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Regional Settlement Infrastructure and Currency Internationalization: The Case of Asia and the Renminbi

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Abstract

The squeeze in United States dollar liquidity that emerged with the global financial crisis highlighted the risks inherent in the current global financial system. Asia was adversely affected by the crisis not only because of its dependence on trade, but also because of its heavy reliance on the US dollar for regional and international transactions. As Asia's role in the global economy continues to expand, its dependence on the US dollar is bound to increase, raising further its vulnerability to future liquidity shocks. The use of regional currencies for bilateral trade settlement could reduce such vulnerability. As demonstrated by the renminbi trade settlement scheme piloted between the People's Republic of China; Hong Kong, China; and Macao, China, the existence of appropriate financial infrastructure could reduce the relatively larger costs of bilateral currency transactions compared with triangular transactions through the United States dollar. As most central banks are securities depositories of government bonds, combining trade settlement with government bond securities settlement could also have large synergy effects without substantial extra costs. This proposal does not require full liberalization of the capital account or full deregulation of capital markets, and is more politically feasible in transition. As such, extending the trade settlement scheme to the rest of Asia and appending a government bond payment and securities settlement system could be a practical solution to international monetary system reform and the diversification of settlement currencies.

JEL Classification: F33, F34, F42

Contents

1. INTRODUCTION

Notwithstanding its success over the last decades, the international monetary system (IMS) has shown symptoms of fragility. Persistent and recurrent crises, global imbalances, volatility in exchange rates and capital flows, as well as the accumulation of large foreign exchange reserves are often cited as manifestations of such weaknesses. Indeed, the global financial crisis of 2008–2009 revealed vulnerabilities in the IMS that led to the instability of world financial markets and the subsequent contraction of the world economy. Possible reforms to strengthen the IMS are being discussed more widely, therefore, not only in academia, but also in political circles.

One proposal is to build a global safety net.[1] However, while this would help, it would not solve the problem. Despite significant efforts by the International Monetary Fund (IMF), it is manifest that the available resources will not be sufficient to address a crisis of similar magnitude to the global financial crisis. The stigma effect also constrains the effectiveness of the IMF crisis-prevention toolkit and as such countries are likely to continue to self-insure by accumulating foreign exchange reserves. This is not good for the global economy as it aggravates the global imbalance problem.

Two other popular options that have emerged are the shift to a system based on special drawing rights (SDRs) and the move to a multiple currency system. However, markets seem skeptical about the feasibility of these options. There are currently political constraints in raising the allocation of SDRs. But even if allocations were allowed to increase, it would take some time before the SDR can be widely used in private markets. Also, under existing conditions, high transaction costs between non-United States (US) dollar currencies are the prime reason for a triangular transaction of non-US dollar currencies through the US dollar. Therefore, considering the high transaction costs, it is hard to imagine that some other currency, including SDRs, could replace the role of the US dollar as global reserve currency in the near future.

Establishing regional settlement infrastructure for regional currencies could be an interim solution. It can actually make a practical contribution to the IMS reform agenda. Using regional currencies to settle intra-regional transactions does not mean that some Asian currencies will become international reserve currencies soon. Rather, the use of Asian currencies for regional trade and investment could be gradually promoted by providing proper infrastructure, even before they become reserve currencies with full convertibility.

The best example is the renminbi (RMB) trade settlement scheme initiated by the People's Republic of China (PRC). The pilot scheme, launched in July 2009, allowed the settlement in RMB of trade transactions between five cities in the PRC and selected trade partners. It also permitted banks in PRC partner locations to provide RMB services, such as deposit-taking, currency exchange, remittance, trade finance, and check issuance, to enterprises choosing to settle trade transactions in RMB. The scheme was promoted by the PRC monetary authorities in the expectation that it would benefit the PRC economy by reducing exchange rate risks, shrinking trade transaction costs, improving the funding efficiency of financial institutions, and diminishing the need to hold the US dollar as a medium of exchange and store of value. The logic is that the increase in import settlement denominated in RMB, coupled with policies that

[1] The IMF defines global financial safety net as "a set of crisis prevention and resolution instruments, encompassing self-insurance (reserves); bilateral arrangements (e.g., swap lines between central banks during periods of stress); regional arrangements such as those in Asia, Europe, and Latin America; and multilateral arrangements with the IMF at their center" (IMF 2011).

encourage RMB recycling, would result in larger cross-border RMB flows and a larger stock of RMB held by non-residents (Yu 2012b).

Indeed, the value of RMB trade settlement transactions has massively increased, from just CNY3.6 billion in the second half of 2009 to nearly CNY1.3 trillion in the first half of 2012 and over CNY2.0 trillion in the first half of 2013 (PBoC 2011a, 2012b, 2013c). Non-trade transactions have also risen tremendously. RMB deposits had swelled from CNY62.7 billion at end-2009 to CNY730.0 billion by end-September 2013 (HKMA 2013b). According to Bloomberg data, RMB-denominated bond issuance has grown from only CNY10 billion in 2007 to CNY281.9 billion in 2012. "Dim sum bond" issuance is projected to grow even bigger this year, as the value of these bonds issued reached CNY305.4 billion in the first 10 months of 2013.[2]

This rapid expansion demonstrates that the issue of the relatively larger costs of bilateral currency transactions compared with triangular transactions is a "chicken and egg" question: building infrastructure can make a difference. Transaction costs of using non-US dollar currencies are high since adequate infrastructure has not been built. But these costs could be significantly reduced if proper infrastructure is set up. This experience also shows that full liberalization of the capital account or full deregulation of capital markets is not required to build necessary infrastructure. Expanding the local currency trade settlement scheme into a regional trade settlement system does not need to be led by the PRC alone. As a practical solution for IMS reform, Asian economies could introduce a bilateral or multilateral trade-related payment settlement scheme. This does not imply that all regional currencies will be internationalized or used for settlement of trade transactions. As Deng Xiaoping once famously said, "It doesn't matter whether a cat is black or white as long as it catches mice." Markets are likely to determine which currencies will be more widely used for trade settlements. But irrespective of the markets' choice, the emergence of regional currencies as trade settlement currencies will reduce Asia's dependence on the US dollar, and contribute to the diversification of international settlement currencies.

To expedite this process, building efficient payments and securities settlements together is the key to success. There would have been lower incentives to hold RMB deposits in Hong Kong, China had depositors not been able to find diverse opportunities to manage their RMB-denominated assets. The availability of other investment opportunities for RMB—such as bonds, and investment and asset management products—is an important aspect of the system that promoted the wider use of the RMB. This investment opportunity would not have developed so quickly had a securities settlement system not been in place. Thus, the expansion of the offshore RMB market is largely due to the efficient securities trading and settlement system in Hong Kong, China, where infrastructure for payment vs. payment was available together with infrastructure for delivery vs. payment for RMB securities.

This paper proposes the promotion of more bilateral trade settlement systems or a multilateral trade settlement system in Asia, together with a government securities settlement scheme. As most central banks are securities depositories of government bonds anyway, combining trade settlement with government securities settlement could have large synergy effects without substantial extra costs. It would also help to promote the development of local currency bond markets in Asia, as envisioned by the

[2] Needless to say, this unprecedented increase in trade settlement values and the expansion of the offshore capital market in Hong Kong, China is partly due to RMB exchange rate appreciation expectations (Li, Wu, and Pei 2012; Yu 2012a). But the persistent hike in RMB trade settlement transactions shows that this trend will continue despite the recent moderation in exchange rate appreciation expectations (He 2012).

Association of Southeast Asian Nations (ASEAN)+3[3] members' Asian Bond Markets Initiative (ABMI) after the Asian financial crisis in 1997 (ASEAN Secretariat 2003).

The rest of this paper is organized as follows: Section 2 looks at the existing RMB trade settlement scheme involving the PRC; Hong Kong, China; and Macao, China, focusing on the system, progress, impacts on the offshore RMB market, and prospects. Section 3 presents a proposal to expand the current bilateral systems to other economies and deepen the scheme by combining the trade settlement system with government bond settlement systems. Such a system would help solve the "third time zone problem" and develop financial markets in Asia. Section 4 discusses the relationship of this proposal with other regional initiatives such as the ABMI, in particular the issues of building a Regional Settlement Intermediary (RSI) and strengthening the regional financial safety net. Section 5 concludes.

2. THE RENMINBI TRADE SETTLEMENT SYSTEM

2.1 Background

On 6 July 2009, the People's Bank of China (PBoC) launched a pilot scheme for the cross-border settlement in RMB of trade involving approved areas in the PRC and selected areas outside the PRC, marking a significant milestone in the development of offshore RMB business. Yu (2012b) succinctly summarized the main objectives of this new initiative—promoting RMB internationalization; reducing exchange rate risks; shrinking trade transaction costs; improving the funding efficiency of financial institutions; and diminishing the need to hold the US dollar as a medium of exchange and store of value. Ma, Liu, and Miao (2012) identified other benefits from RMB internationalization, including raising seigniorage income, decreasing the PRC's vulnerability to changes in US macroeconomic policies, and enhancing the PRC's influence in reforming the international financial system. The pilot scheme initially allowed the settlement in RMB of trade transactions between five cities in the PRC (Shanghai, Guangzhou, Shenzhen, Dongguan, and Zhuhai) and selected partners (i.e., Hong Kong, China; Macao, China; and ASEAN members).

To gain eligibility, enterprises in the PRC needed to secure endorsement from provincial authorities and approval from central authorities. Commercial banks in selected PRC partner locations were permitted to provide RMB-related services to enterprises choosing to settle trade in RMB. Specifically, commercial banks could engage in deposit-taking, currency exchange, remittance, trade finance, and check issuance. These transactions are facilitated by the relevant clearing and settlement services. Participating banks outside the PRC, on the other hand, can engage banks in the PRC as correspondent banks or the clearing bank, or both, for RMB business in Hong Kong, China and Macao, China to handle the associated settlement of RMB funds at the wholesale level. This implies that these banks can get RMB funding through the clearing bank, PRC correspondent banks, other participating banks outside the PRC, or RMB deposits (HKMA 2009).

On 22 June 2010, the pilot scheme was expanded to cover a larger number of provinces and cities in the PRC (i.e., 18 provinces and cities plus Guangdong and Shanghai), and the trade partners were no longer limited to Hong Kong, China; Macao,

[3] The 10 members of ASEAN—Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam—plus the PRC, Japan, and the Republic of Korea.

China; and ASEAN members. The scheme was in effect extended to all trading partners of the selected 20 PRC provinces and cities. In addition, the scope of the settlement scheme was enlarged to include services and other current account transactions. A further expansion of the RMB trade settlement scheme was implemented in August 2011, making coverage nationwide. Eligibility to settle trade in RMB was also offered to all licensed importers and exporters in good standing in March 2012. This basically repealed the system of having to enlist as a mainland designated enterprise before getting access to the platform.

Moreover, the PRC authorities relaxed the country's capital restrictions. In October 2011, RMB-denominated foreign direct investment (FDI) had been allowed from Macao, China and Taipei,China to the PRC. In particular, enterprises in the two economies were permitted to use offshore RMB proceeds for onshore FDI subject to certain restrictions.[4] Qualified foreign institutional investors (QFIIs), using offshore RMB, were likewise allowed to invest in PRC stock markets in December 2011. Although equity inflows were initially capped at CNY20 billion, this was raised to CNY70 billion in April 2012 (de Silva and Tan 2012). To provide a support mechanism to the build-up of RMB capital overseas, the PRC government has likewise aggressively negotiated swap agreements with a number of central banks. As of October 2013, active RMB swap lines with 21 partners totaled about CNY2.5 trillion (US$410 billion).

