

The Monetary Cooperation Framework and Mechanism Study in Four

Regions of China across the Straits

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Abstract: This paper aims to design a framework to study the mechanism of regional monetary cooperation in four regions of China across straits (Mainland China, Hong Kong, Macau, and Taiwan), considering that monetary cooperation is a key field of regional cooperation for further integration. From the angle of the large trade volume, frequent capital movement and financial cooperation among the four regions, close economic ties indicate the overwhelming trend of monetary integration of the four areas in the long run. The analysis will be based on two perspectives: one is business cycle synchronization and the other is symmetrical economic shocks. In the long run, the GDP co-movements among these four areas are expected, while in the short run, the four areas have common business cycles. At the same time, the economic shocks of the four areas are symmetric to some degree, expectedly. After introducing the theory and empirical analysis, the paper will design the framework of the schedule, by dividing the monetary cooperation into three stages: short-term, middle-term and long-term. Based on the monetary integration experience in Europe, the concrete mechanism and the technicality in each stage will be illustrated in order to construct the basic monetary cooperation framework for the four regions across straits.

Key words: cross-strait four regions; monetary cooperation; framework; mechanism

JEL codes: F31, F33, F36

1. Introduction

Since humans began international economic exchange, regional economic integration and economic globalization have gradually become two overwhelming trends in the world's economic development. Reform and opening up, accession to the WTO, the establishment of the Shanghai free trade zone, and a series of milestone events promote China's gradual economic integration into the world economy.

China, as the center of the global value chain (GVC) and the world's second largest economy, plays an important and remarkable role in resisting the worldwide financial crisis and promoting sustainable development of the global economy. Mainland China, Hong Kong, Macao and Taiwan (hereinafter referred to "Four Regions of China across the Straits") are growing increasingly close in economic and trade cooperation, especially with the signing of the agreement establishing "closer economic partnership arrangement between the Mainland China and

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Hong Kong and Macao" (CEPA), and "economic cooperation framework agreement" (ECFA) between both sides of the Taiwan Straits, which is a key step forward towards the institutionalization of the organization for economic cooperation relationship. In this context, currency cooperation will become one of the core research fields as the highest level of regional economic cooperation for the four regions of China across Taiwan Straits.

The Hong Kong special administrative region of the People's Republic of China returned to China from the hands of British colonists on July 1st, 1997. Hong Kong dollars are issued by three banks: Standard Chartered Bank, HSBC and the Bank of China. Initially, Hong Kong dollars were pegged to the pound. Later, HKDs were allowed to float. Since 1983, the issuance of HKD is pegged to USD, at the exchange rate of 7.8 HK\$ to 1 US\$. Recently, the exchange rate of HKD to RMB is around $0.7 \text{CN} \frac{Y}{1} \text{HK} - 0.8 \text{CN} \frac{Y}{1} \text{HK}$.

The Macau special administrative region of the People's Republic of China returned from the control of the Portuguese to China on December 20th 1999. MOPs (Macau Patacas) have foreign exchange reserves support. The fixed exchange rate is 1HKD to 1.03 patacas. Due to the peg of HKD to USD, patacas also are indirectly linked to the dollar and the exchange rate is about 1USD to 8 MOPs. Recently, the exchange rate of MOP to RMB is around $0.78CN \frac{Y}{1MOP}$.

The Taiwan authorities issued TWD as a set of legal currency since June 15th 1949. The ISO 4217 code-name is TWD (or simply the NT \$, NTD). The basic unit of TWD is called "yuan". In oral language "kuai" is used to replace "yuan" and "mao" to "jiao". The new Taiwan Dollar is known as the old TWD. NT is relative to the old TWD, but now "T" refers to the new Taiwan dollar.

2. Close Economic and Trade Relations

It is noteworthy that with the opening of trade liberalization and economic integration in the four regions, the economic and trade relationship between Mainland China and Hong Kong, Macao and Taiwan are far from simple trade and investment partners. In recent years, the degree of trade and investment closeness among them is much higher than that with other economies and is sustained at a high level.

