



# THE BRICS AND ASIA, CURRENCY INTERNATIONALIZATION AND INTERNATIONAL MONETARY REFORM

PAPER NO. 3 — JUNE 2013

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

Changyong Rhee and Lea Sumulong



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## Authors' note

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## **ABOUT THE PROJECT AND PAPER SERIES**

### **The BRICS and Asia, Currency Internationalization and International Monetary Reform**

The disjuncture between global markets and an international monetary system (IMS) based on national currencies generates instability for global trade and finance. As the BRICS (Brazil, the Russian Federation, India, the People's Republic of China [PRC], South Africa) and Asian countries have become more integrated into the world economy, their governments have become increasingly aware of fundamental problems or challenges in the current IMS.

In December 2012, the Asian Development Bank (ADB), The Centre for International Governance Innovation (CIGI) and the Hong Kong Institute for Monetary Research (HKIMR) co-hosted a conference in Hong Kong, China. The conference examined: a range of views on the fundamental systemic problems that are a catalyst for international monetary reforms; views from the BRICS and Asian countries, as well as regional considerations regarding the measures that key countries are already taking to respond to the challenges of the IMS, including currency internationalization; and options and preferences for orderly adjustment of the IMS.

The 10 papers in this series, authored by esteemed academic and policy experts, were presented at the conference in Hong Kong, China and were subsequently revised. These working papers are being published simultaneously by all three partners.

## **ABOUT THE AUTHORS**

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## ACRONYMS

ABMI	Asian Bond Markets Initiative
ADB	Asian Development Bank
AMRO	ASEAN+3 Macroeconomic Research Office
ASEAN	Association of East Asian Nations
ASEAN+3	ASEAN plus the PRC, Japan and the Republic of Korea.
BIS	Bank for International Settlements
BoCHK	Bank of China Hong Kong
CIGI	The Centre for International Governance Innovation
CLS	Continuous Link Settlement
CMIM	Chiang Mai Initiative Multilateralization
CSD	central securities depository
FDI	foreign direct investment
G20	Group of Twenty
GoE	Group of Experts (ABMI)
HKIMR	Hong Kong Institute for Monetary Research
HKMA	Hong Kong Monetary Authority
HSAHP	Hang Seng China AH Premium Index
ICSDs	international central securities depositories
IMF	International Monetary Fund
IMS	international monetary system
M&A	mergers and acquisitions
MOFCOM	Ministry of Commerce (PRC)
NDF	non-deliverable forward
PBoC	People's Bank of China
PRC	People's Republic of China
QDII	qualified domestic institutional investor
QFII	qualified foreign institutional investor
RMB	renminbi
RQFII	RMB QFII
RSI	Regional Settlement Intermediary
RTGS	Real Time Gross Settlement
RTS	RMB trade settlements
SDRs	Special Drawing Rights
UN	United Nations

## EXECUTIVE SUMMARY

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 [PRC] 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.

## 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 Twenty (G20), for example, has reached broad agreement to reduce persistently large current account imbalances by adopting indicative guidelines for assessing country performance (G20 Leaders, 2010; 2011a). New perspectives on the role of capital controls against speculators are also now emerging (G20 Leaders, 2011b; Ostry, et al., 2010; 2011; Ostry, 2012). 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 (Association of East Asian Nations [ASEAN] Secretariat, 2012). These are welcome advancements, considering that these very same issues were raised after the 1997–1998 Asian financial crisis and 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 centred, in the 1960s, on debates about “exorbitant privilege” (Eichengreen,

2011).<sup>1</sup> As Jacques Rueff (1971), former adviser 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 [UN], 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.

The heavy reliance on the US dollar, however, is an all-too important issue for Asia to be satisfied with the status quo. Asia had 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 regarding the 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-dependent structure of their economies caused Asia to suffer first when Western banks withdrew their money and fled emerging markets (Lee and Rhee, 2012).

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



As Asia's economic power 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 imply 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,<sup>2</sup> and while this would help, it will not solve the problem. Despite significant efforts by the IMF, it is clear that the size of available resources will not be enough. The stigma effect is also a constraint to the IMF crisis-prevention toolkit's effectiveness, 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 would take some time before the SDRs could be widely used in private markets. Moreover, 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. 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.

