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Changyong Rhee and Lea Sumulong

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ABSTRACT

The squeeze in US dollar liquidity that emerged with the global financial crisis highlighted the risks associated with 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 expands further, its dependence on the US dollar is bound to increase, raising even more 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 and Hong Kong, China, the existence of appropriate financial infrastructure could reduce the relatively larger costs of bilateral currency transactions compared with triangular transactions through the US dollar. As most central banks are securities depositories of government bonds, combining trade settlement with government bond securities settlement can also have large synergy effects without much 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.

Keywords: global financial crisis, international monetary system, renminbi internationalization, renminbi trade settlement, government bond payment and settlement

JEL Classification: F33, F34, F42

I. 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 thus being discussed more widely, not only in academia, but also in political circles.

The Group of 20 (G20), for example, has reached broad agreement to reduce persistently large current account imbalances by adopting indicative guidelines for assessing country performance (G20 2010; G20 2011a). New perspectives on the role of capital controls against speculators are also now emerging (G20 2011b, Ostry et al. 2010, Ostry et al. 2011, Ostry 2012). Indeed, past aversion to capital controls has seemingly been replaced with a new appreciation of its contribution to economic policy as a tool for financial stability (Gallagher, Griffith-Jones, and Ocampo 2011; Jeanne, Subramanian, and Williamson 2012). In terms of ensuring global liquidity, there have been some developments as well. The International Monetary Fund's (IMF's) crisis-prevention toolkit has been enhanced by improving the flexible credit line and establishing the precautionary credit line (IMF 2010). In Asia, the Chiang Mai Initiative Multilateralization (CMIM) was bolstered with additional resources and a precautionary line as well (ASEAN Secretariat 2012). These are welcome advancements, considering that these very same issues were raised after the 1997–1998 Asian financial crisis, but were largely ignored.

In terms of reforming the international financial architecture, however, in particular veering away from the current single currency system, not much progress has been achieved. This issue is in fact a revival of an old one, which centered on debates in the 1960s about “exorbitant privilege” (Eichengreen 2011).¹ As Jacques Rueff (1971), former advisor to French President Charles de Gaulle, once famously said, a country with an international reserve currency can have a “deficit without tears,”—it could avoid the burden of adjustment by printing more money (Gourinchas and Rey 2007, United Nations 2009, Zhou 2009, Kenen 2010).

Even though this challenge against the single currency system was raised again recently, the global economy's dependence on the US dollar ironically became even stronger. Since its establishment in 1999, the euro slowly gained ground as an international reserve currency. But with the protracted crisis in the euro zone, the status of the euro began to waver. So, while the single currency issue has been raised over and over again, the situation inevitably returns to the reality of US dollar dominance.

However, the heavy reliance on the US dollar is an all too important issue for Asia to be satisfied with the status quo. Asia already suffered from two debilitating crises—in 1997 and 2008. These two episodes revealed structural problems in the region's economies: heavy reliance on trade; and high growth that requires high investment and foreign borrowing. This puts Asia's external position at risk, especially as regards volatility of foreign capital. The 2008 crisis taught regional policy makers that vulnerabilities persist irrespective of strong internal fundamental conditions. Despite the fact that the crisis originated from the west, the US dollar-

¹ “Exorbitant privilege” is a term coined by the 1960s French finance minister Valéry Giscard d'Estaing in describing the enormous benefit that accrues to the US from the status of the US dollar as reserve currency.

dependent structure of their economies caused Asia to suffer first when western banks withdrew their money and fled emerging markets (Lee and Rhee 2012).

As Asia's economic power further increases in the future, this vulnerability will not dissipate. In fact, Asia's growing economic ties within the region and with the rest of the world implies that it will increase its exposure and become even more dependent on international currencies. Several solutions have been proposed, but none seem satisfactory.

One proposal is to build a global safety net.² However, while such would help, it will not solve the problem. Despite significant efforts by the IMF, it is manifest that the size of available resources will not be enough. The stigma effect is also a constraint to the effectiveness of the IMF crisis-prevention toolkit and as such, countries are likely to continue to accumulate foreign exchange reserves. However, we know that this is not good for the global economy as it contributes to 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 will take some time before the SDR can be widely used in private markets. Also, under existing conditions, high transaction costs between non-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 can replace the role of the US dollar as global reserve currency in the near future.

In this paper, we argue that establishing regional settlement currencies can be an interim solution. It can actually make a practical contribution to the IMS reform agenda. By establishing regional settlement currencies, we do not mean that some Asian currencies will become international reserve currencies over a short period of time. What we mean is the gradual promotion of the use of Asian currencies for regional trade and investment by providing proper infrastructure, even before they become reserve currencies with full convertibility.

The best example is the renminbi (RMB) trade settlement scheme between the People's Republic of China (PRC) and Hong Kong, China. 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 encourage RMB recycling, would result in larger cross-border RMB flows and in the stock of RMB held by nonresidents (Yu 2012b).

² The IMF defines global financial safety set 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" (<http://www.imsreform.org/safety.html>).

Indeed, the value of RMB trade settlement transactions has massively increased, from just RMB3.6 billion in the second half of 2009 to nearly RMB1.3 trillion in the first half of 2012 (PBoC 2011, 2012b). Non-trade transactions have also risen tremendously. RMB deposits swelled from RMB62.7 billion at end-2009 to RMB545.7 billion by end-September 2012 (HKMA 2012b). According to Bloomberg data, RMB-denominated bond issuance has grown from only RMB10 billion in 2007 to RMB221.4 billion as of the third quarter of 2012.³

This rapid expansion demonstrates that the issue about 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 market’s choice, the emergence of regional currencies as a 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 less incentive to hold RMB deposits in Hong Kong, China if depositors could not 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 faster if a securities settlement system was not 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.