The introduction of the RMB trade settlement pilot scheme and its subsequent expansion has led to the establishment of an offshore RMB market in Hong Kong, China and to a lesser extent in Macao, China. While the original intent of the pilot scheme had been to promote trade settlement, the legal, regulatory, and financial infrastructure in Hong Kong, China also significantly encouraged non-trade related financial transactions.

The growing international acceptance of the RMB, coupled with recent liberalization measures, have inspired other financial centers—such as London, Singapore, and Taipei,China—to develop offshore RMB capabilities as well. Paris has also expressed its desire to catch up with the other financial centers. In addition, a number of central banks have showed interest to include RMB in the composition of their foreign reserves (BBVA 2013).

2.2 The Trade Settlement Framework

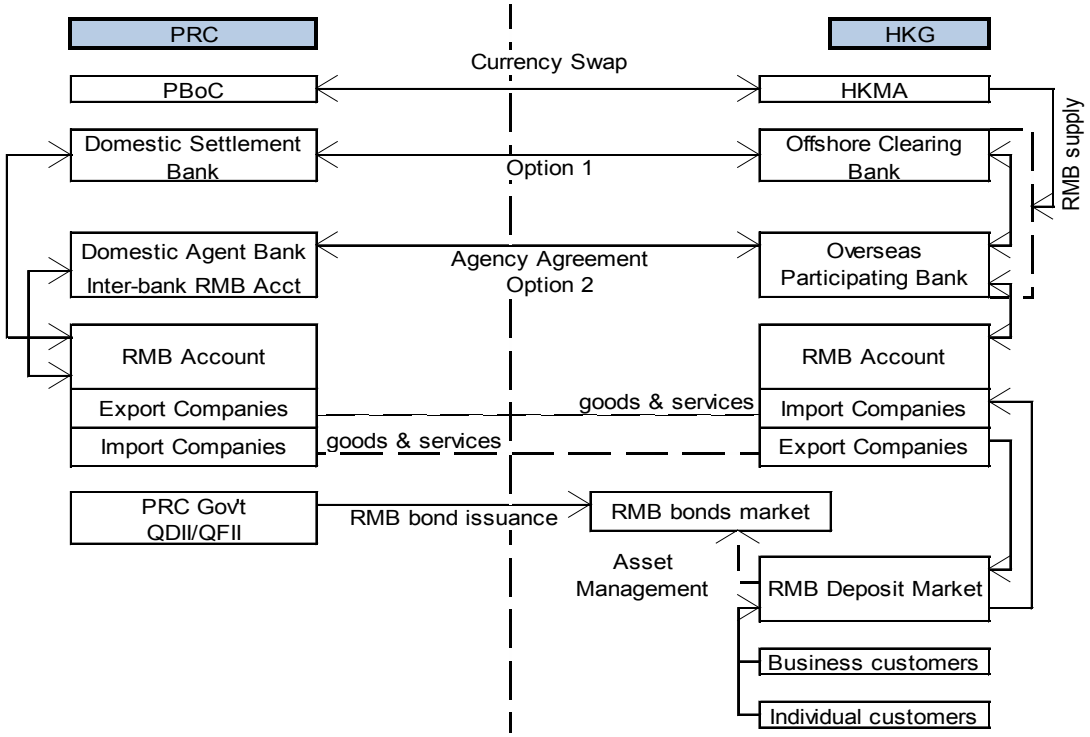
An overview of the RMB trade settlement scheme platform in Hong Kong, China is provided in Figure 1. Initially, the system required participating enterprises to be accredited by the PBoC and the Hong Kong Monetary Authority (HKMA) in their respective jurisdictions.[5] But the scope of the framework now includes all trading firms that import to and export from the PRC regardless of the location. Once an RMB-based

[4] RMB FDI applications valued at a minimum of CNY300 million must be approved by the Ministry of Commerce. Placement of cross-border RMB direct investment in securities, derivatives, and entrusted loans within the PRC is still not permitted. However, legitimately acquired offshore RMB funds can be utilized to assign or transfer stocks of PRC-listed companies subject to approval by the Ministry of Commerce (MOFCOM). Moreover, if inward RMB funds are intended to finance mergers and acquisitions (M&As) or related purposes, an application for a special RMB mergers and acquisitions (M&A) account will have to be submitted. Any FDI funds received by the foreign invested enterprise's onshore entity thereafter will also be subjected to the aforementioned MOFCOM approval/registration guidelines (MOFCOM 2011, HSBC 2011).

[5] The Monetary Authority of Macao, in the case of Macao, China.

transaction between onshore and offshore parties has been agreed, there are two possible alternatives for making cross-border payments.

Figure 1: The PRC–Hong Kong, China Renminbi Settlement Scheme



Acct = account; Gov't = government; HKG = Hong Kong, China; HKMA = Hong Kong Monetary Authority; PBoC = People's Bank of China; PRC = People's Republic of China; QDII = qualified domestic institutional investors; QFII = qualified foreign institutional investors; RMB = renminbi.

Source: Authors.

Take the case of an offshore importer. One way to move funds is by coursing the payment through an authorized participating overseas bank that will then have to transmit it to the designated offshore clearing bank. If the cash transaction poses no concerns based on the regulations of PBoC and HKMA, the offshore clearing bank will have to channel the funds to the onshore settlement bank before it reaches the onshore exporter's RMB account. The other way is by having a domestic commercial bank functioning as an agent of the overseas participating bank by virtue of a binding agreement. In this case, the former will have to open an onshore inter-bank RMB fund transfer account for the latter. The domestic agent bank will also be the one to settle the cross-border transaction and will have to report transaction details to the local PBoC office.

Notably, overseas participating banks, onshore settlement banks, and domestic agent banks have to be approved by HKMA (offshore) and PBoC (onshore) to gain eligibility in mediating RMB cross-border trade settlements. Offshore banks are given the option to either participate directly in the platform or conduct business indirectly via their subsidiaries in Hong Kong, China. Moreover, the scheme allows any bank outside the PRC to take part in the system (i.e., participation is not confined to banks based in Hong Kong, China). As of March 2013, a total of 208 banks were participating in the scheme in Hong Kong, China alone, which form a network covering over 30 countries and six continents. HKMA also estimates that these participating banks handle over 1,500 RMB correspondent accounts (HKMA 2013a).

RMB trade settlement in Macao, China practically follows the same model, with the Monetary Authority of Macao as the supervising institution. The Bank of China (Hong Kong) Limited (BOCHK) and the Bank of China Macau Branch were designated as the offshore clearing banks in Hong Kong, China and Macao, China, respectively.[6] Essentially, the two aforementioned Bank of China affiliates were authorized to convert foreign currencies into RMB and to utilize credit lines with the inter-bank foreign exchange and inter-bank borrowing market in the PRC in accordance with the parameters set by the PBoC (PBoC 2009). In addition to the onshore credit sources of the clearing bank, the swap line between the PRC and Hong Kong, China (which currently amounts to CNY400 billion), also stands ready to lend offshore RMB liquidity support.

One noteworthy change arising from the inception of the RMB trade settlement scheme infrastructure is that offshore parties that agree to settle trade transactions with PRC firms in RMB now have the facility to convert RMB to other major currencies with relative ease if the need arises. That significantly contributed to the increase in the demand for RMB deposits in Hong Kong, China and consequently in the rise of non-trade related financial transactions such as RMB-denominated bond issuance and asset management. This trend is helped by the efficient payment and securities settlement systems in Hong Kong, China, including its multicurrency Real Time Gross Settlement (RTGS) system (something which Macao, China still does not have[7]). Thus, the aversion to conducting trade business in RMB, which had previously been strongly underpinned by difficulties due to convertibility, has been reversed in recent years. Increases in RMB trade transactions resulting from the pilot scheme have led to a tremendous growth in offshore RMB deposits, which in turn fed the development of the offshore RMB bond and asset management market.

2.3 The Ensuing Results of the Renminbi Trade Settlement Scheme

From an initial 365 mainland designated enterprises approved to take part in the pilot RMB trade settlement scheme during its inception in 2009, the number had soared to over 67,000 by the end of 2011 (AHK Greater China 2011). Since March 2012, however, registration as a mainland designated enterprise has no longer been necessary. Monthly cross-border RMB trade settlements (RTS) rose from an average of CNY42.2 billion in 2010 to CNY244.8 billion in 2012, while the RTS share of total PRC trade with the world nearly quintupled from 2.5% to 12.0%. During the first 9 months of 2013, the RTS value further increased to an average of CNY351.1 billion, raising the RTS share of total PRC trade to 16.6% (Table 1).

In terms of the PRC's trade with Hong Kong, China, RTS facilitated by the BOCHK accounted for just 22.2% in 2010. Since 2011, however, the share has exceeded 100%, implying that some of the PRC's trade with other economies has also been settled in RMB that was cleared through Hong Kong, China. Indeed, the Philippines; the Gulf Cooperation Countries; Singapore; Taipei,China; the Republic of Korea; France; the United Kingdom; Thailand; Italy; and the Russian Federation have recently seen a strong uptake in the use of RMB for trade payments (Swift 2013b). Swift (2013b) also noted that of the 160 countries that settled payments with the PRC and

[6] The Clearing Agreement between the PBoC and the Bank of China affiliates in relation to RMB business was signed in July 2009.

[7] Macao, China launched its RTGS for the Macao pataca and US dollar in March 2013, but authorities are also looking to extend the facility to the PRC RMB (Swift 2013c).

Hong Kong, China in April 2013, 47 had used RMB as the settlement currency for at least 10% of their total payments.

Activity in Hong Kong, China currently dwarfs the turnover in Macao, China. Based on data for the first 9 months of 2013, RTS in Macao, China is just about 4.2% of the business in Hong Kong, China. One obvious reason is that when the pilot platform was launched, Hong Kong, China already had a substantially deeper financial market, a more sophisticated infrastructure, and a much broader international linkage. But looking at the growth of the RTS and the ratio of RTS to bilateral trade, Macao, China undoubtedly shows a promising potential. Between 2010 and 2012, RTS in Macao, China rose by more than 16 times and is likely to register a growth rate of about 50% in 2013. RTS from January to September 2013 stood at CNY108.9 billion, 60% higher than the CNY68.0 billion recorded in the first 9 months of 2012. The RTS ratio to bilateral trade of Macao, China and the PRC had likewise ballooned to over 700% by the end of September 2013 from less than 40% in 2010, also suggesting clearing through Macao, China of PRC's trade with other partners.

