" and "commercial bank branches per population" are 2004, capital account openness starts in 2005, while all other indicators start in 1999.

Indicator sources for constructing the international monetary competitiveness index include: World Bank, International Monetary Fund (IMF), Bank for International Settlements (BIS), OECD database, Fitch Ratings, and some national central bank websites.

3.3.4 Data Processing

Raw data were organized and edited through manual inspection and cross-comparison. Missing value treatment methods mainly include: mean interpolation, moving average interpolation, and regression interpolation. For important indicators missing in individual countries, we used the average of similar countries' indicators as proxy variables to reduce errors caused by data missing, such as for Nordic countries, Asian "Four Tigers" countries/regions, and BRICS countries.

To eliminate dimensional differences in raw data and make indicator variables comparable, this research group uniformly standardized each indicator. To avoid situations where some countries' indicator scores become zero, the general 0-1 standardization method was modified. For positive indicators, the calculation formula is:

$$\text{Score} = 1 + 9 \times \frac{\text{Country Indicator Value} - \text{Sample Minimum}}{\text{Sample Maximum} - \text{Sample Minimum}}$$

Thus, positive indicator observation values range from 1 to 9. For negative indicators, standardization requires positive transformation first, with the calculation formula modified as:

$$\text{Score} = 1 + 9 \times \frac{\text{Sample Maximum} - \text{Country Indicator Value}}{\text{Sample Maximum} - \text{Sample Minimum}}$$

The above is the standardization method for tertiary indicators. For secondary indicators, referencing the calculation method of the "Global Competitiveness Report," we take the average of index scores under secondary indicators. The advantage of this method is that the more tertiary indicators under a secondary indicator, the more sufficient the information reflection. The calculation formula

is:

$$\text{Secondary Indicator Score} = \frac{1}{K}\sum_{i=1}^{K}\text{Tertiary Indicator Score}_i$$

3.3.5 Frequency and Base Period Selection

As mentioned earlier, many factors affect monetary competitiveness, including basic factors, currency value factors, financial environmental factors, and sustainable development factors. Proxy variables for these factors are generally macro-level data for countries or regions, with most indicator variables being annual. This research group, referencing existing experience and practices, also selected annual data as sample data for constructing the monetary competitiveness index.

To make index or indicator scores intuitively comparable and analyzable, this project group selected a certain year' s indicator score for a currency as the base period, with other years or currencies using that year' s index score as the base period. This base period-based index score calculation is limited to the overall monetary competitiveness index and the four monetary competitiveness component indices. For secondary and tertiary indicator scores, we use initially calculated score results. We selected 1999 RMB competitiveness overall index, base competitiveness index, value competitiveness index, environment competitiveness index, and sustained competitiveness index as base periods, with base period scores of 100, and converted other years' index scores accordingly, making this index representation more comparable.

3.4 Release of the International Monetary Competitiveness Index

Using the above methods, data, and weights, this project group calculated the competitiveness changes of each currency from 1999 to 2014. Based on measurement results, we plan to rank primary, secondary, and tertiary indicators for sample countries/regions' monetary competitiveness. For this purpose, this research group selected line charts, radar charts, bar charts, and tables to summarize, edit, and release conclusions. While editing the index, we also separately calculated developed economy monetary competitiveness, emerging economy monetary competitiveness, and BRICS monetary competitiveness index scores.

[Figure 3: see original paper] [Figure 4: see original paper]

Figures 3 and 4 show the trends of international monetary competitiveness indices for developed and emerging (developing) economies from 1999 to 2014. It can be seen that among developed economy currencies, the dollar has maintained a core dominant position in monetary competition since the 1990s. Against the backdrop of mild global economic recovery, the dollar' s competitiveness briefly declined after the 2008 financial crisis but gradually strengthened again after

2010. Among emerging economy currencies, RMB competitiveness has shown a steady improvement trend, with more obvious enhancement after 2008. After 2011, the advantages of RMB and Korean won over other emerging economy currencies have continuously expanded.

Table 7 shows the international monetary competitiveness index scores. Overall, in the post-financial crisis era, China has gradually caught up with the US in many aspects related to RMB competitiveness, even surpassing in some evaluation indicators, but gaps in some influencing factors remain obvious. The post-financial crisis era has brought opportunities for RMB internationalization and competitiveness enhancement, but breaking through dollar dominance in the short term remains difficult. Currently, domestically we should consolidate all foundations constituting RMB competitiveness to achieve balanced development and highlight advantages; externally we should leverage the Belt and Road Initiative to promote RMB internationalization, and use the opportunity of joining the SDR to enhance RMB' s international influence and competitiveness.

4.1.1 RMB Competitiveness Index Change Trends

[Figure 5: see original paper]

Based on the above-constructed international monetary competitiveness index indicator system and using equal weighting calculation methods, this research group obtained RMB competitiveness indices and various sub-indices from 1999 to 2014, with change trends shown in Figure 5.

From the figure, RMB competitiveness indices first declined then rose from 1999 to 2014, gradually increasing with fluctuations. Data show RMB competitiveness indices experienced some decline from 2002 to 2004, then maintained a continuous upward trend, reaching a stage peak in 2013. Although the 2014 RMB monetary competitiveness index slightly decreased compared to 2013, it did not change the long-term growth trend.

Overall, RMB competitiveness has steadily strengthened. Various sub-indicators also show that since 2005, RMB competitiveness has achieved more comprehensive improvement. However, it must be recognized that enhancing currency competitiveness and RMB internationalization is not a "smooth path." Although the RMB' s international influence is growing, the slight decline in competitiveness index in 2014 indicates that the RMB becoming a mainstream currency recognized by all countries remains a long-term process. Therefore, while continuously cultivating and seeking advantages, we must also address weaknesses. It is important to emphasize that although the 2014 RMB competitiveness index experienced a small correction, the upward trend in RMB competitiveness will not fundamentally change.