We thus propose in this paper to promote more bilateral trade settlement systems or a multilateral trade settlement system in Asia and have it coupled with a government securities settlement scheme. As most central banks are securities depositories of government bonds, combining trade settlement with government securities settlement can have large synergy effects without much extra costs. It will also help to promote the development of local currency bond markets in Asia, as envisioned by the ASEAN+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 II looks at the existing RMB trade settlement scheme between the PRC and Hong Kong, China, focusing on the system, progress, impacts on the offshore RMB market, and prospects. Section III presents a proposal to expand the current bilateral system to other countries and deepen the scheme by combining the trade

³ 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).

settlement system with government bond settlement systems. We argue that such a system will solve the “third time zone problem” and help develop financial markets in Asia. Section IV discusses the relationship of this proposal with other regional initiatives such as the ABMI, in particular, the issue of building a Regional Settlement Intermediary (RSI) and strengthening the regional financial safety net. Section V concludes.

II. THE RMB TRADE SETTLEMENT SYSTEM

A. 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 between the PRC and Hong Kong, China, marking a significant milestone in the development of the RMB business in Hong Kong, China.⁴ 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. In addition, Ma, Liu, and Miao (2012) identify 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 (i.e., Shanghai, Guangzhou, Shenzhen, Dongguan, and Zhuhai) and selected partners (i.e., Hong Kong, China; Macau, China; and ASEAN⁵ members).

To gain eligibility, enterprises in the PRC need 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 Macau, 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 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; Macau, 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. The list of PRC enterprises eligible for the scheme was also increased.

⁴ It was first introduced in April 2009 while the memorandum of understanding between PBoC and the Hong Kong Monetary Authority (HKMA) was signed in June 2009.

⁵ Brunei Darussalam, Cambodia, Indonesia, the Lao People’s Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam.

A further expansion of the RMB trade settlement scheme was implemented in August 2011, with the coverage now extended nationwide. In addition, RMB-denominated foreign direct investment (FDI) and portfolio investment have been allowed from Hong Kong, China to the PRC. In particular, enterprises in Hong Kong, China were permitted to use offshore RMB proceeds for onshore FDI in October 2011 subject to certain restrictions.⁶ Qualified foreign institutional investors, using offshore RMB, were likewise allowed to invest in PRC stock markets in December 2011 but inflows were initially capped at RMB 20 billion and later raised to RMB 70 billion in April 2012 (de Silva and Tan 2012).

The introduction of the RMB trade settlement pilot scheme and its subsequent expansion has encouraged the establishment of an offshore RMB market in Hong Kong, China. While the original intent of the pilot scheme was for trade settlement, the legal, regulatory, and financial infrastructure also significantly encouraged non-trade related financial transactions in Hong Kong, China. Offshore transactions of the RMB however, are distinct and separate from onshore transactions (HSBC 2010).

First, there is the yuan (CNY), which pertains to the RMB unit used in onshore dealings. It is fully convertible on the current account, which means that its utilization is not curtailed in cross-border trading activities, remittance transactions, tourism receipts and payments, and other non-investment activities. But its use as a currency denomination of FDI, securities investment, equities investment, and other capital account items is heavily regulated. Capital inflows to the PRC are subject to the rules of different investment programs such as the qualified foreign institutional investor (QFII), offshore RMB QFII (RQFII), and qualified domestic institutional investor (QDII) schemes. The PBoC also exercises a proactive supervision of the CNY's value.

Second is the CNH, which refers to the RMB currency used in offshore markets, mainly Hong Kong, China. It is the first form of a deliverable RMB outside the PRC made possible by an agreement between the Hong Kong Monetary Authority (HKMA) and PBoC formalized on 19 July 2010. Unlike CNY, CNH's spot and forward rates have very minimal utilization restrictions, may it be in commodity and services trading, cash remittance, or portfolio investment. Its value is therefore heavily dependent on market forces. The rationale behind this is for CNH to develop internationalized currency qualities. Authorities may only influence the CNH exchange rates either through the RMB swap lines or PRC regulations concerning RMB flows from onshore to offshore (Hui and Bunning 2010).

Third is the CNY–NDF, which is the forward rate of RMB anchored on the CNY market but settled in US dollar. Prior to the establishment of the CNH, CNY–NDF is the traditional offshore RMB unit with capital controls firmly in place. PRC enterprises are not allowed to take part in the CNY–NDF market and the unit's value is mainly driven by offshore market expectations of the CNY movement (or essentially, the offshore market's take of the PBoC's short term exchange rate policy inclinations). Participation in the CNY–NDF market is to a certain extent an exercise of unrestricted determination of the future value of the onshore RMB whose movement is heavily controlled. Nevertheless, considering the relative sizes of the CNY

⁶ RMB FDI application valued at least RMB 300 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. But 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 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 Circular 2011-889 and HSBC 2011. "RMB FDI formalization: A structural boost for CNH market." 14 October).