Table 1: Cross-Border Renminbi Trade Settlement

Period	Total RTS, CNY Bn	HKG RTS CNY Bn	MAC RTS CNY Bn	Total RTS, Mo. Ave, CNY Bn	HKG RTS, Mo. Ave, CNY Bn	MAC RTS, Mo. Ave, CNY Bn
Jul–Dec 2009	3.6			0.6		
Jan–Dec 2010	506.3	342.1	6.0	42.2	28.5	0.5
Jan–Dec 2011	2,080.8	1,914.5	62.8	173.4	159.5	5.2
Jan–-Dec 2012	2,938.2	2,632.5	97.2	244.8	219.4	8.1
Jan–-Sep 2013	3,160.0	2,616.6	108.9	351.1	290.7	12.1
Period	**HKG RTS, % of Total RTS**	**MAC RTS, % of Total RTS**	**Residual RTS, % of Total RTS**	**Total RTS, % of PRC Total Trade**	**HKG RTS, % of PRC trade with HKG**	**MAC RTS, % of PRC trade with MAC**
Jul–Dec 2009				0.04		
Jan–Dec 2010	67.6	1.2	31.2	2.5	22.2	39.3
Jan–Dec 2011	92.0	3.0	5.0	8.8	104.5	386.8
Jan–Dec 2012	89.6	3.3	7.1	12.0	122.1	516.1
Jan–Sep 2013	82.8	3.4	13.8	16.6	156.2	741.4

Ave = average; Bn = billion; CNY = yuan; HKG = Hong Kong, China; MAC = Macao, China; Mo. = monthly; PRC = People's Republic of China; RMB = renminbi; RTS = RMB trade settlement.

Note: RTS covers goods and services trade, while total trade refers to merchandise trade only. For consistency, all trade data were sourced from the PRC statistics.

Sources: CEIC, PBoC, HKMA, Monetary Authority of Macao, and authors' calculations.

Initially, trade settlements had been largely import-oriented (i.e., RMB flows were biased in favor of settling PRC imports as opposed to invoicing PRC exports). The receipt-to-payment ratio by the end of 2010 was 1:5.5 (PBoC 2012a). But gradually, the ratio seems headed toward a more balanced RMB flow. In 2011, the ratio improved to 1:1.7, while as of end-2012 it stood at 1:1.2 (PBoC 2013a).

This trend is inevitably related to market expectations of RMB appreciation and arbitrage opportunities between the onshore RMB (CNY) and offshore RMB (CNH) markets. Zhang and Xu (2011) show that the RMB receipt-to-payment ratio is highly correlated with the CNH–CNY spread. But despite the recent narrowing of the CNH–CNY spread, the growth in RTS has remained robust. RTS in 2012 still grew year-on-year by 41.2% (and in the first 9 months of 2013 by 54.4%), albeit substantially slower than the 311% year-on-year expansion registered in 2011. Certainly, the absence of a

reversal in the RTS growth path and receipt-to-payment ratio in light of the generally weaker RMB appreciation expectations and the tapering cross-RMB market arbitrage opportunities indicates that growing RMB utilization is not only due to currency speculations.[8]

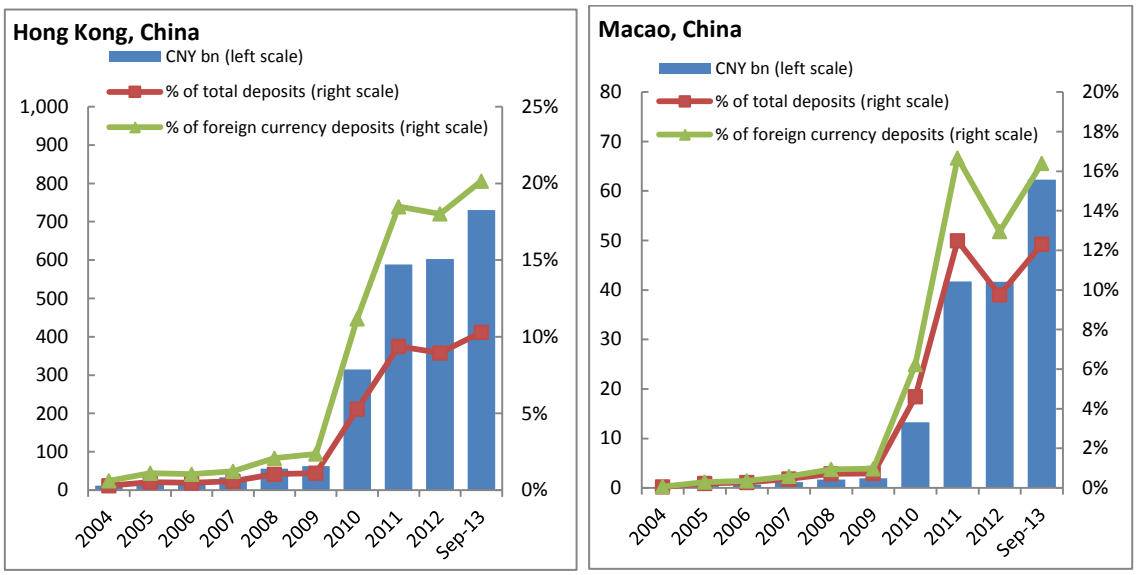
One immediate result of the expansion of RMB-based cross-border trade settlement is the swelling of RMB deposits in Hong Kong, China and Macao, China. As traders are secure in their ability to convert their RMB deposits into reserve currencies, whenever they want to or need to they have an incentive to increase their holdings of offshore RMB deposits. This expedites the growth of RMB-denominated financial products, which in turn increases RMB-denominated lending and borrowing to offshore investors who have no trade linkages with PRC corporations.

From about CNY62.7 billion at end-2009, the total RMB deposit value in Hong Kong, China had ballooned to CNY603.0 billion at end-2012, and further to CNY730.0 billion by end-September 2013 (Figure 2). Overseas banks' RMB correspondent accounts increased more than five times over 12 months—from 187 in 2010 to 968 the following year before breaching the 1,500 mark in March 2013. RMB amounts due to and from overseas banks (banks based outside the PRC and Hong Kong, China) rose considerably, from CNY30.5 billion at the start of 2011 to CNY216 billion 2 years later (Chan 2013). And the number of institutions authorized to conduct RMB business (deposit-taking, remittances, and cross-border trade settlement) in Hong Kong, China had risen from 49 at the end of July 2009 (Sekine 2011) (right after the RMB trade settlement scheme was put in place) to 187 at the end of 2011 (KPMG 2012) to 208 at the end of the first quarter of 2013 (HKMA 2013a).

Similarly, in Macao, China, RMB deposits increased by a factor of over 700 in less than 9 years—from CNY82 million at the end of 2004, they swelled to almost CNY62.3 billion 9 months into 2013. Accordingly, RMB deposit share of total deposits in Macao, China has risen dramatically from 0.06% in 2004 to 12.3%, based on the most recent data. A majority of the 29 banks in Macao, China have signed clearing agreements with the clearing bank for relevant RMB businesses.

[8] He (2012) concludes that as the PRC's economic power continues to grow, non-PRC residents will have an incentive to increase their exposure to RMB assets and liabilities. Such an incentive is likely to remain strong and not easily reversed by the cyclicality of RMB exchange rate expectations.

Figure 2: Outstanding Renminbi Deposits in Hong Kong, China



CNY = yuan, RMB = renminbi.

Sources: CEIC, HKMA, and Monetary Authority of Macao.

The rapid expansion of RMB trade settlement and the accompanying measures that recalibrated other capital flow policy regulations, such as the circulars relaxing FDI[9, 10] and equity investment regulations,[11, 12] have bolstered the growth of the RMB bond market in Hong Kong, China (also known as the dim sum bond market). From only CNY10 billion in 2007—the year when the first dim sum bond was issued—RMB-denominated bond issuance in Hong Kong, China increased significantly to CNY189.5 billion in 2011 and CNY281.9 billion in 2012 (Figure 3).[13] In the first 10 months of 2013, bond issuance swelled to CNY305.4 billion. The number of bond issuances has likewise climbed steeply from just five in 2007 to 417 in 2011 and to 891 as of end-2012[14] while the number of bond issuers increased from just three in 2007 to 107 by the end of 2011, and 124 in 2012. From January–October 2013, 943 bonds were issued by 111 issuers.

[9] MOFCOM (2011), which became effective on 12 October 2011.

[10] PBoC (2011b), which became effective on 13 October 2011.

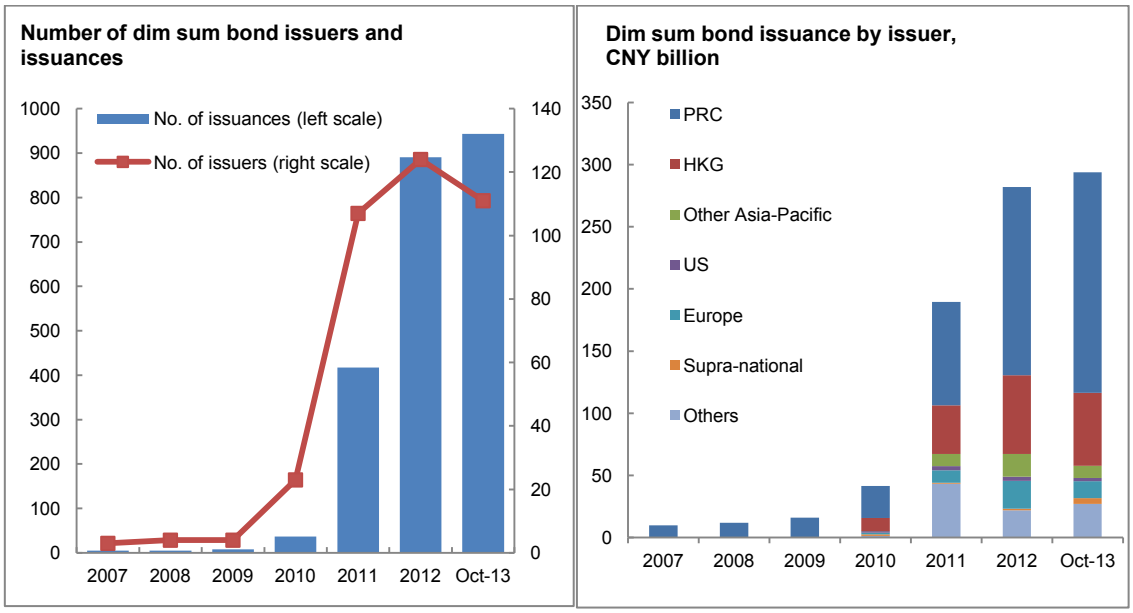
[11] The renminbi qualified foreign institutional investor scheme is governed by the Pilot Scheme for Domestic Securities Investment.

[12] Previously, a foreign company could only participate in the PRC's securities market via the qualified foreign institutional investor program whereby the company can convert foreign currency to RMB to take part in the trading. The [People's Republic of] China Securities Regulatory Commission has to approve the application while the State Administration of Foreign Exchange determines the allocation of quota.

[13] Initially, bond issuers were limited to sovereign entities and PRC banks, but these have expanded to include multinational corporations (such as Caterpillar, McDonald's, Tesco, Unilever, and Volkswagen) and multilateral organizations (such as the Asian Development Bank, the World Bank, and the International Finance Corporation).

[14] In May 2012, the National Development and Reform Committee decided to allow non-financial corporations in the mainland to issue RMB bonds in Hong Kong, China (ANZ Research 2012).

Figure 3: Renminbi Bond Issuance in Hong Kong, China



CNY = yuan; HKG = Hong Kong, China; PRC = People's Republic of China; RMB = renminbi; US = United States.