This paper argues 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; rather, 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 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 cheque issuance to enterprises choosing to settle trade transactions in RMB. The scheme was promoted by 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 non-residents (Yu, 2012b).

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 (People's Bank of China [PBoC] 2011; 2012b). Non-trade transactions have also risen

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." See: [www.imsreform.org/safety.html](http://www.imsreform.org/safety.html).



tremendously. RMB deposits swelled from RMB62.7 billion at the end of 2009 to RMB545.7 billion by the end of September 2012 (Hong Kong Monetary Authority [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.<sup>3</sup>

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” scenario: building infrastructure can make a difference, but transaction costs of using non-US dollar currencies are high since adequate infrastructure has not been built; however, these costs could be significantly reduced if proper infrastructure were 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 the 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 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 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 versus payment was available together with infrastructure for delivery versus payment for RMB securities.

This paper thus proposes to promote more bilateral trade settlement systems or a multilateral trade settlement system in Asia, 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<sup>4</sup> members’ Asian Bond Markets Initiative (ABMI) after the Asian financial crisis in 1997 (ASEAN Secretariat, 2003).

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).

4        ASEAN member states are Brunei Darussalam, Cambodia, Indonesia, the Lao People’s Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam. ASEAN +3 includes the PRC, Japan, and the Republic of Korea.

The rest of this paper is organized as follows: Section 2 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 3 presents a proposal to expand the current bilateral system to other countries and deepen the scheme by combining the trade 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 4 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 5 concludes the findings and recommendations of the paper.

## THE RMB TRADE SETTLEMENT SYSTEM

### Background

On July 6, 2009, the 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.<sup>5</sup> Yu (2012b) succinctly summarizes the main objectives of this new initiative of 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 ASEAN 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 cheque issuance. These transactions are facilitated by the relevant clearing and settlement services. Participating banks outside the PRC, on the other hand, can engage correspondent banks or the clearing bank in the PRC (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 June 22, 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.

<sup>5</sup> It was first introduced in April 2009, while the memorandum of understanding between PBoC and the HKMA was signed in June 2009.

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.<sup>6</sup> 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 RMB20 billion and later raised to RMB70 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).

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6 RMB FDI application valued at least RMB300 million must be approved by the Ministry of Commerce (MOFCOM). Placement of cross-border RMB direct investment in securities, derivatives, and entrusted loans within 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 MOFCOM approval. 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." October 14).

First, there is the CNY, which is the RMB unit used in onshore dealings. It is fully convertible on the current account, which means that its use 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 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, there is the CNH, which is the RMB currency unit used in offshore markets, mainly Hong Kong, China. CNH is the first form of a deliverable RMB outside the PRC, made possible by an agreement between the HKMA and PBoC, which was formalized on July 19, 2010. Unlike CNY, CNH's spot and forward rates have very minimal utilization restrictions, whether in commodity and services trading, cash remittances or portfolio investments. 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, there is the CNY-NDF (non-deliverable forward), which is the forward rate of RMB anchored on the CNY market, but settled in US dollars. 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 exchange rate policy inclinations in the short term). 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 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 the CNY-NDF, should the current initiatives to develop and promote the use of the currency progress steadily.

Lastly, there is the CNT,<sup>7</sup> which is the RMB unit used in settling trade. Since cross-border trade transactions are settled onshore, deals ought to be denominated in CNY. The CNY unit specially used to complete cross-border trade payments is called the 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).