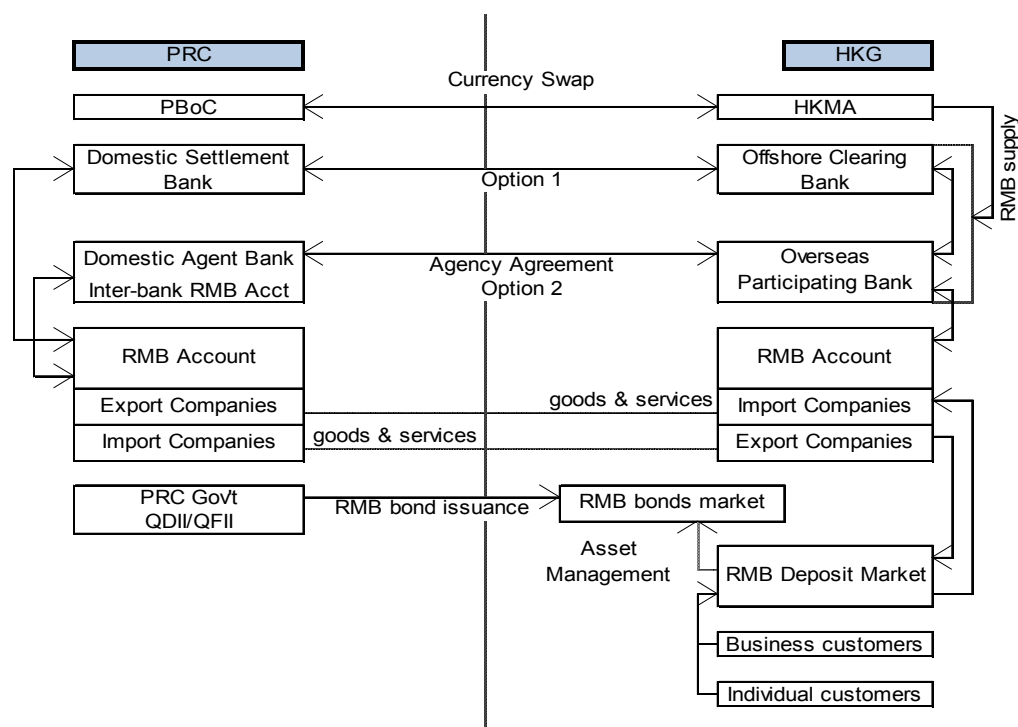
and CNH markets, CNY–NDF remains the most feasible option for external entities seeking large positions at present. It is however conceivable that the CNH may replace NDF should the current initiatives to develop and promote the use of the currency progress steadily.

Lastly is the CNT,⁷ which refers to the RMB used in settling trade. Since cross-border trade transactions are settled onshore, deals are ought to be denominated in CNY. And the CNY unit specially used to complete cross-border trade payments is called CNT (or CNY for trade). Thus, CNT also takes the spot rate of CNY. CNT's forward curve, however, is different from CNY's. This is because offshore businesses are allowed to acquire and hold CNT, but not CNY (Hui and Bunning 2010, AHK Greater China 2011).

B. The Trade Settlement Framework

An overview of the RMB trade settlement scheme platform is provided in Figure 1. The system prescribes that participating enterprises have to be accredited by the PBoC and the HKMA in their respective jurisdictions.⁸ As mentioned earlier, 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 transaction between onshore and offshore parties has been agreed, there are two possible alternatives to make cross-border payments.

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



Source: Authors.

⁷ This is different from the CNT which is the currency code of the offshore deliverable RMB in Taipei, China, pursuant to the Memorandum on Currency Clearing Cooperation Across the Straits between the PRC and Taipei, China signed on 31 August 2012.

⁸ Macau Monetary Authority in the case of Macau, China.

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 then 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). Based on data as of end-2011, there are a total of 187 banks participating in the scheme from over 30 countries and 6 continents. HKMA also estimates that participating banks in Hong Kong, China alone handle over 900 RMB correspondent accounts (HKMA 2012a).

On the other hand, the Bank of China Hong Kong (BoCHK) was designated as the sole offshore clearing bank.⁹ Essentially, the BoCHK is 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 PBoC.¹⁰ 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 RMB400 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. Thus, the aversion to conduct trade business in RMB, which was previously strongly underpinned by difficulties due to convertibility, has significantly reversed in recent years. Increases in RMB trade transactions resulting from the pilot scheme have instigated a tremendous growth in offshore RMB deposits, which in turn fed the development of the offshore RMB bond and asset management market.

C. The Ensuing Results of the RMB 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 soared to over 67,000 by the end of 2011 (AHK Greater China 2011). Monthly cross-border RMB trade settlements (RTS) rose from an average of RMB 42 billion in 2010 to RMB 228 billion as of September 2012, while

⁹ The Clearing Agreement Between the People's Bank of China and Bank of China (Hong Kong) Limited in Relation to Renminbi Business was signed in July 2009.

¹⁰ Administrative Rules for the Pilot Scheme for Settlement of Cross-border Trade in RMB.

RTS share to total PRC trade with the world has more than quadrupled from 2.5% to 11.4% (Table 1). In terms of PRC's trade with Hong Kong, China, RTS accounted for just 32.5% in 2010. By 2011, however, the share has exceeded 100%, implying that some of the PRC's trade with other countries has also been settled in RMB that was cleared through Hong Kong, China. Indeed, the Gulf Cooperation Countries; Singapore; Taipei, China; and the Republic of Korea have recently shown a strong uptake in the use of RMB for trade payments (Swift 2012).