Source: Authors' calculations from Bloomberg data.

The RMB capital market in Hong Kong, China also saw sizable corrections in key indices due to the gradual opening of the PRC's capital account. For instance, sovereign yield spreads[15] (CNY–CNH) narrowed from a range of 1.9–3.8 percentage points in June 2011, to less than half a percentage point in October 2012 (on average) before settling around 1 percentage point beginning in June 2013. Deposit rate spreads (CNY–CNH) swung from a positive margin of 2–3 percentage points in June 2011 to below zero in June 2013, but turned positive again (at around 1 percentage point) at the end of August 2013. Similarly, the Hang Seng China AH Premium Index,[16] which had been trading at a premium of over 100%, favoring stock prices of PRC companies' A-shares at one point in 2008, declined considerably from mid-2010 (i.e., the prices of H-shares caught up with the prices of A-shares and even exceeded the latter on some trading days).[17] With the increase in offshore liquidity, RMB clearing transactions also surged, from CNY39.3 billion in 2009 to CNY43.2 trillion in 2012, while the cumulative value as of September 2013 was already about CNY57.6 trillion, indicating favorable conditions for RMB businesses offshore.

In Macao, China, the resulting business synergies are not as pronounced as in Hong Kong, China despite the phenomenal growth in RTS and RMB deposits. Nevertheless, local authorities are looking to up the ante in the years ahead by re-packaging their

[15] This refers to the differential of yuan government Bloomberg Fair Value curve and offshore yuan [People's Republic of] China Government Bond curve (per Bloomberg's definition).

[16] Some companies trade both in the stock market in Shanghai and Hong Kong, China. A-shares refer to the stock price of the company in Shanghai, while H-shares refer to the stock price of the same company in Hong Kong, China. The Hang Seng China AH Premium Index ("HSAHP") measures the absolute price premium (or discount) of A-shares over H-shares for the largest and most liquid PRC companies with both A-share and H-share listings (Hang Seng Indexes, http://www.hsi.com.hk/HSI-Net/HSI-Net).

[17] The index spiked briefly starting end-September 2011, when there were speculations about Asia's ability to absorb external weakness, but the differential in the stock prices quickly declined in the next 2–3 weeks.

RMB hub as the gateway for Portuguese-speaking trading partners of the PRC. The target markets include Angola, Brazil, Cape Verde, East Timor, Guinea-Bissau, Mozambique, Portugal, and São Tomé and Príncipe (Teng 2013). The Chairman of the Monetary Authority of Macao has noted the increasing economic ties between the PRC and the Lusophone (i.e., Portuguese-speaking) countries over the years. Evidently, based on the IMF Direction of Trade Statistics, bilateral trade growth between the two blocs averaged 39.4% annually from 2000 to 2012.

Recent developments suggest that the interest in RMB business is gaining headway outside of the two pioneer offshore RMB locations. In the first half of 2013, Taipei,China and Singapore were permitted to operate their own RMB hubs after successfully negotiating clearing agreements with the PRC. The local branch of the Bank of China and the Industrial and Commercial Bank of China (ICBC) were designated as clearing banks in Taipei,China and Singapore, respectively (PBoC 2013b). This decision makes business sense since these two economies occupied the second and third spots in the list of the biggest RMB remitters to the PRC and Hong Kong, China as of April 2013 (Swift 2013a).

Taipei,China's participation in the PRC's efforts to promote the RMB overseas could be traced back to the signing of the Cross-Straits Banking Supervision Memorandum of Understanding in November 2009 (Subacchi and Huang 2013). Notably, the PRC presently accounts for close to a quarter of Taipei,China's total trade, making it the economy's biggest trading partner. While Taipei,China does not appear to be interested in challenging Hong Kong, China's primordial role in the region in terms of RMB business, it has aspirations of making it big as an intermediary (Subacchi and Huang 2013).

Within around 4 months of the RMB platform being formalized in Taipei,China, RTS had risen to CNY240 billion, as reported by the Bank of China (2013). RMB clearing in Taipei,China had been participated in by 64 agent banks, which had processed 36,000 RMB settlement and clearing transactions as of 5 July 2013. Moreover, members of the local financial circles saw the commencement of Taipei,China's version of dim sum bonds. The first RMB bonds in Taipei,China—locally known as the "bao dao" or "Formosa" bonds—were issued by Chinatrust Financial Holding on 25 February 2013. The notes had a 3-year tenor worth CNY1 billion at a yield of 2.9%. Deutsche Bank became the first foreign institution to tap Taipei,China's RMB bond market after completing a CNY1.1 billion debt sale on 5 June 2013. The fund-raising was comprised of CNY1 billion 3-year bonds at 2.45% and CNY100 million 5-year non-call one bonds at 2.65%. After a series of successful tenders (five in all, totaling CNY3.9 billion as of June 2013),[18] some of the well-known brands in finance (e.g., China Development Bank, ICBC, Barclays, HSBC, and Standard Chartered) were seen to be following suit (Wong 2013). Outstanding RMB deposits in Taipei,China stood at CNY98.7 billion at end-September 2013 from practically nil when local banks started accepting RMB deposits 7 months earlier.[19]

Singapore aims to corner the growing PRC transaction volume of Southeast Asian countries, which to a certain extent would put it toe-to-toe with Hong Kong, China. The market did not disappoint when Singapore opened its bid to challenge Hong Kong,

[18] Based on data from Bloomberg.

[19] Based on the media release of the Bank of China (2013), 64 banks are currently taking part in RMB intermediation in Taipei,China. This indicates that nine in every 10 banks in Taipei,China offer RMB facilities. According to the statistics posted on the website of the central bank of Taipei,China, there are a total of 69 banking institutions in Taipei,China, of which 41 are domestic and 28 are foreign bank affiliates based in Taipei,China.

China's dominance in facilitating RMB dealings. Two business days after the release of the circular regarding the conduct of RMB business in Singapore, HSBC and Standard Chartered issued the first "Lion City" RMB bonds totaling CNY1.5 billion. Standard Chartered rolled out a 3-year CNY1 billion bond at 2.62%, which was three times oversubscribed. HSBC, on the other hand, floated CNY500 million worth of debt papers yielding 2.25%. RMB deposits in Singapore have built up to over CNY60 billion a month after the RMB platform began to function—about the same RTS value recorded by ICBC during the period.[20]

In Europe, the City of London, with the support of some of the biggest banks in the world (collectively subsumed under the group "City of London Initiative"),[21] has also been campaigning quite strongly to have its own clearing bank and to effectively become the RMB corridor of the continent. According to the Swift RMB tracker (2013a), the United Kingdom (UK) is the largest RMB remitter to the PRC and Hong Kong, China. Thus, it makes sense for the City to lobby for its own platform. With the PRC trying to ramp up its business interests outside Asia, the wide-ranging London financial sector stands to capitalize on the massive potential of RMB-based international flows.[22] In October 2013, the UK and the PRC reached an agreement granting London-based institutional investors a CNY80 billion quota to invest in PRC domestic securities through the renminbi qualified foreign institutional investor scheme. The following month London also played host to the first RMB bond issuance of a PRC institution outside of PRC juridical territory when ICBC successfully negotiated CNY2 billion worth of debt notes with investors based in the English capital, cementing London's stature as Europe's leading RMB hub.[23]

Indeed, with the establishment of RTS and the implementation of the associated deregulation measures, offshore liquidity circulation and competition have improved, the gaps between the fundamental onshore market indices and their offshore counterparts have narrowed, and offshore RMB-related business has flourished.[24]

2.4 Lessons Learned

The pilot RMB trade settlement scheme provides a few lessons for Asia concerning its role in reforming the IMS.

First, it shows that building the necessary monetary and financial infrastructure can make a difference. Lack of infrastructure and high transaction costs between non-US

[20] There are presently some 50 banks participating in the RMB business in Singapore, according to information provided by the Monetary Authority of Singapore (MAS) to the authors. This number represents roughly a quarter of the total number of banking institutions in the country, However, it is only reasonable to expect that involvement of banks in the new market will broaden in the coming years as RMB liquidity increases. There are generally no restrictions on banks conducting RMB business and any bank may opt to conduct RMB business as long it complies with existing regulations (MAS 2013).

[21] The list of banks includes Bank of China, Barclays, China Construction Bank, Citi, Deutsche Bank, HSBC, ICBC, JP Morgan, Royal Bank of Scotland, and Standard Chartered.

[22] In addition to London, Frankfurt and Sydney are also reportedly crafting strong cases to become RMB hubs.

[23] The first RMB bond issuance in London was done by HSBC Holdings in April 2012. The bond offer raked in CNY2 billion. This was followed by a bond tender by the Australia and New Zealand Banking Group Limited amounting to CNY1 billion in August 2012 (City of London 2012).

[24] Eichengreen (2012) argues that the PRC's plan for the RMB to rival the US dollar depends on how it addresses the following challenges in the long run: (i) building more liquid financial markets; (ii) opening the capital account; (iii) handling the growth slowdown; and (iv) making credible commitments to develop deep and liquid financial markets.

dollar currencies are the prime reasons for the triangular transaction of non-US dollar currencies through the US dollar and the skepticism that no currency can replace the role of the US dollar as global reserve currency in the near future. But the RMB trade settlement scheme shows that this can be a "chicken and egg" question. It is a good example of how proper infrastructure can facilitate trade transactions and generate new demand. This experience implies that, rather than focusing on what the new global reserve currency should be, building the necessary monetary and financial infrastructure and letting markets determine the winner may be an appropriate approach in reforming the IMS. It is true that markets, not governments, determine settlement currencies, but policy also plays a role. Asia's development experience in particular demonstrates that governments can build infrastructure to affect markets' choice. Asia has not yet invested in cross-border financial infrastructure and if Asia continues to avoid doing so, high transaction costs and risks will remain.

Second, another important implication from this experience is that full liberalization of the capital account or full deregulation of capital markets is not required for a currency to be internationalized. To be a reserve currency, full convertibility may be necessary, but establishing regional settlement currencies may not require full liberalization. The cases of the Japanese yen and the former German mark demonstrate that a currency can be used for settlement and reserve holdings while remaining subject to certain capital controls. Similarly, the RMB trade settlement scheme is a highly restrictive and controlled system but it can still contribute to reducing US dollar dependence and diversification of international settlement currencies in the medium term. The fear of risks involved in capital market liberalization and deregulation cannot be an argument against the internationalization of local currencies. One can argue that the RMB trade settlement scheme can cause more speculation and volatility as it contributes to increased offshore activities (Yu 2012b; Mallaby and Wethington 2011). However, this view is somewhat exaggerated. Even without the RMB trade settlement scheme, the non-deliverable forward (NDF) market can flourish and affect domestic monetary policy management and volatility in a similar way to the RMB trade settlement scheme. The recent experience of the Republic of Korea's won NDF market is a case in point. Other examples include the Australian dollar and the Mexican peso, where offshore capital market developments preceded local markets. It is true that the RMB trade settlement scheme can increase offshore deposits and thereby offshore RMB borrowings, which can be used for leveraged speculative attacks. However, the beauty of the current system is that the PRC government is liable only up to some multiple value of settlement of trade-related payments, limiting the possibility of speculative attacks. On the other hand, it spurs the development of selected capital market instruments in offshore markets. Compared with its long-term benefits, such as local currency denominated offshore capital market development and a gradual learning experience for managing capital market opening, the cost does not seem large. This is even more accurate if we consider that the NDF market for the RMB would have developed much faster anyway.