4.1.2 Structural Change Trends of RMB Competitiveness Index

[Figure 6: see original paper]

Based on the index system constructed by this research group and using indicator scores from sub-indices, we respectively drew radar charts of main indicators for 1999, 2007, and 2014. As shown in Figure 4-2, seven indicators including resource endowments, labor level, national education level, and scientific and technological innovation capability measure RMB' s base competitiveness. Across the three observation years, each indicator value maintained relatively consistent growth trends. For example, scientific and technological innovation capability and output level scores in 2014 increased substantially compared to 1999, while resource endowment indices remained basically unchanged at medium levels. Another key indicator, labor level index, has always maintained high ratings, reflecting China' s advantage in human resources. It should be noted that production efficiency, national education, and national governance level indicators have relatively low scores, representing weaknesses in our base competitiveness system that require further improvement. Overall, from 1999 to 2014, RMB base competitiveness indicator scores showed obvious growth trends, with development of base competitiveness components providing foundations and guarantees for improving our monetary competitiveness.

Comprehensive examination of various evaluation indicators reveals that China' s scientific and technological innovation capability, output level, sovereign currency credit, main currency value change factors, economic growth, and financial development scores have achieved obvious improvements over the past decade. Reviewing economic and financial development history, after the 1997 Asian financial crisis, China implemented a series of social and financial reforms, achieving goals of increasing output and promoting economic development, and enhancing currency functions as exchange medium, value measure, payment method, and value store through exchange rate reforms. Consequently, the above indicators achieved certain growth. However, the gear-shaped trend shown in Figure 4-2 indicates that development of RMB competitiveness sub-indicators is unbalanced, with some low-scoring, slow-improving indicators still existing, such as financial openness, currency internationalization, and currency influence. The main reason for this phenomenon is that the RMB has not yet reached the level of an international mainstream currency, and the capital account is not fully open to the outside world. As Zhou Xiaochuan [**?**] pointed out, RMB internationalization and related issues of capital account convertibility, capital market development and opening will be a process of moving forward amid debate and gradually building consensus. Moreover, facing complex international economic situations and monetary competition landscapes, promoting RMB internationalization and competitiveness enhancement can be described as a long and arduous task.

4.2.1 Comparison of RMB Competitiveness with Other Emerging Economy Currencies

[Figure 7: see original paper]

The "BRICS" represent major emerging economies with competitiveness and development potential. This research group uses the other four BRICS currencies as representatives of other emerging economy currencies for comparative analysis with the RMB (as shown in Figure 7). From the perspective of comprehensive competitiveness indices, RMB competitiveness has maintained good growth momentum over the past decade, showing obvious advantages over the Russian ruble, South African rand, Brazilian real, and Indian rupee.

4.2.2 Comparison of RMB Competitiveness with Developed Economy Currencies

[Figure 8: see original paper]

Figure 8 compares the competitiveness indices of the dollar, yen, euro, and pound with the RMB. From comprehensive indices, although the competitiveness of these four currencies has declined in recent years, they had obvious advantages over the RMB before 2009. After 2009, RMB competitiveness indices continued to rise, narrowing the gaps with the dollar, pound, and euro. By 2014, RMB competitiveness indices had slightly surpassed the euro and further narrowed the gap with the pound, but still had a large gap compared with dollar competitiveness. The yen engaged in currency competition and internationalization earlier, occupying a relatively important position in the international monetary system. However, over the past 20 years, the yen has been affected by persistent domestic deflation and frequent dollar exchange rate fluctuations, causing the international community to lose confidence in yen stability. Consequently, the yen has performed poorly in value competitiveness and sustained competitiveness, with its competitiveness index continuously declining and falling behind the RMB. Additionally, the eurozone and euro, as the world' s second-largest economy and second-largest currency, once had broad and bright development prospects. However, the recent European sovereign debt crisis has plunged European banking into difficulties, and negative impacts such as economic growth recession have caused the euro index to show a fluctuating downward trend. The UK, relying on its complete and developed financial markets, still ranks high in environmental competitiveness, and the pound' s overall competitiveness index shows an obvious upward trend, opposite to the euro' s trajectory.

4.3 Analysis of Competitiveness Index Change Trends Between Developed and Emerging Economies

[Figure 9: see original paper]

The average competitiveness level of developed economy currencies is signifi-

cantly stronger than that of emerging economy currencies. Even compared with the BRICS countries, which lead emerging economies in economic strength, developed economies' average monetary competitiveness still holds a large advantage. From a temporal perspective, the average competitiveness gap between developed and emerging economy currencies is continuously narrowing, increasing the possibility of diversification in the future international monetary system. The comparison results for the RMB are very optimistic, with RMB competitiveness indices comparable to developed country averages, providing a foundation and guarantee for further promoting RMB internationalization and enhancing RMB competitiveness.

4.4.1 Forecasting Method

By observing international monetary competitiveness indices and their component indices, we find they mostly exhibit characteristics of nonlinear time series, making traditional linear regression forecasting methods inapplicable. Considering that most index sequences have autocorrelation, this research group considers using nonlinear time series forecasting models. After referencing various macroeconomic indicator forecasting methods and combining characteristics of monetary competitiveness indices, we ultimately selected the Autoregressive Moving Average (ARMA) model as the forecasting model for monetary competitiveness indices. The ARMA model is a time series modeling method proposed by Box and Jenkins (1970) [**?**].