Table 1: Cross-border RMB Trade Settlement

Period	Total RTS, RMB billion	Total RTS, Monthly Average, RMB billion	Total RTS, % of PRC Trade with the World	Total RTS, % of PRC Trade with Hong Kong, China
Jul–Dec 2009	3.6	0.6	0.0	0.5
Jan–Dec 2010	506.3	42.2	2.5	32.5
Jan–Dec 2011	2,080.0	173.3	8.8	113.6
Jan–Sep 2012	2,050.0	227.8	11.4	136.6

PRC = People's Republic of China; RMB = renminbi; RTS = RMB trade settlement.

Sources: CEIC, PBoC, and authors' calculations.

Initially, trade settlements have been largely import-oriented (i.e., RMB flows are 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-June 2012 it stood at 1:1.4 (PBoC 2012c).

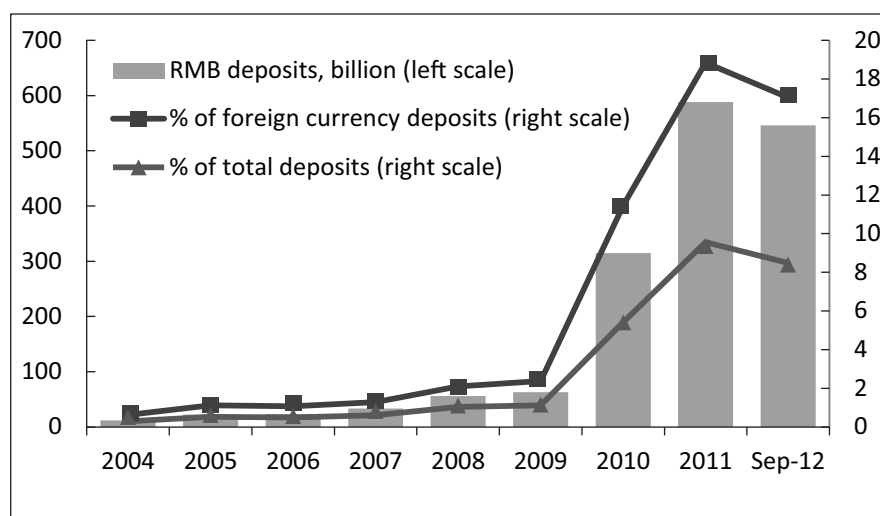
This trend is inevitably related to market expectations of RMB appreciation and arbitrage opportunities between the CNY and CNH markets. Zhang and Xu (2011) show that the RMB receipt-to-payment ratio is highly correlated with the CNH–CNY spread. But despite the recent narrowing of the CNH–CNY spread, the growth in RTS has remained robust. Cumulative RTS in the first three quarters of 2012 still grew year-on-year by 33%, 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 more than just due to currency speculations.¹¹

One immediate result of the expansion of RMB-based cross-border trade settlement is the swelling of RMB deposits in Hong Kong, 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 in Hong Kong, China. This expedites the growth of RMB-denominated financial products, which in turn increased RMB-denominated lending and borrowing to offshore investors who have no trade linkages with PRC corporations. As a result, from about RMB62.7 billion in end-2009, the total RMB deposit value in Hong Kong, China has ballooned to RMB545.7 billion as of end-September 2012

¹¹ He (2012) concludes that as 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 cyclicity of RMB exchange rate expectations.

(Figure 2). Overseas banks' RMB correspondent accounts increased more than five times in a span of 12 months—from 187 in 2010 to 968 the following year. RMB amounts due to and from overseas banks (banks based outside PRC and Hong Kong, China) rose considerably from RMB12.7 billion at the start of 2011 to RMB152.5 billion when the year closed. And the number of institutions authorized to conduct RMB business (deposit-taking, remittances, and cross-border trade settlement) in Hong Kong, China has spiked from 49 by the end of July 2009 (Sekine 2011) (right after the RMB trade settlement scheme was put in place) to 187 by end-2011 (KPMG 2012).

Figure 2: Outstanding RMB Deposits in Hong Kong, China



RMB=renminbi.

Source: HKMA Monthly Statistics.

The rapid expansion of RMB trade settlement in Hong Kong, China and the accompanying measures that recalibrated other capital flow policy regulations such as the circulars relaxing FDI^{12, 13} and equity investment regulations^{14, 15} have also bolstered the growth of the RMB offshore bond market (or the dim sum bond market). From only RMB10 billion in 2007—the year when the first dim sum bond was issued—RMB-denominated bond issuance in Hong Kong, China significantly increased to RMB189.3 billion in 2011 (RMB221.4 billion as of Q3 2012) (Figure 3).¹⁶ The number of bond issuances has likewise climbed steeply from just five in 2007 to 414 in 2011 and to 671 as of end-September 2012¹⁷ while the number of bond issuers increased from just three in 2007 to 107 by the end of 2011.

¹² Circular of the Ministry of Commerce on Issues Concerning Cross-border RMB Direct Investment, Shang Zi Han [2011] No. 889 – Effective 12 October 2011.