Third, to be effective, payments and securities settlement systems should go hand in hand. People would not own RMB deposits if the opportunities for managing their assets were limited. In other words, the availability of other investment opportunities for RMB, such as RMB bonds and RMB investment and asset management products, is an important aspect of the system that has promoted the wider use of the RMB. This investment opportunity would not have arisen had a securities settlement system not been in place. The early success of the RMB trade settlement system is partly due to the efficient securities trading and settlement system in Hong Kong, China, where infrastructure for payment vs. payment is available together with infrastructure for delivery vs. payment for RMB securities. A joint payments settlement and securities

settlement infrastructure can also solve the cross-border securities settlement risks, the so-called third time zone problem, as will be discussed in the next section.

3. EXPANDING AND DEEPENING THE REGIONAL CURRENCY SETTLEMENT SYSTEM

3.1 Expansion of the Bilateral Trade Settlement System

Considering the initial success of the RMB trade settlement system, one can think of two options for further promotion of RMB internationalization. One is to expedite capital market liberalization and allow more repatriation of the RMB in overseas markets to the PRC (Ma, Liu, and Miao 2012). An alternative approach would be further expansion of the trade settlement scheme to neighboring economies. Unlike during the first phase of yen internationalization, [25] both options are consistent with the apparent policy willingness of the PRC authorities to push the RMB up the reserve currency ladder in the long run.[26]

With the volume of offshore RMB deposits increasing, there has been and will be more outside pressure on the PRC to allow the deregulation of capital markets through the repatriation of RMB offshore to the PRC. Allowing more repatriation and capital market liberalization will definitely accelerate the internationalization of the RMB and be inevitable in the long run. But deregulation will complicate exchange rate and monetary policy management as well as pose risks of capital volatility in the short run. Even though more deregulation is called for, the PRC government needs to carefully delineate between the policy objective of ensuring an orderly capital market deregulation and the objective of developing offshore capital markets and promoting RMB internationalization. As such, it may need to consider first expanding the current trade settlement scheme to other regional economies such as Japan, ASEAN, and the Republic of Korea. This way the PRC can continue with its RMB internationalization plan while gradually deregulating and deepening RMB-denominated financial markets.

In fact, expanding the local currency trade settlement scheme into a regional trade settlement system does not need to be led by the PRC alone. As a practical solution for IMS reform, Asian economies could introduce a bilateral or multilateral trade-related payment settlement scheme such as that between the PRC and the current offshore hubs. Extending the trade settlement scheme to regional economies does not imply that all regional currencies will be internationalized or used for settlement of trade transactions. Markets will determine which currencies will be more widely used for trade settlements, and the RMB will most likely dominate. But irrespective of which currency will be used more often or chosen by the market, the emergence of regional currencies as trade settlement currencies will reduce developing Asia's dependence on the US dollar and contribute to the diversification of international settlement currencies. Indeed, these agreements do not even have to be limited to Asian economies. Trade

[25] The proceedings in the internationalization of the yen can be divided into two phases. The first phase is from the 1970s to the mid-1980s when the international use of the yen was a popular market strategy but not a popular government policy. The second phase started sometime in the mid-1990s when the government's perception about the supposed international status of the yen changed but the market was no longer as willing as it had been to accommodate the yen as a portfolio currency in the face of less rosy prospects for the Japanese economy (Frankel 2011; Maziad and Kang 2012).

[26] Mallaby and Wethington (2011) discuss the political economy behind the unorthodox sequencing of RMB internationalization.

among emerging economies is on the rise, and local currency trade settlements could facilitate the integration of interregional emerging markets more broadly.

Intra-regional trade has grown tremendously over the past 3 decades. In 1990, annual trade within developing Asia was only $284 billion. By 2012, intra-Asian trade had risen to $4,371 billion (equivalent to an average annual growth rate of 12.4%). Considering the rising middle income class in Asia and the protracted slowdown in advanced economies, Asian traders are likely to look further to their neighbors as alternative destinations of the goods they produce. If regional traders continue to use the US dollar to settle transactions, the vulnerability of Asian economies will increase.

As noted above, RMB cross-border trade settlement in Hong Kong, China and Macao, China has already exceeded 100% of their bilateral trade with the PRC. If we assume that all intra-regional trade within developing Asia is settled in local currencies, the use of the US dollar for trade transactions could potentially be reduced by over $4 trillion per year.

Data from the Hong Kong Interbank Clearing System suggest that RMB clearing transactions have also risen very strongly. When it started operations in 2006, the monthly average transaction value was only CNY352 million. In the first 10 months of 2013, average RMB clearing transactions in Hong Kong, China reached CNY6,326 billion. This is more than 21 times the monthly average PRC trade settled in RMB due to the rapid rise in non-trade related RMB transactions. This factor of 21 demonstrates the huge potential of reducing US dollar usage in developing Asia through local currency intra-regional clearing transactions.[27]

The PRC can learn from the experience of the US during the early part of the 20th century. The prime position of the US dollar in the international monetary system today was achieved mainly as a result of a combination of timely circumstances.[28] Of particular importance was the development of the US dollar-denominated trade acceptances market resulting from the passage of the Federal Reserve Act (FRA) of 1913 and the subsequent supporting measures of the Federal Reserve (the Fed). The dramatic expansion of US dollar-denominated trade acceptances proved to be a pivotal factor that underpinned the transformation of the US dollar from a marginal currency to the most dominant unit of money in the world. Until then, despite the US's enormous trade linkages, US traders, along with most traders in other countries, had been heavily reliant on the London market to finance their trade negotiations, albeit at a higher cost.[29]

In essence, the FRA gave the US domestic financial market much needed stability with the creation of the Fed as the central monetary regulator and as a lender of last resort.

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[27] To illustrate, if 100% of intra-regional trade transactions in developing Asia is settled in local currency, US dollar usage could be reduced by over $4 trillion per year. If local currency intra-regional clearing transactions could amount to 21 times this value, it would run up to over US$90 trillion per year, which is a significant improvement but still only a small fraction of the over US$200 quadrillion annual (or more than US$800 billion a day) over-the-counter foreign exchange turnover in US dollars in the 10 Asian economies (i.e., the PRC; Hong Kong, China; India; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; Taipei,China; and Thailand) included in the BIS Triennial Central Bank Survey (BIS 2013). As such, the proposal in this paper should be regarded as a first small step toward regional settlement currencies.

[28] These include a dramatic growth in the global economic reach of the US beginning the mid-1800s, well-grounded forward-looking domestic regulations following a series of financial crises by the turn of the century, and the unfortunate turn of events that hobbled its European rivals in the first half of 1900s.

[29] The US surpassed the economic size of the United Kingdom (UK) in 1870 and the value of US merchandise exports exceeded the UK's in 1912 (Eichengreen 2011).

Having such an institution lessened market volatilities and improved the investment climate. The FRA also did away with restrictions on foreign bank branching as well as trade financing and provided a structure for US banks to expand their overseas operations, especially the promotion of US dollar-denominated trade credits.[30] Authorities initially viewed the promotion of US dollar trade acceptances overseas as a way to smoothen "interest rate spikes and market seizures" (Eichengreen 2011).

With the trade acceptances market in place, the unfolding of World War I provided an important avenue for the US to elevate the US dollar's international position.[31] The war, which disjointed both the flow of commodity and trade financing in Europe, resulted in increased international demand for US commodities and US dollar trade credit. After the war, no country in Europe was in a position to compete with the US economically or financially. Rather, post-war reconstruction broadened the trade and financial dependence of Europe on the US, and placed the US dollar much more firmly at the center of the international monetary system. At some point in the mid-1920s, even imports and exports between countries that neither touched the US shores nor involved US enterprises already made use of US dollar trade acceptances.[32]

Expansion of the RMB trade settlement scheme into a multilateral system could be based on the settlement system that was initially put in place when the euro was launched. Before the introduction of the euro, eurozone member countries had their own independent real time gross settlement (RTGS) systems for their national currencies. With their adoption of the single currency in 1999, these independent systems were linked together via the Trans-European Automated Real-Time Gross Settlement Express Transfer (TARGET) system following the definition of harmonized

[30] The National Bank Act of 1863 that preceded the Federal Reserve Bank Act of 1913 had strict branching restrictions. National banks were not allowed to have branches in other countries, nor at times even in other states. National banks were also prohibited from entering into trade credit transactions. The only national bank not covered by the regulation was the International Banking Corporation—a specialized institution created to focus on overseas banking, but which was not allowed to deliver banking services domestically on antitrust grounds. Although trust companies were permitted to branch out overseas, only a handful of institutions did erect branches on foreign soil. Some big US private banks that were outside the scope of national regulations and had overseas offices could have easily entertained trade credit transactions. But incentives to do so were low. They were largely hampered by their cost disadvantage compared with their European counterparts. The US, in the absence of a central financial market regulator and a lender of last resort, constantly succumbed to highly volatile market swings, making investment activities (even reserve placement) very risky. The US at that time also had an underdeveloped financial market that made it difficult to re-sell the acceptances.

[31] A shallow investor pool, a lack of familiarity of US-based creditors with the trade acceptances, and the difficulty of liquidating the instruments initially hampered full-blown development of trade financing business in the US. But the Fed responded by directing its regional offices to take on the trade financing responsibilities in their own accounts, which lowered the discount rates on trade acceptances. The Fed's actions organized the trade acceptances credit flow and gave credibility to such notes with its regional branches serving as the primary counterparty that made them easier to trade. The resulting ease with which US dollar trade acceptances could be intermediated provided an incentive for its usage. Subsequently, the US dollar trade acceptances market begun to attract more investors, not just domestically but also foreign central banks surpluses in the US, thus paving the way for the considerable expansion of the instrument's utilization.

[32] The increasing role of the US dollar in international trade finance spilled over to other financing arrangements. The stability in the value of the US currency owing to a much stronger domestic financial market made it an attractive vehicle to do business and move money across borders. It was not just a case of Europeans reaching out to the US markets; the US authorities also aggressively promoted US dollar financing in Europe. By contrast, the war undermined the international standing of the then reigning de facto global currency—the UK's pound sterling—as a result of a deterioration in the UK's public finances. Internal disruptions affecting the UK's production lines added to the growing loss of confidence in the UK currency.

standards for cross-border sending and receiving of payments. Central banks continued to handle the settlement of payments for their domestic banking community.

At that time, transaction fees were not harmonized and were individually set by each central bank. The decentralized nature of the system also multiplied the costs. To better harmonize service and cost, as well as to improve cost-efficiency (since revenues were insufficient to cover costs), the Governing Council of the European Central Bank agreed in 2002 to establish the second generation TARGET system, i.e., TARGET2. The new system offers harmonized services delivered on a single technical platform—the "Single Shared Platform"—at uniform cost. Fees were set at levels that allow the system to fully recover costs. TARGET2 went live in November 2007, but replaced the first generation system only in May 2008.