4.4.2 Forecasting Results

[Figure 10: see original paper] [Figure 11: see original paper]

Figure 10 shows forecasted values for RMB monetary competitiveness indices and component indices for 2015-2016. It can be seen that RMB' s overall competitiveness index declined significantly in 2015 and showed a stabilizing trend in 2016. From the forecasted values of RMB component indices, RMB' s base competitiveness and sustained competitiveness did not decline significantly, indicating that fundamental factors maintaining China's currency competitiveness have not changed. In contrast, both RMB' s value competitiveness and environmental competitiveness factors decreased significantly, which are the main reasons for the decline in RMB comprehensive competitiveness. The decline in these two competitiveness types reflects signs of recession in RMB' s monetary and financial environment. RMB competitiveness indices and component indices began stabilizing in 2016, indicating that the decline in RMB monetary competitiveness is only temporary, and after brief adjustment, it will return to an upward trend.

Figure 11 shows that developed economy currencies' overall competitiveness also declined under the leadership of major currencies like the dollar, while emerging economy currencies' overall competitiveness showed an upward trend. Interestingly, against the backdrop of declining overall competitiveness of BRICS

currencies, emerging economies' monetary competitiveness showed an upward trend, indicating that emerging economies outside the BRICS have improved their monetary competitiveness more significantly. That is, while BRICS currency competitiveness enhancement has slowed, other emerging economy currencies have performed relatively well.

4.5 Discussion on Revision of RMB Competitiveness Index

This research group believes that both world economic organizations and Chinese statistical agencies have seriously underestimated China' s monetary base competitiveness hard power, particularly output levels. This may cause underestimation of RMB base competitiveness and overall competitiveness levels. Therefore, this section discusses the revision of RMB competitiveness indices. We revise RMB competitiveness indices based on GDP data estimated from the "Penn World Table" (PWT) and GDP data provided by the World Bank. The PWT database is one of the most widely used databases in economics, with usage rates far exceeding the World Bank' s "World Development Indicators" and IMF' s "World Economic Outlook" [**?**]. We discuss RMB competitiveness index revision based on the underestimation level of "hard power."

Specifically, this research group first compared China' s actual GDP (in 2005 US dollars) from the World Bank with actual GDP (in 2005 US dollars) from PWT to calculate the degree of underestimation of China' s actual GDP. Then, we selected output level in RMB base competitiveness indicators as the underestimation indicator and weighted the weight of output level based on the calculated underestimation degree of China' s actual GDP. While keeping the weights of RMB environmental competitiveness, value competitiveness, and sustained competitiveness unchanged, we correspondingly adjusted the calculation weights of six secondary indicators under base competitiveness to obtain revised indices. For comparison convenience, we still used 1999 RMB competitiveness as the benchmark to revise relevant RMB competitiveness indices. The revised RMB competitiveness index is shown in Figure 12 [Figure 12: see original paper].

[Figure 12: see original paper]

Figure 12 reflects the RMB competitiveness index and revised RMB competitiveness index. It can be seen that the revised RMB competitiveness index has been slightly higher than the previously calculated RMB competitiveness index since 2005, especially after 2007, when the revision magnitude continuously increased —a period when China' s comprehensive national power grew rapidly. Figure 13 [Figure 13: see original paper] shows the comparison between the revised RMB competitiveness index and other SDR currency competitiveness indices. From the revised index, we can see that RMB competitiveness index has surpassed the yen since 2011 and approached the competitiveness of the pound and euro. Thereafter, RMB competitiveness index has gradually equaled the competitiveness of the pound and euro. Along with the decline in euro competitiveness in 2014, RMB competitiveness index ranks third after the dollar and pound.

Moreover, RMB competitiveness has maintained a rapid growth trend, and the gap with dollar competitiveness is gradually narrowing.

[Figure 13: see original paper]

In summary, this research group believes that due to underestimation of "hard power,"RMB competitiveness indices are somewhat underestimated, and revised RMB competitiveness indices can better reflect the RMB' s true competitiveness. However, since "underestimation" is characteristic of China, adjusting weights does not conform to other countries' situations. To ensure measurement standardization and fairness, our competitiveness indices remain based on the published versions, with this section only presenting ideas and insights on RMB competitiveness underestimation and attempting revisions.

5.1 Research Conclusions

Based on objective data-based quantitative analysis and demonstration, this project constructed an international monetary competitiveness index system from four aspects: monetary base competitiveness, currency value competitiveness, environmental competitiveness, and sustained competitiveness across various countries (regions). Evaluation results show that this indicator system can provide scientific and reasonable assessments of national currency competitiveness levels, offering robust reference bases for international financial strategy formulation and policy implementation.

Analysis of international monetary competitiveness index calculation results indicates that developed economy currencies, led by the dollar, generally have higher competitiveness than emerging economy currencies. Leveraging advantages in productivity foundation, economic strength, and international trade scale, the dollar and pound have maintained very strong competitiveness for decades. In the early years after the euro' s birth, its competitiveness ranked second only to the dollar, but recent financial crises and sovereign debt crises have significantly negatively impacted the eurozone' s finance and trade, causing the euro' s international competitiveness level to drop substantially. Similarly, the yen shows the same trend due to declining monetary base competitiveness. Notably, the Singapore dollar' s competitiveness level has always ranked high. Although Singapore is relatively weak in economic and trade scale, its advantages in financial development level, financial openness, production efficiency, and national governance have enabled it to achieve relatively high monetary competitiveness. Overall, developed economy monetary competitiveness shows a slow declining trend, while emerging economy monetary competitiveness shows a slow rising trend, with the gap between them gradually narrowing.