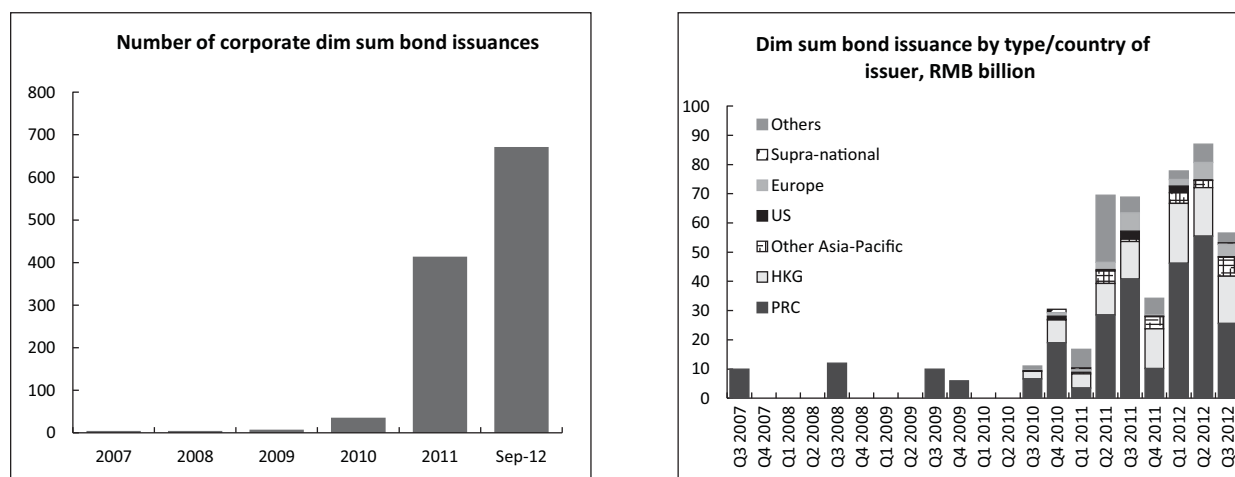
¹³ Administrative Rules on Settlement of RMB-denominated Foreign Direct Investment PBC Document No.23 [2011] 13 October 2011 – Effective 13 October 2011.

¹⁴ RQFII is governed by the Pilot Scheme for Domestic Securities Investment

¹⁵ Previously, a foreign company can only participate in the PRC's securities market via the Qualified Foreign Investment Institutions (QFII) program whereby the company can convert foreign currency to RMB to take part in the trading. CSRC has to approve the application while SAFE determines the allocation of quota.

¹⁶ 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, World Bank, and International Finance Corporation).

¹⁷ In May 2012 the National Development and Reform Committee has decided to allow non-financial corporations in the mainland to issue RMB bonds in Hong Kong, China (ANZ Research, 2012).

Figure 3. RMB Bond Issuance in Hong Kong, China

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

Source: Authors' calculations from Bloomberg data.

In addition, the offshore RMB capital market also saw sizeable corrections in key indices due to the gradual opening of the PRC's capital account. For instance, between March 2011 and October 2012, sovereign yield spreads (CNY–CNH) have narrowed from a range of 1.8 to 3.5 percentage points to less than half a percentage point. In the same period, deposit rate spreads (CNY–CNH) also swung from a positive margin of 2–3 percentage points to below zero. Similarly, the Hang Seng China AH Premium Index,¹⁸ which has been trading at a premium of over 100% favoring stock prices of PRC companies' A-shares at one point in 2008, has declined considerably starting mid-2010 (i.e., the prices of H-shares have caught up with the prices of A-shares and even exceeded the latter in some trading days).¹⁹ With the increase in offshore liquidity, RMB clearing transactions have also surged from RMB 39.3 billion in 2009 to RMB 22.7 trillion in 2011, depicting encouraging conditions for RMB businesses offshore.

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 businesses have flourished.²⁰

¹⁸ 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 (<http://www.hsi.com.hk/HSI-Net/HSI-Net>).

¹⁹ The index spiked briefly starting end-September 2011 when there were speculations about the Asia's ability to absorb external weakness but the differential in the stock prices quickly declined in the next 2–3 weeks.

²⁰ 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.

D. 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. High transaction costs between non-US dollar currencies are the prime reason for a 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 reduce transaction costs 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 a right approach in reforming the IMS. It is true that markets determine settlement currencies, not governments. 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 invested in cross-border financial infrastructure and if Asia continues not to invest in infrastructure, high transaction costs will not be overcome forever.

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 yen and the 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 NDF market can flourish and affect domestic monetary policy management and volatility in a similar way as the RMB trade settlement scheme can. The recent experience of the Korean won NDF market can be a good case. 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. Comparing 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 truer 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 are 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 promoted the wider use of the RMB. This investment opportunity would not have happened if a securities settlement system was not 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 was 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, so called “third time zone” problem, as will be discussed in the next section.

III. EXPANDING AND DEEPENING THE REGIONAL CURRENCY SETTLEMENT SYSTEM

A. Expansion of the Bilateral Trade Settlement System

Considering the initial success of the RMB trade settlement system, one can think of two options in further promoting RMB internationalization. One is to expedite capital market liberalization and allow more repatriation of RMB in Hong Kong, China to the PRC (Ma, Liu, and Miao 2012). An alternative approach would be expansion of the trade settlement scheme to neighboring economies. Unlike during the first phase of yen internationalization,²¹ both options are consistent with the apparent policy willingness of the PRC authorities to ride the tide this time to push RMB up the reserve currency ladder in the long run.²²

Currently, as the volume of offshore RMB deposits increase, there has been and will be more pressure from outside to allow the deregulation of capital markets through the repatriation of RMB in Hong Kong, China 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, the Republic of Korea, etc. This way, the PRC can continue with the 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 Hong Kong, China. 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. 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 currency will reduce developing Asia's

²¹ 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 commenced sometime in mid-1990s when the government's perception changed about the supposed international status of the yen but the market was no longer as willing as before 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).