In general, TARGET2 facilitates the settlement of euro payments in central bank money with immediate finality. Currently, TARGET2 is considered to be one of the top three global wholesale payment systems and settles transactions the size of the annual eurozone gross domestic product (GDP) in just over three days. At the local level, the decentralized nature of TARGET2 is maintained, and the relationship between central banks and their counterparties is preserved, including those for monetary policy and lender of last resort.

3.2 Combining the Regional Trade and Government Bonds Settlement Systems

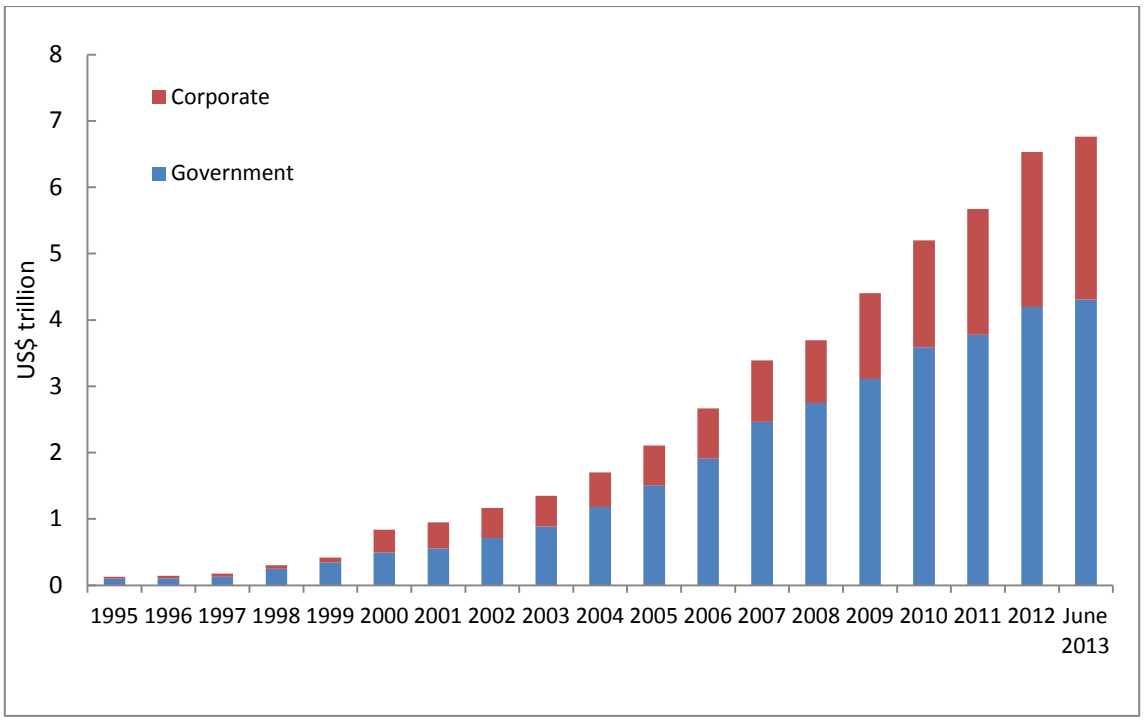
One lesson from the RMB trade settlement scheme experience of Hong Kong, China is that having an efficient payments and securities settlement system could simultaneously have strong synergy effects in terms of promoting internationalization of regional currencies. As such, the regional trade payment settlement system could be combined with a government securities settlement scheme. This could be an effective way to both reduce US dollar dependence and promote local currency denominated bond markets in Asia.

After the Asian financial crisis in 1997, the ASEAN+3 economies tried hard to promote the development of local currency denominated bond markets. There was a strong realization that the underdevelopment of bond markets in the region greatly exacerbated, or perhaps even caused, the crisis. The idea of regional bond markets was promoted as a means of overcoming the double mismatch problem that most Asian borrowers face when they try to raise funds abroad. The double mismatch refers to the currency mismatch and the maturity mismatch, and it is also considered to be the root cause of the 1997 Asian financial crisis.

Supported by these policy initiatives, local currency bond market issuance in developing Asia has expanded rapidly since the Asian financial crisis. From only US$126 billion by the end of 1995, outstanding local currency bonds in Asia had ballooned to US$6,532 billion by end-2012, and US$6,762 billion by June 2013 (Figure 4). While corporate bond issuance has likewise increased, government bonds still account for close to two-thirds of this amount. It is worth noting that cross-border holdings of portfolio securities among ASEAN+3 economies have sharply increased as well. Intra-ASEAN+3 cross-border holdings of debt securities were US$29 billion in 2001 and amounted to US$130 billion at end-2012 (Figure 5). Since bonds originating from Asia are predominantly government securities, these cross-border holdings are perhaps mostly government bonds too. This implies that there are tremendous new business opportunities for cross-border trading and settlement of government bonds in

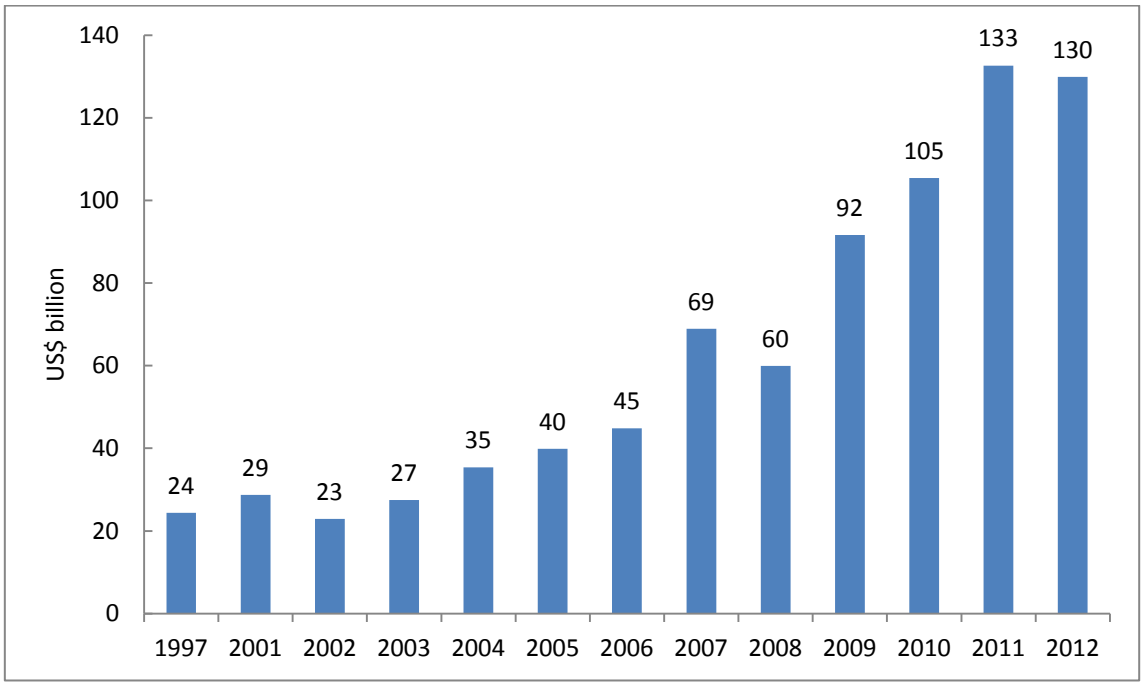
Asia. So combining the regional trade payment settlement system with a government securities settlement scheme could make good business sense as well.

Figure 4: Local Currency Bonds Outstanding in Asia, US$ trillion



Source: AsianBondsOnline.

Figure 5: Intra-ASEAN+3 Cross-Border Holdings of Debt Securities, US$ billion



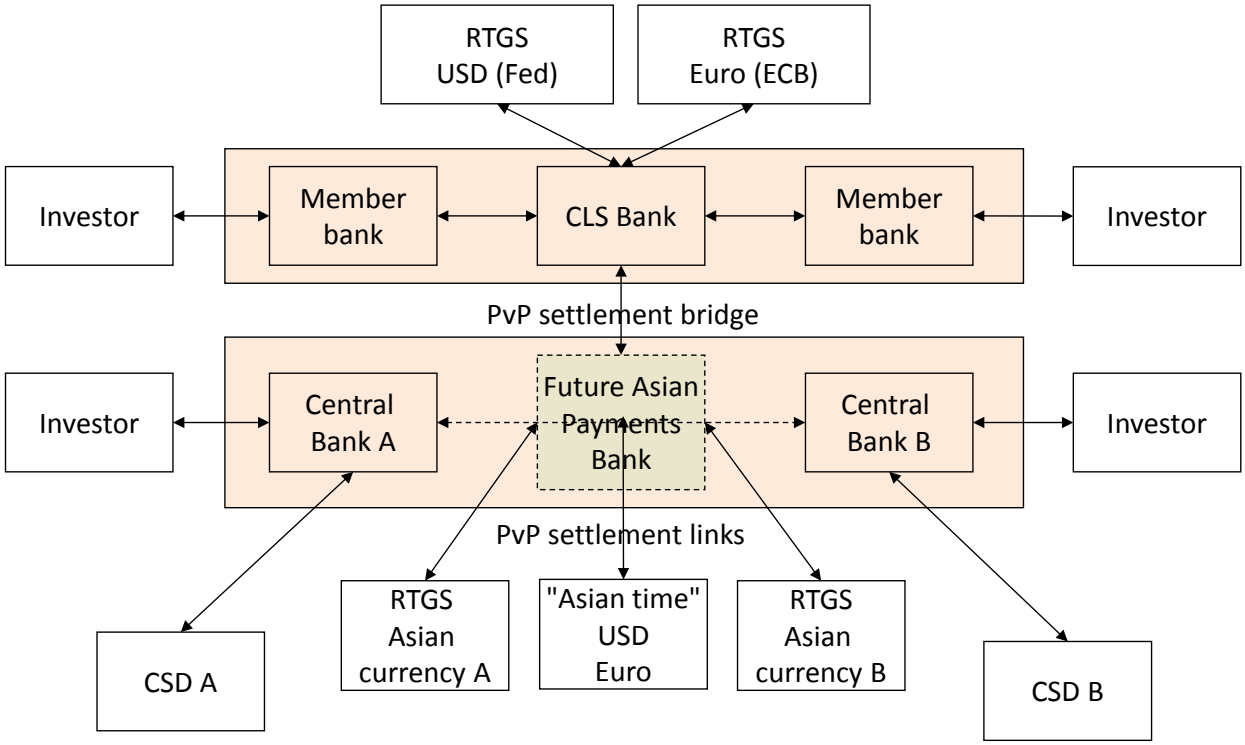
ASEAN+3 = Association of Southeast Asian Nations (Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam) plus the People's Republic of China, Japan, and the Republic of Korea.

Source: IMF Coordinated Portfolio Investment Survey.

In fact, as a part of the ASEAN+3 Asian Bond Markets Initiative (ABMI), discussions are currently underway to set up a Regional Settlement Intermediary (RSI) for securities, in particular cross-border bond transactions (ADB 2010). This is a very important initiative and some limited progress has been made. Building a full business model for securities settlement would require large fixed costs and full liberalization of capital markets. Progress with the realization of this initiative has slowed after the global financial crisis partly due to the increasing unwillingness of regional governments to expedite capital market liberalization.

For the time being, instead of trying to develop a full-scale RSI with full capital market liberalization, it may be better to focus on a government bond trading and settlement system together with a trade-related payment settlement system. This proposal is presented schematically in Figure 6.