In recent years, emerging economy monetary competitiveness has generally shown an upward trend, with the Korean won and RMB ranking at the forefront. RMB competitiveness surpassed the Korean won in 2008, ranking first among emerging economies. Compared with developed economies, emerging economies are generally weaker in environmental competitiveness and sustained

competitiveness. Notably, emerging economy monetary competitiveness indices began showing signs of slowing improvement in 2014, particularly in monetary sustained competitiveness. Among emerging economies, BRICS monetary competitiveness performance has been relatively stable, with RMB competitiveness showing the most significant improvement.

With China' s sustained and stable economic growth and increasing economic size, RMB base competitiveness has surpassed the yen and pound in recent years. RMB value competitiveness and sustained competitiveness have exceeded the average level of developed economy currencies. In terms of monetary environment competitiveness, RMB environmental competitiveness has improved with the financial environment, but many deficiencies remain, showing obvious gaps not only with developed economy currencies like the dollar, euro, and pound but also without significant advantages compared to emerging economy currencies. Overall, RMB comprehensive competitiveness has surpassed the average level of developed economy currencies. However, with the dollar' s continuous strengthening and rapidly changing international political and economic environments, the process of further improving RMB competitiveness and expanding RMB international influence is by no means smooth sailing.

What requires our close attention is that RMB base competitiveness has ended three consecutive years of growth, even showing obvious decline in 2014, while value competitiveness, environmental competitiveness, and sustained competitiveness have all declined to varying degrees. After experiencing high-speed development, China' s investment- and factor-driven growth model has become increasingly unsustainable. China' s economic development has entered a transformation and quality improvement period. The gear-shaped radar chart analysis of RMB competitiveness shows that development of RMB competitiveness influencing factors is unbalanced, with significant room for improvement. While some indicators reflecting "quantity" already rank among the world' s top, many indicators reflecting "quality" lag behind, consistent with China' s current objective requirement to improve economic development quality. The key to improving "quality" lies in innovation and industrial upgrading. Given the current situation, China needs stronger top-level design and coordination to advance further reforms, focusing industrial policies on fundamental aspects such as education, scientific research, intellectual property protection, and financial system reform to build a stable foundation for RMB competitiveness.

5.2 Policy Recommendations for Enhancing RMB Competitiveness

The "13th Five-Year Plan" explicitly proposes that China will expand two-way financial opening, orderly achieve RMB capital account convertibility, promote RMB inclusion in Special Drawing Rights, and promote the RMB becoming a convertible and freely usable currency. It will also relax restrictions on overseas investment remittances, promote two-way capital market opening, and improve and gradually cancel domestic and foreign investment quota restrictions. Mean-

while, the Chinese government is laying out China's global development strategy in response to international situation changes. Enhancing RMB competitiveness involves not only improving the RMB' s intrinsic value but also a systematic project involving productivity, capital, foreign exchange, markets, and international cooperation. Enhancing RMB competitiveness is a means that embodies the goal of achieving global monetary pattern governance. To cooperate with China' s outward economic strategic layout, policy recommendations for enhancing RMB competitiveness are as follows.

5.2.1 Fully Understand the Inherent Laws of Monetary Competitiveness and Formulate Effective Strategies for Enhancing RMB Competitiveness

Monetary competitiveness has its own development laws. In the process of enhancing RMB international competitiveness, it is necessary to fully recognize that RMB competitiveness enhancement is a long-term process with both risks and opportunities. The US surpassed Britain to become the world' s largest economy in the early 20th century, but the dollar did not truly replace the pound as the world currency hegemon until the 1940s, demonstrating that enhancing sovereign currency competitiveness is a long-term process. Monetary base competitiveness, monetary environment competitiveness, value competitiveness, and sustained competitiveness constitute the foundation of monetary competitiveness. Enhancing and surpassing monetary competitiveness is not a "paint-by-numbers" process. For the RMB, the process of competitiveness enhancement is full of opportunities and challenges, making full understanding of monetary competitiveness' s inherent laws particularly important. From a historical perspective, Britain achieved the pound' s international currency status through rapid global trade expansion, while the US leveraged WWII opportunities to achieve dollar global hegemony through the "double peg" Bretton Woods system. Any emerging reserve currency must compete with existing sovereign reserve currencies. Therefore, for the RMB, it is necessary to combine China' s national conditions to form its own core monetary competitiveness, steadily promote and achieve comprehensive RMB strength improvement, and participate in global monetary pattern adjustment and governance through enhanced RMB competitiveness. In this process, effective strategies must be formulated to expand paths for RMB competitiveness enhancement, achieving overall improvement and breakthroughs from multiple dimensions including economic foundation, production efficiency, financial markets, exchange and interest rates, and monetary cooperation and competition.

5.2.2 Deeply Comprehend the Connotation of Monetary Competitiveness and Expand Multi-dimensional Path Choices for Enhancing RMB Competitiveness

From a competitive perspective, economic foundation, currency value stability, financial environment, and currency influence determine a sovereign currency'

s comprehensive competitive strength. Although multiple mainstream currencies can coexist in international foreign exchange markets, and non-competitive monetary cooperation theory and euro practice demonstrate the possibility of monetary cooperation, monetary competition remains the main trend in international monetary development. Enhancing a country or region' s currency competitiveness is a systematic and multi-dimensional project. Expanding enhancement paths to achieve RMB competitiveness improvement is of major practical significance for China' s sustained and healthy economic development.

This research group believes that we can focus on four aspects—monetary base competitiveness, monetary environment competitiveness, monetary value competitiveness, and monetary sustained competitiveness—to explore RMB international competitiveness enhancement paths suitable for China' s national conditions. Specifically: (1) Improve China's total factor productivity level to enhance RMB competitiveness from the production side; (2) Steadily advance RMB exchange rate system reform to enhance RMB competitiveness from the currency side; (3) Use "Internet Plus Finance"as a breakthrough to enhance RMB competitiveness from the financial service side; (4) Reasonably guide China' s "capital going out" to enhance RMB competitiveness from the capital side; (5) Rely on the "Belt and Road" national development strategy to enhance RMB competitiveness from the trade side.