To participate in and lead the globalization for China, it is not enough to achieve the internationalization of Renminbi. From the perspective of the global value chain integration, regional monetary integration is also needed to further promote trade, investment, financial and industry integration, as well as to improve the competitiveness of China's trade. At the same time, the adjustment of industrial structure and people's consumption habits both has a close relationship with environmental control or governance. Mainland China, Hong Kong, Macao and Taiwan on the level of industry gradient difference is making the four become outstanding economic complementary relationship, thus forming a close industrial cooperation pattern, and jointly undertaking international industrial transfer and the international division of labor. Hong Kong has completed the transformation from manufacturing to service industry, forming the division of labor pattern of "Front Shop, Back Factory" with the Mainland, thus into the global value chain. At the same time, Taiwan is preparing to and brewing into the global value chain through "Taiwan production and the Mainland assembly or Taiwan R&D and the Mainland production", and so on a series of operation patterns. Does this comprehensive economic cooperation and special industry cooperation pattern among Mainland China, Hong Kong, Macao and Taiwan promote the formation of monetary integration in the Mainland, Hong Kong, Macau, and Taiwan, from medium or micro level as well as from the bottom up?

In adherence to the integration of trade and finance and on the basis of further integration in industries, the

implementation of regional monetary integration among the Mainland, Hong Kong, Macau, and Taiwan is more feasible and significant. Mainland China's position in the global value chain has promoted the advance of trade integration; however, the integration of financial markets mostly depends on the measurement of financial openness. Compared with Hong Kong, Macao and Taiwan, Mainland China's financial market has not been able to become fully opened, and is still regulated under the government intervention. Therefore, promoting Chinese characteristics of the harmonious and balanced relationship between the government and the market will help the Mainland's financial markets increase the degree of openness and the degree of financial integration with Hong Kong, Macao and Taiwan.

In view of this, the study puts forward a new framework of monetary cooperation for research on regional monetary integration design and mechanism. On the basis of integration in goods trade, investment, and the financial services industry this study selects the formation of the global value chain and China's leading role in globalization as the special perspective to conduct the analysis. The necessity of China's active participation in implementing monetary cooperation or integration with Hong Kong, Macao and Taiwan will be emphasized.

3. Literature Review

In the research on the regional monetary cooperation framework design for the four regions of China across the Straits, monetary cooperation, exchange rate collaboration, and currency integration are the stages to achieve the optimal currency area (OCA) gradually. Regional monetary integration, also called currency collectivization, refers to the countries and regions in a certain area in the field of money and finance to implement coordination and combination, finally realizing the unified monetary system. In the true sense, only three regional currencies in the world, the euro, the West African franc and the central, Africa franc. However, Mainland China, Hong Kong, Macao and Taiwan, China's four economic areas are using four different currencies. Over years, many scholars have discussed and continue to discuss the idea of a "China economic circle" and consider the implementation of the monetary integration as the final goal of regional integration.

In theoretical model research, an American economist Robert Mundell first puts forward the theory of Optimum Currency Areas (OCA) in 1961. Then after that, many economists try their best to enrich, develop and explore the OCA theory continuously. For example, the theory of economic openness by Ronald McKinnon (1963, 1973), the theory of high degree international financial integration by James the gulag (1969, 1973) and so on. At the same time, there are also many other domestic scholars delving into the study on the implementation of optimal currency area theory in Asia or sub-regions of Asia. Especially after the storm of the Asian financial crisis, East Asian countries have raised consciousness and proposed to make the coordinated regional monetary policy with the implementation of a common currency area, thus effectively coping with the financial crisis. However, due to lack of practical and feasible solution at present, the establishment of a unified "yuan district" is just an idea. Therefore, some scholars argue that China should take the first step to establish the "yuan area" for the four regions of China across the Straits in order to realize the monetary integration.

Domestic scholars have done research to build "the yuan district" for the four regions to promote the study on the yuan's feasibility, based on the empirical test of the optimal currency area theory. The test can be roughly divided into three categories: the first is based on the endogenous assumption empirical test; the second type is based on the symmetry of economic shocks in empirical research; and the third is based on the synchronicity of economic cycle. The empirical study of the first category, based mostly on Frankel and Rose (1999), is based on endogenous assumption and can be further sub-divided into static research and dynamic research. Zhihong Wan (2003) found that in the East Asia region, macroeconomic symmetry and trade links between obvious symmetry meet the endogenous assumption in East Asia. Lin Hong (2007) argues that the East Asian economies should actively promote the monetary cooperation to obtain the satisfactory conditions of the optimal currency area, considering that the optimal currency area itself may self-reinforce endogenous hypothesis. Nianli Zhou (2007), based on the angle of regional economic integration and regional economic convergence, analyzed the interaction of monetary cooperation to determine whether it met the endogenous hypothesis test for the four regions of China across the Straits. Zhou used the symmetry of demand and supply shocks to replace Frankel and Rose's economic cycle correlation. In her model, the dynamic trade integration relationship with the symmetry of economic shocks and the structure reflects that Hong Kong, Macau, Taiwan do not meet to realize the dynamic constraint conditions of monetary cooperation.