Figure 6: The Proposed System



- - - = potential future additions, CLS = continuous linked settlement, CSD = central securities depository, ECB = European Central Bank, RTGS = real time gross settlement, USD = United States dollar.

Source: Authors.

Similar to the RMB trade settlement scheme between the PRC and Hong Kong, China, Asian central banks could enter into bilateral agreements with other regional central banks (i.e., just like the one between PBoC and HKMA) to allow the settlement of trade transactions in regional currencies. In addition, using the same platform, trading and settlement of government bonds could be included in these bilateral trade settlement agreements. Having an efficient payments and securities settlement system simultaneously could have strong synergies in promoting internationalization of regional currencies as demonstrated by the RMB trade settlement scheme in Hong Kong, China. To make this proposal work, central banks need to ensure that there is sufficient supply of their local currencies in partner countries to facilitate payment of trade as well as government bond transactions. In other words, as long as traders are able to provide evidence that their holdings of regional currencies result from trade or government bond transactions, central banks could guarantee the convertibility of

these regional currencies into international currencies anytime. Opening of bilateral currency swap lines is thus vital to address these liquidity considerations inasmuch as trade and government bond transactions are concerned.

However, unlike in trade transactions where actual delivery of goods is outside the scope of the settlement infrastructure, bond transactions require an additional dimension in terms of custodians and central securities depositories, which can be provided by central banks either directly or indirectly.

Fortunately, most central banks in Asia function as government bond securities depositories and settlement institutions anyway, as summarized in Table 2.[33] Since expanding the bilateral trade payment settlement system regionally requires linkages between central banks, adding a government bond settlement system with securities depositories will not cost a large amount of new fixed investment. Yet it will promote additional business and expedite the internationalization of currencies. Once this model has generated sufficient business, it can be privatized later as the RSI and expanded for other securities such as corporate bonds or equity depository and settlement.

Table 2: Clearing and Settlement Institutions for Government Bonds in Asia

Economy	Clearing	Securities Settlement	Deposits	Payment Settlement
Australia	Austraclear	Austraclear	Austraclear	RBA
New Zealand	NZClear	NZClear	NZCSD	RBNZ
Hong Kong, China	CMU	CMU	CMU	HKMA
Indonesia	KPEI	BI-SSSS	BI-SSSS	BI
Malaysia	SSDS	SSDS	SSDS	BNM
Thailand	BOT	TSD	TSD	BOT
Philippines	BTr	BTr	BTr	BSP
Japan	JGBCC	BOJ	BOJ	BOJ
Republic of Korea	KRX	KSD	KSD	BOK
PRC	CGSDTC	CGSDTC	CGSDTC	
Taipei,China	CBC	TSCD	TSCD	CBC
Singapore	MAS	MAS	CDP	
India	CCIL	RBI	RBI	NDS/SSS
Pakistan	The State Bank of Pakistan			

BI = Bank Indonesia, BNM = Bank Negara Malaysia, BOJ = Bank of Japan, BOK = Bank of Korea, BOT = Bank of Thailand, BSP = Bangko Sentral ng Pilipinas, BTr = Bureau of the Treasury, CBC = Central Bank of China, CCIL = Clearing Corporation of India Limited, CDP = Central Depository Pte Ltd, CGSDTC = China Government Securities Depository Trust and Clearing Co. Ltd, CMU = Central Moneymarkets Unit, HKMA = Hong Kong Monetary Authority, JGBCC = Japan Government Bond Clearing Corporation; KPEI = PT Kliring Penjaminan Efek Indonesia (Securities Underwriting Clearing Indonesia), KRX = Korea Exchange, KSD = Korea Securities Depository, MAS = Monetary Authority of Singapore, NDS/SSS = Negotiated Dealing System/Securities Settlement System, NSDL = National Securities Depository Limited, NZCSD = New Zealand Central Securities Depository Limited, PRC = People's Republic of China, RBA = Reserve Bank of Australia, RBNZ = Reserve Bank of New Zealand, SSDS = Scripless Securities Depository System, SSSS = Scripless Securities Settlement System, TSCD = [Taipei,China] Securities Central Depository Co., Ltd., TSD = Thailand Securities Depository.

Sources: BIS (2011, 2012), EMEAP (2012).

[33] Starting with a government bond settlement scheme makes sense from business feasibility perspectives, too. After the launch of ABMI, there has been significant progress in the development of government bond markets in the region, but less so in corporate bonds. At the start of 2003, the value of outstanding government bonds in developing Asia was only US$711 billion, and corporate bonds US$456 billion. By June 2013, the size of outstanding government bonds had risen more than six times, but that of corporate bonds by just over five times.

Although not entirely comparable, with respect to financial feasibility the experience of Euroclear and Clearstream in intermediating stateless Eurobond issuances beginning in the late 1960s[34] indicates that defragmenting clearing and settlement of securities presents a high-potential business.[35, 36] Moreover, it was also seen in the case of Eurobonds that the existence of a centralized interface for multiple issuances available in multiple markets lowered the cost of intermediation, and thus encouraged greater transaction volume.

However, if the securities settlement system in the eurozone is any indication, integrating securities infrastructure may take much more time. In 2006, the TARGET2–Securities (T2S) project was introduced to integrate euro securities infrastructure, but progress has not been as fast as with TARGET2. The T2S aims to provide a single pan-European platform for securities settlement in central bank money at low cost. Just like TARGET2, uniform rules, standards, and tariffs will apply to all transactions in all T2S markets when it begins operation in June 2015.

In any case, a combined trade settlement and securities settlement system would create various synergies across the financial market. First, government bonds deposited in central banks could be used as collateral which could efficiently reduce risks in trade and non-trade related cross-border securities transactions. Indeed, the system in Europe also provides collateral management services, in which eligible counterparties mobilize collateral for use in credit operations. But one of the most important benefits of this joint payments and securities settlement infrastructure is to alleviate "the third time zone" problem (Park and Rhee 2006).

Due to the lack of an Asian securities settlement system, Asian investors lose liquidity or pay more transaction costs even though they can settle their payment transactions with each other in the same time zone. Currently, when Asian investors trade securities with each other, payment transactions can be made instantly or nearly instantly as the business hours of most central banks in Asia are in a similar time zone. But securities

[34] In July 1963, the very first Eurobond issuance by the Italian firm Autostrade was offered to European investors and it was received warmly with strong participation from the "Belgian Dentist" (a collective term that refers to European investors who finally managed to set aside some savings during post-war reconstruction). One factor considered in the Autostrade issuance is the size of the offshore dollar pool that European countries had accumulated since the late 1800s. Another factor that resulted in essentially the second expansionary phase of the offshore dollar bond market was the levy slapped by the US government on bond issuance of foreign companies in the US, i.e., the interest equalization tax (IET) imposed in July 1963. US authorities at that time were worried about the strain on the US balance of payments position brought about by its war spending on the Korean and the Viet Nam wars. The IET, which was approved by Congress the following year with retroactive effect from the President's announcement, imposed a 15% tax on the cost of foreign shares bought by US citizens and a graduated tax on foreign bonds of between 2.75% for those with a maturity of less than 3.5 years and 15% on long-dated bonds (Norman 2007).

[35] A pilot securities settlement scheme, spearheaded by US banking giant Morgan Guaranty Trust Company (MGTC) and launched on 21 July 1967, largely as a response to the burgeoning Eurobond market, facilitated the establishment of European international central securities depositories (ICSDs). Euro-clear (hyphen dropped in 1989) was launched by MGTC on 2 December 1968. It is the first ICSD to break ground with a client list comprised of more than 50 banks and dealers at its start. In 1 year its client base increased to 150. Euro-clear quickly made a hefty fortune—both from the value of services and from their investments funded by the huge deposits in the cash accounts of their clients. Much of the business is anchored on the market's appreciation of the delivery versus payment capability of the infrastructure. The establishment of Euro-clear also prevented the Eurobond market from seizing up. But at this early stage, a sense of the necessity to break away from the flagship US bank Morgan Guaranty, whether because of technical or political reasons, was already budding.

[36] On 28 September 1970, Centrale de Livraison de Valeurs Mobilières (Cedel), a company which is co-owned by 71 banks from 11 countries was inaugurated. It had an initial capital of US$1.15 million. Cedel was later bought by Deutsche Börse Clearing and is presently known as Clearstream.

settlement has to wait until the settlement hours in the US or Europe as most of the international securities are deposited in Europe and US with time zones quite different from Asia. By having payment and settlement systems in the same Asian time zone, this third time zone problem could be solved.

To illustrate the third time zone problem, consider the settlement process of an Asian bond that is denominated in Hong Kong dollars. Hong Kong, China is 7 hours ahead of Brussels, where Euroclear is located. Assume that the settlement date of the bond is 2 October in Brussels. In order to finalize the settlement by that date, Euroclear currently mandates that a buyer and a seller deposit money and security in a common depository of Euroclear in Hong Kong, China—HSBC bank—by 1 October, which is a day before the settlement date. After getting notification from HSBC overnight, Euroclear Bank in Brussels completes the security settlement by 9 a.m. on 2 October (4 p.m. in Hong Kong, China), after which the seller in Hong Kong, China can withdraw Hong Kong dollars, and the settlement could be finished by 2 October.

Instead of depositing money and securities a day before the settlement date, if the buyer and seller want to settle securities by using the RTGS system on 2 October Belgium time, the seller may not be able to withdraw money by 2 October. For example, by the time the RTGS settlement is completed by 3 p.m. on 2 October, it is already 10 p.m. in Hong Kong, China and the bond seller would have to wait until the next day to withdraw his/her money. This is one reason why Euroclear mandates that traders deposit money and securities a day in advance of settling bonds that are denominated in Asian currencies. Otherwise, it cannot secure a settlement date.

If bonds are denominated in European currencies or US dollar, security and payment settlement could be completed on the same day through the RTGS system as the time difference between Europe and the Americas works in favor of the security settlement and payment settlement. The third time zone problem implies that investors have to bear the extra cost of losing liquidity for a day when trading Asian currency-denominated bonds. If there is a regional securities depository within Asia, investors would not face this extra cost. The benefit of solving the third time zone problem could be significant considering that major investors for Asian currency-denominated bonds are institutional investors located in Asia.

In addition to the time difference problem, establishing a combined trade and government bond settlement system through the cooperation of Asian central banks could be a catalyst for the gradual opening of domestic markets and regulatory harmonization across the region. Existing international central securities depositories (ICSDs) such as Euroclear and Clearstream are private entities, and it would be hard for Asian governments to provide incentives to ease regulations to increase business flows for them unless doing so would benefit their national interests. On the other hand, the central banks' network of trade and government bond settlement systems would encourage them to discuss greater financial policy coordination among Asian governments. It would also promote government bond market dealers, custodians, pricing agencies, which are all necessary infrastructure for the development for a full-fledged local currency capital market in Asia.

4. RELATIONS WITH OTHER INITIATIVES

4.1 Background

Over the years, several initiatives were created to build infrastructure for local bond markets on the back of calls for greater regional integration. The idea to establish a

regional currency denominated bond market and a regional central securities depository (CSD) was first put forward in the early 1990s. However, as described by Oh et al. (2003), the early initiatives advocating such propositions were "merely talk without action." Factors that were cited for non-action of most stakeholders include reluctance to liberalize local capital markets and the absence of the requisite institutions.