²² Mallaby and Wethington (2011) discuss the political economy behind the unorthodox sequencing of RMB internationalization.

dependence on the US dollar, and contribute to the diversification of international settlement currencies. In fact, these agreements do not even have to be limited to Asian economies. Trade 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 been growing tremendously over the past three decades. In 1990, annual trade within developing Asia was only \$284.9 billion. By 2011, intra-Asian trade has risen to \$4,201.6 billion (or an average annual growth rate of 12.8%). 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 earlier, RMB cross-border trade settlement in the first nine months of 2012 exceeded 100% of PRC's trade with Hong Kong, China from just over 30% in 2010. 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.

In addition, data from the Hong Kong Interbank Clearing System suggest that RMB clearing transactions have expanded tremendously as well. When it started operations in 2006, monthly average transaction value was only RMB352 million. In the first 9 months of 2012, average RMB clearing transactions in Hong Kong, China reached RMB3,446 billion. This amount is more than 15 times the monthly average PRC trade settled in RMB due to the rapid rise in non-trade related RMB transactions. This factor of 15 demonstrates the tremendous potential of reducing US dollar usage in developing Asia through local currency intra-regional clearing transactions.²³

B. Combining Regional Trade and Government Bonds Settlement System

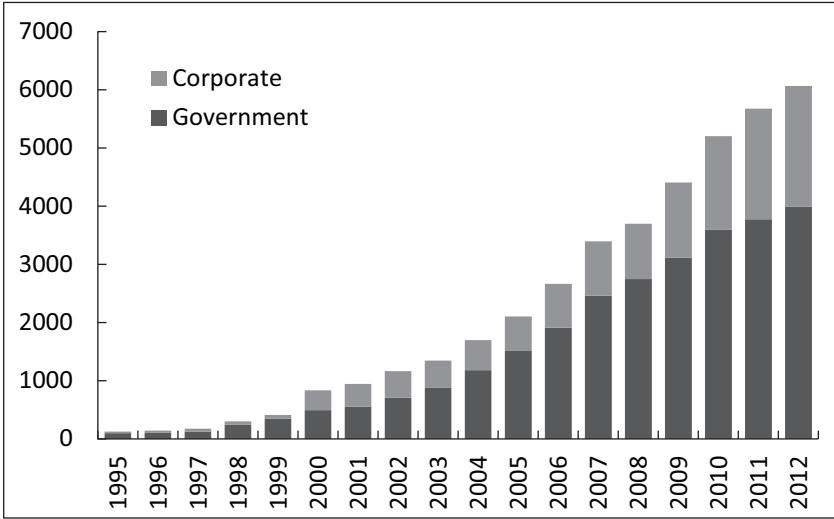
One lesson from the RMB trade settlement scheme experience of Hong Kong, China is that having an efficient payments and securities settlement system simultaneously could have strong synergies in promoting internationalization of regional currencies. As such, we propose to combine the regional trade payment settlement system with a government securities settlement scheme. It can be an effective way of hitting two birds with one stone—reducing US dollar dependence and promoting local currency denominated bond markets in Asia.

²³ To illustrate, if 100% of intra-regional trade transactions in developing Asia is settled in local currency, then US dollar usage could be reduced by over \$4 trillion per year. If local currency intra-regional clearing transactions could amount to 15 times of this value, this would run up to \$60 trillion per year, which is a significant improvement but still a small fraction of the over \$150 quadrillion annual (or \$590 billion a day) over-the-counter foreign exchange turnover in US dollars in the 10 Asian economies (i.e., 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 2010). As such, the proposal in this paper should be regarded as the first baby step toward regional settlement currencies.

After the Asian financial crisis in 1997, the ASEAN+3²⁴ 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 and, perhaps, 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 from abroad. The double mismatches refer to the currency mismatch and the maturity mismatch, and it is also considered one of the root causes of the 1997 Asian financial crisis.

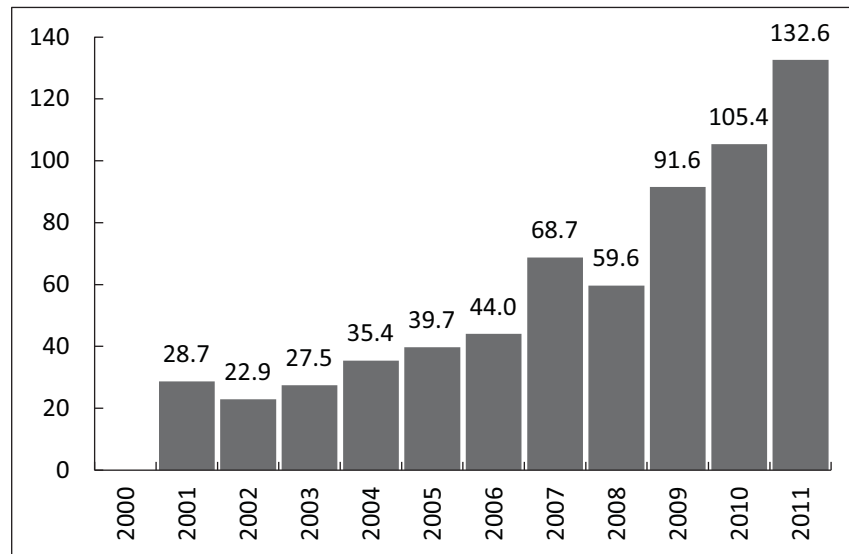
Indeed, supported by these policy initiatives, local currency bond market issuance in developing Asia has expanded rapidly since the Asian financial crisis. From only \$126 billion by the end of 1995, outstanding local currency bonds in Asia have ballooned to \$6,066 billion by end-September 2012 (Figure 4). While corporate bond issuance has likewise increased, government bonds still account for about 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. From \$28.7 billion in 2001, intra-ASEAN+3 cross-border holdings of debt securities now amount to \$132.6 billion at end-2011 (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. And we believe combining the regional trade payment settlement system with a government securities settlement scheme can make a good business case too.