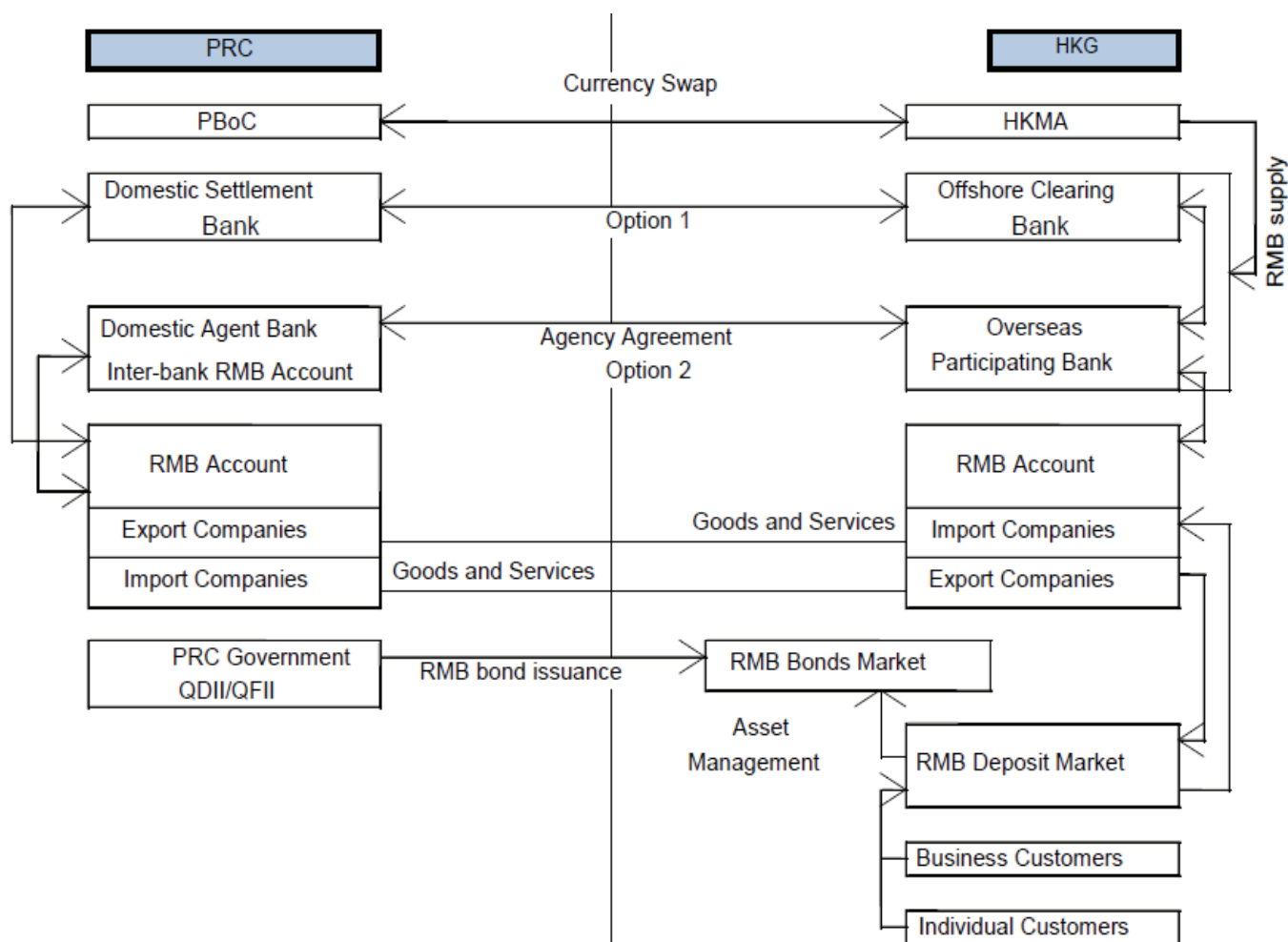
### The Trade Settlement Framework

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.<sup>8</sup> As mentioned earlier, the scope of the framework now includes all trading

<sup>7</sup> This is different from the CNT that 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 August 31, 2012.

<sup>8</sup> Macau Monetary Authority in the case of Macau, China.

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



Source: authors

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.