Following their debilitating experience during the 1997 Asian financial crisis, most Asian countries focused on strengthening their balance of payments positions and started piling up foreign exchange reserves. The rising reserves impelled national authorities to renew discussions concerning regional bond market development to recycle their savings within the region and simultaneously reduce their foreign currency exposure. One of the major movements spearheading the creation of the regional bond market infrastructure is the ABMI. The planning stage of ABMI began in November 2002 before it was formally launched during the ASEAN+3 Finance Ministers Meeting in Manila in August 2003. ABMI came after the Chiang Mai Initiative was formalized in May 2000, also by the ASEAN+3 group, and was later complemented by the Executives' Meeting of East Asia Pacific Central Banks[37] with the launch of the Asia Bond Fund initiative in June 2003 and the Asia Bond Fund 2 initiative in December 2004.[38]

4.2 ABMI and RSI[39]

Under ABMI, ASEAN+3 initially launched six working groups to study various aspects of regional bond markets including securitization, regional credit rating agencies, regional clearing and settlement systems, and regional credit guarantee agencies. Regarding the clearing and settlement infrastructure component of ABMI, two studies were undertaken to examine the relevant factors and dimensions. The first of these studies is the "Bond Market Settlements and Emerging Linkages among Selected ASEAN+3 Countries" report, published in 2005. Essentially, the paper pointed out that over-the-counter securities trading in many Asian countries mostly utilizes central bank-operated settlement systems that are not linked with a clearing company or a central counterparty. While European ICSDs extended linkages to some economies in Asia for cross-border issuances, the differences in settlement cycles and time zones naturally bring with them inefficiency costs and risks. The study, however, noted that as in the cases of Clearstream and Euroclear, it may take some time before such regional settlement infrastructure has fully developed. Instead, in the interim, it proposed to focus on improvements in fundamental matters such as individual markets' compliance with international standards to have better links with the global settlement system, especially in terms of legal certainty, delivery versus payment facility, etc.

The follow-up study titled "Minimizing Foreign Exchange Settlement Risk in ASEAN+3 Region," released in 2007, is the second research cycle on bond market infrastructure under ABMI. It assessed the settlement costs and risks accompanying the settlement systems in the region in greater detail. It proposed to establish the RSI and suggested

[37] The Executives' Meeting of East Asia Pacific Central Banks is composed of the Reserve Bank of Australia, the People's Bank of China, the Hong Kong Monetary Authority, Bank Indonesia, the Bank of Japan, the Bank of Korea, Bank Negara Malaysia, the Reserve Bank of New Zealand, Bangko Sentral ng Pilipinas, the Monetary Authority of Singapore, and the Bank of Thailand.

[38] The primary goal of Asia Bond Fund and Asia Bond Fund 2 is to boost the demand for local currency bonds (Hyun and Jang 2008).

[39] This subsection draws heavily from Park and Rhee (2006).

its possible architecture. As one of the rationales for establishing the RSI, the paper addressed how the lack of regional infrastructure can exacerbate the foreign exchange settlement risks—the "third time zone" problem—as explained in the previous section. The suggested types of RSI architecture include the Asia ICSD model, the Pan-Asia CSD model, the Asian Payment Bank model, and the CSD Linkage option.[40]

Building on the findings of the two aforementioned studies, the ABMI Group of Experts (GoE) with representation from ASEAN+3 members was formed in April 2008 to evaluate the financial and legal viability of designs of the Asian RSI previously proposed. In the GoE report, only the Asian ICSD model and the CSD linkage model were assessed in terms of operational and legal feasibility for reasons of "practicality." In a nutshell, the report is geared toward supporting the creation of an Asian ICSD model over the CSD linkage model, but it clearly pointed out daunting and bigger tasks of trimming down legal and regulatory barriers in most Asian economies for the Asian ICSD model than for the CSD linkage model.

Needless to say, the proposal put forward in this paper to build bilateral trade and government bond settlement infrastructure is closer to, or a sub-set of, the CSD linkage model. Theoretically, creating a multilateral RSI would be the first best option as pointed out by the GoE report. However, the observation of the GoE report that regulatory controls and legal barriers need to be trimmed down significantly for the RSI to take form does not seem to bode well currently with a number of sovereign monetary authorities—particularly after the global financial crisis. That is why although RSI is arguably the best option to remedy the infrastructure limitations in the region, perhaps it would be more pragmatic to just harness the current trade settlement scheme between Hong Kong, China and the PRC and extend its coverage to government bonds, as mentioned in the previous section. Financial viability may be a concern too in the short term in building regional settlement infrastructure. Euroclear and Clearstream also did not make money at first. Similar to Asia's growth story, infrastructure was built first to attract private investors. The same logic should apply to the development of regional capital markets in Asia.

4.3 ASEAN+3 Local Currency Trading System

The push for a more extensive cross-border local currency-based trading system has been further boosted following the conclusion of the 15th ASEAN+3 Finance Ministers and Central Bank Governors' Meeting in Manila on 3 May 2012. Recognizing the need to advance the agenda of regional financial integration to a higher level, the caucus has called for ABMI to undertake further study on the use of local currencies for regional trade settlement, and put forward concrete policy recommendations. Such an endorsement shows the political will of ASEAN+3 members to reduce the region's heavy reliance on the US dollar for trade settlement. The proposal set forth in this paper—combining the expanded trade settlement scheme with a government bond

[40] The Asian ICSD model proposes a similar platform to the European ICSDs (e.g., Clearstream and Euroclear) with direct linkages to local central securities depositories (CSDs) as well as to the other ICSDs. The Pan-Asian CSD model indicates that a regional depository for ASEAN+3 debt securities shall be established—the Pan Asian CSD, where all national CSDs could be sub-depositories. A link between the Pan-Asian CSD and other ICSDs will be created while settlement will be in central bank money. The Asian Payment Bank model proposes to have a multilateral payments bank supported by Asian countries. It envisions having a payment vs. payment linkage to the national payments systems and the Continuous Link Settlement (CLS) Bank in Europe while final settlement will be based on the Asian time zone. Finally, the CSD linkage model suggests that instead of creating a central body, it would be easier to just link the national CSDs patterned after the Link Up Markets initiative that was originally participated in by seven European CSDs.

payment and settlement scheme—could be one option to achieve this end. So far, Asian policymakers have continued to complain about rising financial vulnerabilities of their economies resulting from greater interconnectedness of the global economy. To help the region reduce the risks from these vulnerabilities without requiring substantial start-up costs, authorities should show strong political will in establishing central banks' linkages for trade and government bond settlement.

4.4 Bilateral Swaps and Regional Financial Safety Nets

As part of regional safety nets, many Asian economies are entering into bilateral swap agreements with other countries to guard against liquidity crises. Indeed, it is ironic that during the 2008 global financial crisis, which started from the financial crisis in the US, it was its currency swap with the US Federal Reserve that helped the Republic of Korea overcome its liquidity constraints. Although bilateral swaps of Asian central banks with the US Federal Reserve have been valuable in mitigating the impacts of past financial crises, it is simply not politically sustainable, and these swaps are not provided on a regular basis. Hence, it is vital for Asian economies to expand intra-regional swap lines to strengthen the regional insurance mechanism and increase their capabilities to appropriately address crisis scenarios in the future. The PRC, for example, had 21 active local currency bilateral swap agreements as of October 2013, with a total size of about CNY2.5 trillion.

Another safety net is the Chiang Mai Initiative. It was introduced in 2000 as a series of bilateral swap agreements to manage the region's short-term liquidity problems. In 2007, the ASEAN+3 members agreed to improve it and turn it into a multilateral agreement, the Chiang Mai Initiative Multilateralization (CMIM). When the global financial crisis erupted in 2008, the massive contraction in global liquidity underscored the urgent need to strengthen the CMIM as a regional financial safety net and the total fund has recently been doubled to $240 billion. The IMF de-linked portion was also increased, to 30% in 2012, and targeted to be further raised to 40% in 2014. Following the IMF's crisis-prevention tool kits, a crisis prevention facility called the CMIM Precautionary Line was introduced as well.

While ASEAN+3 countries have made significant progress in building these bilateral and multilateral safety nets, much more still needs to be done. In particular, the committed funds under CMIM continue to remain in each individual country's coffer, and the mechanism for funds disbursement remains unclear. In addition, a well-functioning independent surveillance unit needs to be put in place to monitor and assess the vulnerability of each country so that remedial action can be implemented swiftly. This task has been assigned to the ASEAN+3 Macroeconomic Research Office (AMRO), with inputs from each country's central bank. However, building AMRO's surveillance capacity will take a lot of time and effort.

The IMF conditionality connection is a disincentive for countries in securing assistance. There is a need to design programs in such a way that it reduces the stigma effect of obtaining CMIM funds. Several ideas have been put forward to address this stigma effect, including simultaneous offering of programs to a group of countries with similar macroeconomic indicators, rather than to just a single country, and setting pre-qualification criteria for program eligibility. One could consider implementing a clear, rules-based, and automated pre-qualification process via a set of transparent "Maastricht-like" criteria, and having offers of liquidity extended simultaneously to all qualified countries, which could possibly reduce the stigma effect.

The existence of bilateral and regional safety nets does not make the proposed trade and securities settlement system unnecessary. The latter is a mechanism to reduce US

dollar dependence. The former is an insurance mechanism. The existing bilateral and regional safety net mechanisms can supplement the proposed combined trade and government bond settlement system. For example, CMIM funds may be used as credit guarantee for the trade settlement transactions of countries with lower credit ratings to expedite the bilateral linkages among Asian central banks.

5. CONCLUSION

The global financial crisis has once again stimulated discussion about reform of the international financial architecture. In this paper, we argue that establishment of regional settlement currencies can contribute positively to this reform agenda. In particular, extending the local currency trade settlement schemes such as the RMB trade settlement scheme between the PRC and Hong Kong, China to the rest of Asia, and combining it with a government securities payment and settlement scheme, can be a practical solution.

The proposal is based on the idea that building proper infrastructure first can make a big difference. Bilateral transactions between non-US dollar currencies are less common since adequate infrastructure has not been built. With proper infrastructure, these transactions could be facilitated and costs could be significantly reduced. Proper infrastructure could also bring new demand for business. The role of Asian governments in helping to put this proposal into practice is extremely important. As Eichengreen (2011) noted, in the early 20th century US policymakers undertook domestic financial reforms to encourage the internationalization of the US dollar. Part of these reforms is the establishment of the Federal Reserve System and building infrastructure for overseas US dollar transactions, which was influenced by pressure from domestic financial firms seeking denomination rents and exporters seeking to reduce transaction costs (Broz 1997). Without this effort to build new infrastructure, the US dollar would not have been able to dethrone the UK pound sterling as the key international currency. The legal framework that established the Eurosystem also facilitated the links among eurozone central banks that enabled euro settlement.

Asian policymakers could follow this path. Building proper settlement infrastructure should be the first step. This strategy is consistent with the Asian development experience in the last half century—which underlines the importance of building infrastructure—and it could be a practical way of reducing US dollar dependence without the risks associated with rapid capital market opening. It would also contribute to capital market development in Asia.

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