Figure 4: Local Currency Bonds Outstanding in Asia, \$ billion



Source: AsianBondsOnline.

²⁴ Members of the Association of Southeast Asian Nations—Brunei Darussalam, Cambodia, Indonesia, the Lao People’s Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Viet Nam—plus Japan, the Republic of Korea, and the People’s Republic of China.

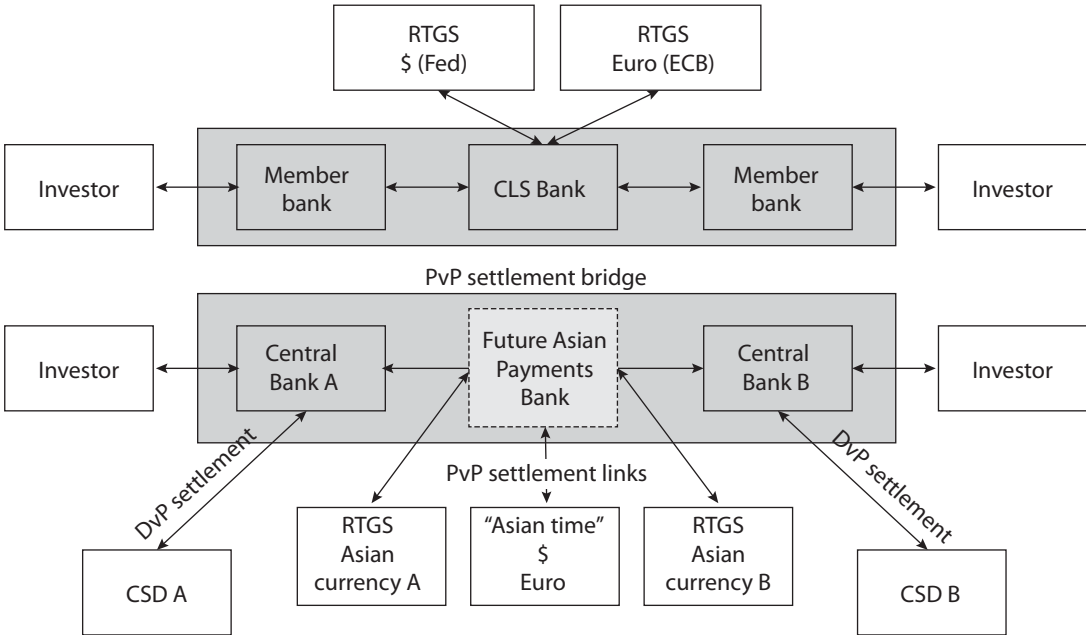
Figure 5: Intra-ASEAN+3 Cross-border Holdings of Debt Securities, \$ billion

Source: IMF Coordinated Portfolio Investment Survey.

In fact, as a part of the ASEAN+3 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. As such, the progress 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 the RSI in full scale with full capital market liberalization, it might be better to focus on a government bond trading and settlement system together with a trade-related payment settlement system. This proposal is illustrated 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.

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 transaction 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 on 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 2.²⁵ 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

Country	Clearing	Securities Settlement	Deposits	Payment Settlement
Australia	Austraclear	Austraclear	Austraclear	RBA
New Zealand	AustraclearNZ	AustraclearNZ	NZCSD	RBNZ
Hong Kong, China	CMU	CMU	CMU	
Indonesia	KPEI	KSEI	KSEI	Mandiri, Standard Chartered, ABN Amro
Malaysia		ADIs	ADIs	BNM
Thailand	BOT	BOT	BOT	BOT
Philippines	BTr	BTr	BTr	BSP
Japan	X	BOJ	BOJ	BOJ
Korea, Rep. of	X	KSD	KSD	BOK
China, People's Rep. of	CGSDTC	CGSDTC	CGSDTC	
Taipei, China	CBC	TSCD	TSCD	CBC
Singapore	MAS	MAS	CDP	
India	X	NSDL	NSDL	
Pakistan	The State Bank of Pakistan			

ADI = Authorized depository institution, 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, CDP = Central Depository Pte Ltd, CGSDTC = China Government Securities Depository Trust and Clearing Co. Ltd, CMU = Central Moneymarkets Unit, KPEI = PT Kliring Penjaminan Efek Indonesia (Securities Underwriting Clearing Indonesia), KSD = Korea Securities Depository, KSEI = PT Kustodian Sentral Efek Indonesia (Indonesian Central Securities Depository), MAS = Monetary Authority of Singapore, NSDL = National Securities Depository Limited, NZCSD = New Zealand Central Securities Depository, RBA = Reserve Bank of Australia, RBNZ = Reserve Bank of New Zealand, TSCD = Taiwan Securities Central Depository Co., Ltd.