(1) Improve China' s total factor productivity level to enhance RMB competitiveness from the production side. China' s economy faces a sensitive period of the "middle-income trap," and the factor-investment-driven development model that supported China's rapid economic growth over the past decades urgently needs transformation. Improving total factor productivity can promote China' s supply-side structural reform. Monetary competitiveness index research shows that improving total factor productivity can directly and indirectly enhance RMB base competitiveness, environmental competitiveness, and sustained competitiveness, thereby improving RMB international competitiveness from the production side. First, improving total factor productivity can promote high-quality economic growth. Technological development and resource reallocation to higher-efficiency industries are widely recognized as the main drivers of total factor productivity growth, with the key lying in technological innovation. In addition to traditional measures such as increasing education and R&D investment, special attention should be paid to innovation in small and medium-sized enterprises. The US successfully implemented the "Small Business Innovation Research Program (SBIR)" in the 1980s to address declining international competitiveness of US enterprises, which China should actively learn from. Currently, fiscal and financial measures can be used to increase support for innovation research in small and medium-sized enterprises, focusing on promoting total factor productivity improvement. Second, improving total factor productivity helps China deleverage. Since China' s leverage-increasing policies stem from slowing output growth, with the help of structural reforms, total factor productivity growth may exceed debt accumulation speed, thereby reducing the debt-to-GDP ratio. Third, improving total factor productivity

can promote institutional structural adjustments and improve social resource allocation efficiency. Potentially effective channels include reducing preferential treatment for state-owned enterprises and local government financing, improving credit resource allocation efficiency, relaxing service industry regulation and introducing more competition, and further creating conditions for streamlining administration and increasing government transparency.

(2) Steadily advance RMB exchange rate system reform to enhance RMB competitiveness from the currency side. RMB international competitiveness is more reflected in the global resource allocation capability supported by the RMB as a carrier. Over 30 years of reform and opening up, the RMB' s international influence has continuously improved, with basic exchange rate stability being an important factor. Exchange rate issues are closely related to currency value competitiveness and base competitiveness, but the current RMB exchange rate formation mechanism remains imperfect, and RMB exchange rates still lack flexibility. This research group believes that while consolidating the advantage of currency value stability, we should timely and steadily accelerate RMB exchange rate system reform, enhance RMB exchange rate flexibility, and improve RMB international competitiveness from the currency side. Specific measures include enhancing RMB exchange rate flexibility through two-way floating to reduce market expectations of one-way RMB changes, increasing RMB exchange rate elasticity, and thereby enhancing market participants' confidence in RMB asset safety and reliability; expanding foreign exchange market transaction scale by promoting diversification of foreign exchange participants, marketization of transaction methods, and diversification of exchange rate transaction varieties to hedge exchange rate risks; accelerating investment and financing system and interest rate marketization reforms to provide a good internal environment for RMB exchange rate formation mechanism marketization; combining China's economic "new normal,"increasing two-way exchange rate fluctuations to accelerate RMB exchange rate structural adjustment while controlling the pace of capital account marketization, steadily advancing capital account opening, thereby achieving RMB competitiveness enhancement from the currency side.

(3) Use "Internet Plus Finance" as a breakthrough to enhance RMB competitiveness from the financial service side. Under traditional financial business models, small and medium-sized enterprises universally face financing difficulties and high costs. The concept of "inclusive finance" is to enable enterprises and households to obtain various financial services at reasonable prices. Therefore, how to effectively guide finance to efficiently serve the real economy and enhance RMB competitiveness by improving monetary base competitiveness is an urgent issue requiring consideration. In the 2015 "Two Sessions" report, the "Internet Plus" action plan was elevated to national strategic height as an important measure to ensure growth. The Internet' s sharing nature beyond time and space constraints has brought human society into a new communication platform. Deep integration of the Internet and finance will facilitate the realization of inclusive finance, comprehensively improve financial

services' level of serving real economic development, and improve financial market resource allocation efficiency. In implementing "Internet Plus Finance," we should take financial services as the foundation, customer experience as the center, big data as the basis, and risk control as the guarantee to achieve integration from form to substance, allowing finance to return to its essence of serving the real economy. We should use Internet spirit, methods, concepts, and technical tools to transform traditional lending markets, innovate and develop capital markets, and provide strong financial support for traditional industry upgrading and emerging industry development by improving Internet financial service levels and capabilities, thereby enhancing RMB base competitiveness through high-quality real economic development.

(4) Reasonably guide China' s "capital going out" to enhance RMB competitiveness from the capital side. A series of initiatives advocated by China, such as the AIIB and Silk Road Fund, have already signaled policy encouragement for "capital going out." Pursuing further "capital going out" is not only beneficial for exporting currency stock and achieving diversified foreign exchange reserve investment but also beneficial for enhancing RMB value competitiveness and sustained competitiveness, improving RMB competitiveness from the capital side. This strategy has not only important economic value but also major strategic significance for China' s great power diplomacy and international geopolitics. Reviewing Japan and South Korea, they allowed domestic capital to invest overseas in the early 1980s. China has already far exceeded their economic aggregate and foreign exchange reserve levels at that time, and Chinese capital already has the ability and necessity to "go out" and participate in global competition and governance. In implementing capital export strategy, RMB overseas placement can be carried out through four channels: international trade, currency swaps, foreign aid, and RMB outward direct investment. On the basis of moderate use of national funds (such as AIIB, BRICS New Development Bank, Silk Road Fund, etc.), we should fully leverage market forces and encourage private capital participation; accelerate the cultivation of domestic enterprises' international competitiveness, and while encouraging enterprises to "go out," we should even more encourage the RMB to go out. Specific policy guidance can include: encouraging commercial banks and other financial institutions, enterprises, and residents to hold RMB for overseas lending and investment, gradually forming and improving China' s ability to conduct wealth redistribution globally through fiscal and monetary policies; expanding the scale of RMB funds in transit in international settlements through policy support and guidance, forming multiple offshore RMB funding pools globally; in the process of gradually opening capital accounts, policy formulation should prioritize and support channels with RMB internationalization as the main carrier, accelerating channel construction (such as free trade zones, Shenzhen-Hong Kong Stock Connect, etc.), and gradually increasing channel capacity and scale.