Xiaoyan Cui (2008) conducted research on the optimal currency area in East Asia through the correlation of the economic cycle test. Cui found that trade and the business cycle synchronization have significantly positive correlation, but horizontally compared with the EU countries, the correlation between the East Asian economies is small. Jinting Zhao (2012) took Frankel's endogeneity assumption of optimal currency area theory (1999) and dynamic game theory as the reference to access the economic feasibility in the Mainland China, Hong Kong, Macau, Taiwan. The results show that the four regions across the Straits meet the assumption of endogenous monetary cooperation.

The second category is based on symmetry of economic shocks. Under the background of continuous development of economic globalization, which promotes economic ties between member countries' economies that have monetary cooperation relationship, the research from the perspective mainly has the following of many scholars: Shugeng Dai and Jiequan Lin (2013) investigated the degree of symmetry of economic shocks and found that the economic shocks in Mainland China, Hong Kong, Macau and Taiwan have certain symmetry, to some extent, and the symmetry of demand shock is superior to the symmetry of supply shocks, using the output and the price two variable SVAR model, but the level of symmetry is not ideal. Thus, to realize the monetary integration in the Mainland, Hong Kong, Macau, and Taiwan will be a long and tortuous process. The feasibility and cost analysis of monetary integration, the level of symmetry in the four regions of China across the Straits is one of the main basic judgments. Xindan Li etc. (2003) used the real exchange rate to denote the shocks from the monetary impact and the results showed that the actual economic volatility between Mainland China and Hong Kong does not much show asymmetry. Chao Jin etc. (2004) applied the one-year deposit interest rate to measure monetary shocks and build the three variables model.

Foreign research on symmetry of economic shocks in the 1990s, such as Poloz (1990), Eichengreen (1992), De Grauwe and Vanhaverbeke (1993), compared the relative price volatility of the European Union and other monetary unions. At the same time, it is also difficult to distinguish structural perturbations from shocks. Cohen and Wyplosz (1989), Weber (1991) took the sum of the output change of several groups of European countries and the difference between the output change of them, respectively, as indicators of symmetrical and asymmetrical shocks to study the impact of monetary union members' symmetry. However this method cannot distinguish variables from policy implementation caused by a demand shock and supply change caused by the real economic impact. In order to make up for the defects, Blanchard and Quah (1989), Bayoumi and Eichengreen (1997) further isolated supply shocks and demand shocks from the residuals of the fitting model. They identified the reaction of

both shocks from aggregate macroeconomic fluctuations, which has become the most mature method to study the symmetry of economic shocks by far. To sum up for the second category, the empirical analysis is mainly using the SVAR model in most studies.

The third category for the feasibility of the monetary integration research in the four regions is based on the analysis from the perspective of economic cycle synchronization. Xiaojuan Sun and Dan Li (2011) found that in the long run, there exists a common cointegration relationship between the four regions' GDP. However, in the short term, they share a common economic cycle, indicating the remarkable economic cycle synchronicity of the four regions. Therefore, the monetary integration in the four regions across the Straits is the trend of the times.

In general, the academic field of related research for the cross-straits four monetary cooperation is mainly concentrated in two aspects. The first one is based on the investigation of a realistic foundation to achieve monetary integration, especially considering optimal currency area criteria and the economic convergence criteria of EU monetary integration for Mainland, Hong Kong, Macau, and Taiwan (Nianli Zhou & Hanlin Zhang, 2008). Representative views mainly include the research by Qingbin Ceng and Mingxun Liu (2004) on the four regions across the Straits by evaluating economic openness, product diversification, factor liquidity and the financial integration. These four factors forecast and conclude that the Chinese economic circle will realize the unification of the currency in 2015.