Source: Oh et al. (2003).

Such a system will create various synergies across the financial market. First, government bonds deposited in central banks can be used as collateral which can efficiently reduce risks in trade and non-trade related cross-border securities transactions. But the most important benefit 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 during the same time zone since the business hours of most central banks in Asia are in a similar time zone. But securities settlement has to wait until the settlement hours in the US or Europe as most of the international securities are deposited in

²⁵ Starting with a government bond settlement scheme makes sense for 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 \$549 billion, and corporate bonds \$371 billion. By June 2012, the size of outstanding government bonds has risen more than 7 times, but that of corporate bonds by nearly 5.5 times.

Europe and US whose time zones are quite different from Asia's. By having payment and settlement systems at the same Asian time zone, this third time zone problem can 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 October 2nd 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 October 1st, 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 October 2nd (4 p.m. in Hong Kong, China). Then, the seller in Hong Kong, China can withdraw Hong Kong dollars, and the settlement can be finished by October 2nd.

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 October 2nd in Belgium time, the seller may not be able to withdraw money by October 2nd. For example, by the time the RTGS settlement is completed by 3 p.m. on October 2nd, it is already 10 p.m. in Hong Kong, China and the bond seller has 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 the US dollar, security and payment settlement can 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 will not face this extra cost. The benefit of solving the third time zone problem can 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 Asia's central banks can be a catalyst for open domestic markets and regulatory harmonization across the region gradually. Existing international central securities depositories (ICSDs) such as Euroclear and Clearstream are private entities, and it will 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 will encourage them to discuss more financial policy coordination among Asian governments. It will 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.

IV. RELATION WITH OTHER INITIATIVES

A. 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 brought forward in the early 1990s. But, as described by Oh et al. (2003), the early initiatives advocating for these propositions were “merely talk without action.” Among the factors that were cited for non-action of most stakeholders include reluctance to liberalize local capital markets and absence of the requisite institutions.

Following the 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 Chang 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 Banks²⁶ with the launch of the Asia Bond Fund initiative in June 2003 and Asia Bond Fund 2 initiative in December 2004.²⁷

B. ABMI and RSI²⁸

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, regional credit guarantee agencies, and so on. As regards the clearing and settlement infrastructure component of ABMI, a couple of studies were undertaken to examine the relevant factors and dimensions. The first of these research works 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 are mostly utilizing central bank-operated settlement systems that are not linked with a clearing company or a central counterparty. And while European ICSDs extended linkages to some countries in Asia for cross-border issuances, the differences in settlement cycles and time zones naturally yield 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 develops fully. 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.

²⁶ 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.

²⁷ 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).

²⁸ This subsection draws heavily from Park and Rhee (2006).

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 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.²⁹

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 the CSD linkage model.

Needless to say, the proposal 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 extrapolated in the previous section. The authors also deem that financial viability may be a concern in the short-term in building regional settlement infrastructure. Euroclear and Clearstream did not also make money in the beginning. Similar to Asia’s growth story, infrastructure was built first to encourage private investors to come in. The same logic should apply for the development of regional capital markets in Asia.

C. ASEAN+3 Local Currency Trading System

The push for a more extensive cross-border local currency-based trading has gained further boost after 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 in

²⁹ The Asian ICSD model proposes a similar platform to the European ICSDs (e.g., Clearstream and Euroclear) with direct linkages to local 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 to have a PVP 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 by seven European CSDs.

reducing 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 payment and settlement scheme—could be one option to achieve this end. So far, Asian policy makers continue to complain about rising financial vulnerabilities of their economies resulting from greater interconnectedness of the global economy. If they are serious, they should show strong political will in establishing central banks' linkages for trade and government bond settlement that will help the region reduce the risks from these vulnerabilities without requiring much start up costs.

D. 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 crisis. Indeed, it is ironic that during the 2008 global financial crisis which started from the financial crisis in the US, it is 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, has signed local currency bilateral swap agreements with 18 countries and regions by the end of 2011, with a total size of RMB1.6 trillion (He 2012)

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 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 size was doubled to \$240 billion recently. 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 significant amount of time and effort.

The IMF conditionality connection also serves as 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 availing CMIM funds. Several ideas have been suggested 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 our 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.

V. CONCLUSION

The global financial crisis has once again stimulated discussions to reform 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 scheme 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. 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. Indeed, infrastructure can lower costs and bring new demand for business. The role of Asian governments in helping put this proposal into fruition is extremely important. As Eichengreen (2011) noted, in the early 20th century, US policy makers 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 British pound as the key international currency.

Asian policy makers 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 such should be a practical way of reducing US dollar dependence without the risks associated with rapid capital market opening. It will also contribute to capital market development in Asia.

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A Practical Approach to International Monetary System Reform: Building Settlement Infrastructure for Regional Currencies

The renminbi trade settlement scheme piloted between the People's Republic of China and Hong Kong, China demonstrates that the existence of appropriate financial infrastructure could reduce the relatively larger costs of bilateral currency transactions compared with triangular transactions through the US dollar. Extending the local currency bilateral trade settlement scheme to the rest of Asia and appending a government bond payment and securities settlement system could thus be a practical solution to international monetary system reform and the diversification of settlement currencies.

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