(5) Rely on the "Belt and Road" national development strategy to enhance RMB competitiveness from the trade side. Due to rising labor costs, changing comparative advantages, intensifying resource constraints,

and weakening external demand, China' s foreign trade has encountered unprecedented bottlenecks in total volume growth after reaching a certain scale. Domestic excess capacity cannot be released, and slowing trade growth directly affects RMB value competitiveness and sustained competitiveness. The "Belt and Road" strategic concept involves nearly 60 countries with huge market space, representing a strategic choice for Chinese products and capital to go out under the new normal of slowing domestic economic growth. Relying on the "Belt and Road" national development strategy to further promote international trade development is an important measure to enhance RMB international competitiveness. By activating potential markets in Asia, Africa, and Latin America, optimizing trade structure and capital export, strengthening expansion upstream and downstream in global industrial chains, promoting domestic enterprise internationalization, and further promoting RMB cross-border transactions and overseas use—such as promoting RMB outward direct investment, supporting cross-border mergers and acquisitions, establishing overseas industrial parks, promoting overseas RMB loans, supporting energy and resource cooperation, advantageous capacity output, infrastructure connectivity construction, and promoting currency swaps and cross-border RMB settlement—we can enable the RMB to form stock overseas, thereby promoting and expanding free convertibility and preparing for global free convertibility of the RMB.

5.2.3 Enhance RMB Monetary Supply Elasticity and Increase Monetary Input to the Real Economy and Effective Supply

China currently faces the problem that monetary supply cannot effectively support the real economy, which is closely related to China' s current financial ecology and negatively affected by the current financial structure. Cultivating a good financial ecological environment and adjusting and improving the financial structure are very important for enhancing RMB competitiveness. Currently, the real economy generally has insufficient "demand" for monetary credit, while monetary credit supply shows a trend of "excess." Improving monetary supply elasticity and increasing effective supply input to the real economy can enhance RMB competitiveness through multiple channels. Specific measures to improve monetary supply elasticity include: creating a fair, effective, and reasonably structured financial ecology; improving financial efficiency and social credit symmetry levels by optimizing financial structure to increase support for the real economy and further improve RMB base competitiveness; guiding social capital concentration, broadening creditization and securitization channels for asset use rights and income rights, improving overall social financing capacity and efficiency, and enhancing RMB sustained competitiveness; building an inclusive financial system with Internet finance to increase support for small and micro enterprises with innovation vitality and enhance RMB environmental competitiveness.

5.2.4 Improve RMB Monetary Productivity Elasticity and Enhance China' s Real Economy Hard Power

Improving RMB monetary productivity elasticity can not only enhance China' s real economy hard power but also improve China' s ability to resist external shocks, laying a solid foundation for future RMB international competitiveness. Analyzing the impact of the previous two rounds of strong dollars on the world economy reveals that periods of dollar strength are often high-risk periods for emerging economies, such as the Latin American debt crisis from 1982-1985 and the financial crises in Mexico, Southeast Asia, South Korea, Russia, and Latin America from 1994-2001. This situation is closely related to low monetary productivity elasticity in emerging economies. With the improvement of the US economic fundamentals and strong interest rate hike expectations, dollar competitiveness has shown an upward trend in recent years. For the RMB, the impact of a strong dollar concentrates on four aspects: first, increasing RMB depreciation pressure against the dollar; second, intensifying capital outflow risks; third, increasing costs of corporate dollar debt; and fourth, increasing China' s overseas investment risks. Currently, the RMB and dollar have formed a certain competitive game relationship. For the RMB, the dollar is a potential destabilizing factor, while productivity is an important foundation of monetary competitiveness. Therefore, only consolidating the productivity foundation is an important guarantee to resist this external shock. Increasing monetary productivity elasticity can effectively resist external shocks dominated by dollar fluctuations. Improvement in productivity elasticity is reflected not only in trade products but also in non-trade products, which can enhance China' s trade competitiveness while improving China' s economic stability and reducing the negative impact of external shocks on RMB competitiveness. Overall, improving monetary productivity elasticity can lay a solid foundation for achieving a "strong RMB" in the medium to long term.