The second aspect is based on monetary cooperation through comparison of the costs and benefits. Representative views include the studies by Yanjun Huang, Shengxian Zhao (2003). The study mainly discusses the concrete implementation of the monetary cooperation schedule for the four regions of China across the Straits. The process of monetary cooperation can be divided into short-term, medium-term and long-term, three stages. Based on the experience of the European monetary integration, for each phase, the specific implementation of monetary cooperation mechanism may involve the prospective of the technical details. Representative research, such as Nianli Zhou (2008), has built the basic framework of monetary cooperation for Mainland China, Hong Kong, Macau, and Taiwan. Shugeng Dai (2012) put forward the strategic ideas to the path choice of financial integration on both sides of the Taiwan Straits. With the signing of MOU (Memorandum of Understanding), especially the implementation of the ECFA, in the short term, the establishment of cross-strait financial service for the free trade area should be accelerated, in the middle term to build the common market for the both sides of Taiwan Straits and the four regions of China, and finally to build the "the Chinese yuan area" as the ultimate goal.

4. Theoretical and Practical Framework

Step 1 is to examine the realistic foundation of monetary cooperation or integration in the four regions of China across the Straits, under two agreements: CEPA and ECFA. The quantitative analysis will start with the degree of trade interdependence, complement and causality, and then VAR and SVAR will be applied to examine the realistic foundation of monetary cooperation from both macro and micro levels.

Step 2 is to establish multiple channels within a currency cooperation framework. Generally speaking, the first channel is to establish the bilateral monetary cooperation mechanism of the Central government to Hong Kong, Macau and Taiwan, respectively. The second is to build multilateral monetary cooperation mechanism among the four regions of China across the Straits under the leadership and control of the central government, promoting the process of monetary cooperation through bilateral and multilateral mechanism design.

Step 3 is about the order or schedule of cooperation arrangement. The reasonable next step is to study the

issue of the Mainland China with Hong Kong, Macau and Taiwan, under CEPA. The next step is to study the topic of economic and trade integration to further promote currency cooperation for both sides of the Straits, under the agreement of ECFA. Because "Monetary Integration" is a politically sensitive issue for Taiwan's authorities, "Monetary Cooperation" will be used to replace the former, in most cases.

Step 4 is to set up a concrete schedule or arrangement. First of all, based on the results of feasibility examination, the prediction that when the Mainland China, Hong Kong, Macau and Taiwan will present high-level economic integration, for example, in 2017. Based on that, from the perspective of creating a timeline, a forward-looking path of implementing monetary cooperation will be set. For instance, in 2020, it will promote monetary cooperation from economic and trade integration, in 2025, will further promote monetary cooperation, and in 2030, it will finally realize regional currency integration.

5. The Research Significance

Based on previous studies related to OCA and the four regions of China across the Straits, there still exit sufficient space for further research, especially for the exploration of a practical plan to implement monetary cooperation. Therefore, the research in this paper is going to cover the gap, making contributions to the related studies and policy implications.

(1) Compared with the euro used by 12 members from 25 European countries and other kinds of common currency used in the world, the study on the monetary integration of China's four regions across the Straits are not sufficient and in-depth, although this is an interesting topic for economists whose study field is optimum currency areas.

(2) Current research on the feasibility of implementing monetary integration in the four regions of China across the Straits is mainly from top to bottom, lack of analysis from the bottom up which start from the medium level of industries and the micro level of firms.

(3) Regarding to the design for the path of implementing monetary cooperation for the four regions of China across the Straits, most of the research lacks comprehensive analysis from multiple levels and dimensions, with the consideration of policy coordination.

6. The Schedule Design and Mechanism Research

The following statement is a rough description for the schedule design for the four regions of China across the Straits.

In the short run, the monetary cooperation framework may include a regional early warning system and emergency rescue mechanism with the establishment of Chinese Currency Unit (CCU), to stabilize and harmonize market uncertainty.

In the medium run, the framework will establish and further improve the Chinese Bond Market through the construction of fundamental market environment, the plan of CCU, and the measures to improve CCU. After that, a regional exchange rate convergence mechanism will be designed.

In the long run, Chinese Monetary Union (CMU), which will be modeled after the European Monetary Union, will be founded with the introduction of the Chinese Exchange Rate Mechanism.



Figure 1 The Technology Roadmap for the Study

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