5.2.5 Actively Integrate into the Global Financial System to Participate in International Rule-Making and Enhance RMB International Discourse Power

Due to historical inertia in international currency use, currencies with first-mover advantages in international currencies will inevitably hinder some emerging economy currencies from becoming international currencies. From the historical process of monetary competition, we can see that the US completely defeated the pound and became the world' s super currency with the help of the Bretton Woods system. In the last century, Japan, relying on rapid economic development, posed a certain challenge to the dollar, but was thwarted by the US-imposed "Plaza Accord," causing the economy to fall into long-term stagnation. Therefore, we must clearly recognize that under the dollar-dominated international monetary system, due to its strong "network externalities," the inherent preference formed by market entities is difficult to change in the short term. RMB internationalization cannot simply follow the market spontaneous

evolution model step by step. The Chinese government should improve China' s institutional discourse power in global economic governance, attach great importance to strategic planning for RMB internationalization, and adopt incentive measures to guide market entity preferences. First, use the opportunity of RMB joining the IMF Special Drawing Rights (SDR) basket to expand RMB influence, enabling the RMB to perform functions similar to other fully freely convertible currencies under the IMF framework, providing a platform for sustained RMB competitiveness enhancement. Second, reconstruct the international monetary order and pattern through regional or international financial institutions such as AIIB and BRICS New Development Bank, thereby comprehensively improving RMB internationalization level and international influence. Third, further promote bilateral and multilateral currency clearing arrangements to diversify risks from the single dollar pricing system and enhance RMB international status. Current measures include establishing clearing arrangements with multiple currencies including the dollar, Australian dollar, New Zealand dollar, pound, and yen, and achieving free convertibility between the Korean won and RMB in the China-Korea Free Trade Zone. Fourth, promote the formation of "petro-yuan," sign local currency swap agreements with Middle Eastern countries, and penetrate the core area of "petro-dollar," thereby promoting the RMB to a higher position in the global trade system.

5.2.6 Ensure Overall Stability of China' s Capital Market and Foreign Exchange Market to Enhance RMB Monetary Environment Competitiveness

The overall stability of capital and foreign exchange markets forms the foundation for enhancing RMB monetary environment competitiveness. However, under the influence of the current unsatisfactory world economic situation and China' s economic "three overlapping phases" transformation challenges, achieving stability in both markets is not easy. China' s real estate market and stock market may impact the stability of the entire capital market. Since the beginning of this year, although China' s real estate market has gradually resumed its upward trend after nearly two years of stability, future prospects are full of risks due to the disappearance of China' s demographic dividend. The stock market crash in July 2015 sounded the alarm for us: when prices seriously deviate from fundamental factors, they will return to rational values. Therefore, systematic contingency plans and countermeasures are needed to ensure capital market stability. While systems are long-term and stable, contingency plans and countermeasures are generally short-term and variable. We can combine long-term institutional arrangements with short-term policy adjustments to maintain capital and foreign exchange market stability. As capital markets further open to the outside world, free capital flows will pose certain challenges to monetary policy formulation. Maintaining foreign exchange market stability is the foundation for ensuring financial market and overall economic stability. In 2014, the RMB exchange rate against the dollar fell significantly twice, attracting market attention. In August 2015, the RMB against the dollar fell again, causing

considerable market shock. As exchange rate reforms steadily advance, RMB exchange rate fluctuation ranges may continue to expand, requiring measurement of acceptable fluctuation ranges and formulation of relevant policies to respond. Moreover, as the central bank gradually withdraws from foreign exchange intervention, how the central bank can maintain foreign exchange market stability through innovation and more flexible policy tools, and what methods to use to fill liquidity injection previously done through foreign exchange purchases, require in-depth consideration.

5.2.7 Strengthen Monetary Cooperation with Various Countries and Gradually Form a Regional Monetary Framework Dominated by the RMB

Strengthening monetary cooperation with various countries based on policy coordination can enhance regional economic stability, increase sovereign currency influence, and achieve a "win-win"regional economic pattern. Therefore, regional monetary cooperation and development and RMB competitiveness enhancement are mutually reinforcing. Strengthening monetary cooperation and promoting RMB settlement in trade with neighboring countries in a collaborative and inclusive manner is a breakthrough for achieving RMB regionalization. For example, the establishment of the China-ASEAN Free Trade Zone has made trade and investment activities more frequent. China and ASEAN need to strengthen local currency pricing and settlement within the region to safeguard common interests of regional countries, reduce dependence on the dollar, and thereby reduce transaction costs and exchange rate fluctuation impacts on countries' balances of payments. Strengthening RMB offshore center construction, such as cooperating with the Singapore government to build a Singapore RMB offshore center, can leverage the implementation of China' s "Belt and Road" strategy to make Singapore a distribution center for RMB capital and promote RMB influence in Southeast Asian countries, India, and other Asia-Pacific markets. In the global monetary competition pattern, the dollar and euro remain the most competitive currencies, while in East Asia, the yen and RMB are the most competitive. Making the RMB the dominant trade currency in the ASEAN region requires strengthening policy coordination with various countries, expanding cooperation fields, strengthening political mutual trust, and broadening bilateral cooperation levels. The importance of East Asian monetary cooperation is self-evident. Achieving a dominant position in regional cooperation means we need to undertake necessary responsibilities and costs, but in the long run, the benefits outweigh the costs. RMB internationalization should rely on regional cooperation, actively promote the East Asian monetary cooperation process, use collective action to reduce the cost of challenging dollar hegemony, and reduce resistance to RMB internationalization. Strengthening cooperation with neighboring countries will increase the RMB' s capital to compete with major world currencies and enhance RMB international influence.

5.2.8 Continuously Strengthen and Leverage RMB Competitive Advantages and Consolidate the Economic Foundation for RMB Internationalization

China' s performance in economic scale and global trade share has endowed the RMB with tremendous competitive advantages, and the RMB has gradually established its position as an emerging strong world currency. The formation of a strong RMB helps improve China' s international influence and better participation in global governance. Historically, the establishment of the pound, dollar, yen, and euro' s international status was directly related to economic scale expansion and trade development, which are the main fundamental conditions determining monetary competitiveness. Over the past 30 years, China' s GDP has maintained high growth rates. Although growth has slowed since the 2008 global economic crisis, it still has considerable advantages in both growth rate and total volume compared with developed and developing countries. How to innovate and scientifically apply fiscal, monetary, and industrial policies to avoid falling into the middle-income trap, maintain relatively high economic growth, and sustain trade development is crucial for strengthening and leveraging RMB competitive advantages. However, we should also objectively recognize that China' s current economic development faces many challenges. In terms of macroeconomic situation, China' s economy has entered the "new normal," presenting issues such as rising labor costs and urgent need for industrial transformation and upgrading, which pose challenges to enhancing RMB sustained competitiveness. Meanwhile, imperfect and inefficient financial systems, weak financial infrastructure, and low financial openness constitute competitive disadvantages for the RMB. Especially under current conditions of intensified competition and gaming in the international monetary system, it is particularly important to eliminate RMB competitive disadvantages as soon as possible and strive to turn disadvantages into advantages. China should currently accelerate industrial transformation and upgrading, advance toward Industry 4.0, and take a new path of industrialization. In maintaining RMB exchange rate stability, we should gradually transition from the current de facto dollar-pegged exchange rate system to more flexible exchange rate arrangements. We should steadily and rapidly advance financial system reform, expand two-way financial opening, orderly achieve RMB capital account convertibility, relax restrictions on overseas investment remittances and multinational corporations' overseas fund operations while strengthening supervision, allow more qualified overseas institutions to raise funds in domestic markets, compensate for and improve RMB competitive disadvantages, and lay the foundation for the RMB to participate in global monetary competition.

5.2.9 Accelerate the Construction of International Financial Center Platforms to Enhance China' s Financial Soft Power

Possessing international financial centers is of great significance for developing national financial soft power and enhancing monetary competitiveness. Building

influential international financial centers not only meets China' s economic and social development needs and has positive significance for enhancing monetary influence but also plays a very important role in helping China seize current economic development strategic opportunities and achieve national economic transformation, thereby further enhancing monetary competitiveness. China has made some progress in these areas in recent years, but there remains a considerable gap compared with developed countries. Strengthening the construction of international financial center platforms involves, on one hand, strengthening existing domestic major financial centers, and on the other hand, using "late-mover advantages" to vigorously develop virtual Internet platform-based financial centers. Shanghai and Shenzhen, as China' s most important domestic financial centers, already have capital market sizes ranking among the world' s top, but contrary to this, their international influence remains very limited, with an important reason being relatively low financial soft power levels. Strengthening the construction planning of Shanghai and Shenzhen as international financial centers will have a point-to-surface effect and help promote China's overall financial environment development. We can consider building Shanghai and Shenzhen into comprehensive RMB asset transaction centers covering various financial fields including money markets, capital markets, and foreign exchange markets, while encompassing onshore transactions, international transactions, and offshore transactions. In addition to real financial center construction, China can also rely on the rapidly developing Internet finance to build international virtual financial center platforms, forming network control and influence over future financial markets. International financial center platform construction and financial center construction can complement and promote each other to further develop China' s financial soft power and achieve the goal of improving RMB competitiveness.

5.2.10 Accelerate Supply-Side Structural Reform to Enhance RMB Medium- and Long-term Sustained Competitiveness

Compared with monetary and fiscal policies typically used to solve short-term stable economic growth problems, supply-side structural reform focuses on solving medium- and long-term sustainable economic growth problems. Since reform and opening up, China' s economic growth has mostly focused on the demand side, namely the well-known "three carriages" of consumption, investment, and exports. However, changes in total demand are often short-term or cyclical. From current economic development trends, the "demand side" has become more difficult to drive sustained and stable economic growth. RMB competitiveness detached from economic and industrial support is a "castle in the air." Taking the US as an example, the US "strong dollar policy" is supported and backed by its strong economic fundamentals. This shows that only economic stability can ensure currency stability, and only a strong economy can support a strongly competitive currency, while stable and sustained economic growth can ensure continuous improvement in currency competitiveness. Therefore, implementing supply-side structural reform to solve current problems in

production such as low efficiency, improper resource allocation, relatively slow technological progress, and insufficient enterprise innovation capability, focusing on institutional arrangements and innovation, and forming new internationally competitive industries can ensure China' s long-term stable economic growth, thereby enhancing RMB medium- and long-term sustained competitiveness.

5.2.11 Build a Financial Risk Management System that Keeps Pace with the Times to Provide Security Guarantees for Monetary Competitiveness

The process of RMB internationalization and competitiveness enhancement will inevitably encounter risks that need to be prevented in advance. For example, common foreign exchange risks—currently Chinese enterprises have limited means to deal with foreign exchange risks, and banks' forward foreign exchange settlement services cannot meet demand. Therefore, appropriate financial innovations can be developed, such as vigorously developing foreign exchange futures markets, which is beneficial for both risk prevention and better grasping RMB exchange rate pricing power. In preventing systemic financial risks, it is necessary to strengthen the construction of financial macro-prudential management systems, strengthen coordination among the "one central bank and three commissions," and build a systemic risk monitoring and analysis framework. The stock market crash in mid-2015 caused heavy losses to investors, and domestic criminals colluding with external short-selling forces were important influencing factors and drivers of the crash, which also exposed deficiencies in our financial risk management system. Promoting RMB internationalization will be accompanied by interest rate and exchange rate marketization, capital account opening, and financial market innovation. Market opening and internationalization make it easier to be impacted by external shocks, so there is an urgent need to improve the current financial regulatory framework, establish regulatory rules that conform to China' s national conditions and international standards, and achieve real-time, accurate, and comprehensive financial risk regulation, thereby providing solid guarantees for steady and effective enhancement of RMB competitiveness.

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Note: Figure translations are in progress. See original paper for figures.