Take the case of an offshore importer. One way to move funds is by coursing the payment through an authorized participating overseas bank that then transmits it to the designated offshore clearing bank. If the cash transaction poses no concerns based on the regulations of the PBoC and HKMA, the offshore clearing bank then channels the funds to the onshore settlement bank before it reaches the onshore exporter's RMB account. The other way to

move funds is by having a domestic commercial bank function as an agent of the overseas participating bank by virtue of a binding agreement. In this case, the domestic bank opens an onshore inter-bank RMB fund transfer account for the overseas bank. The domestic agent bank then settles the cross-border transaction and reports the 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 the end of 2011, there are a total of 187 banks participating in the scheme from over 30 countries and six 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.<sup>9</sup> Essentially, the BoCHK is authorized to convert foreign currencies into RMB and to utilize credit lines with the inter-bank foreign exchange and interbank borrowing market in the PRC in accordance with the parameters set by PBoC.<sup>10</sup> 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 in RMB with PRC firms 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 multi-currency 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.

### **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 RMB42 billion in 2010 to RMB228 billion as of September 2012, while RTS share to total PRC trade with the world has more than quadrupled — from 2.5 percent to 11.4 percent (Table 1). In terms of the PRC's trade with Hong Kong, China, RTS accounted for just 32.5 percent in 2010. By 2011, however, the share has exceeded 100 percent, implying that some of the PRC's trade with other countries has also been settled in RMB that was cleared through Hong Kong, China.

<sup>9</sup> The Clearing Agreement between the PBoC and Bank of China (Hong Kong) Limited in Relation to Renminbi Business was signed in July 2009.

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

**Table 1: Cross-border RMB Trade Settlement**

Period	Total RTS, RMB Billions	Total RTS, Monthly Average, RMB Billions	Total RTS, Percentage of PRC Trade with the World	Total RTS, Percentage of PRC Trade with Hong Kong
July–December 2009	3.6	0.6	0.0	0.5
January–December 2010	506.3	42.2	2.5	32.5
January–December 2011	2,080.0	173.3	8.8	113.6
January–September 2012	2,050.0	227.8	11.4	136.6

Sources: CEIC, 2012; PBoC 2011, 2012a; and authors' calculations.

The Gulf Cooperation Council countries;<sup>11</sup> Singapore; Taipei, China; and the Republic of Korea have recently shown a strong uptake in the use of RMB for trade payments (Swift, 2012).

Initially, trade settlements have been largely import-oriented (i.e., RMB flows are biased in favour 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 the end of 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 in spite of 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 percent, albeit substantially slower than the 311 percent 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 indicate that growing RMB utilization is more than just due to currency speculations.<sup>12</sup>

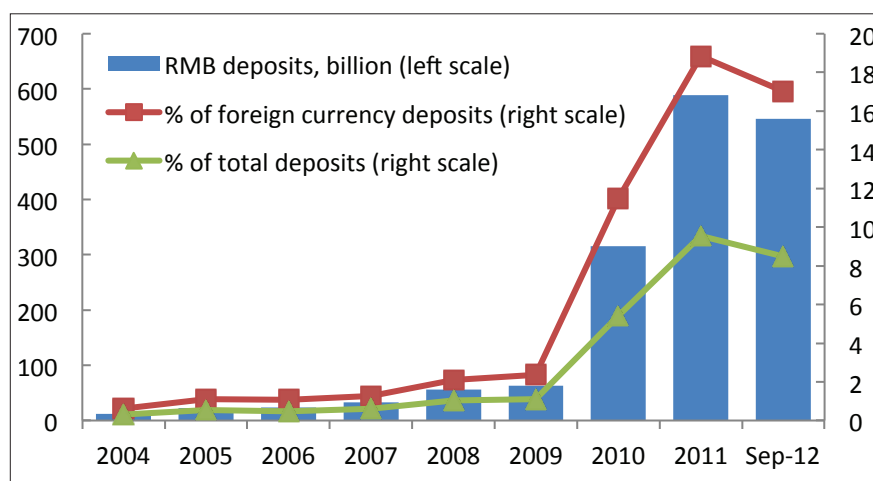
One immediate result of the expansion of RMB-based cross-border trade settlement is the swelling of RMB deposits in Hong Kong, China. As traders are secure in their ability to convert their RMB deposits into reserve currencies whenever they want to or need to, they have an incentive to increase their holdings of offshore RMB deposits in Hong Kong, China. This expedites the growth of RMB-denominated financial products, which in turn increase RMB-denominated lending and borrowing to offshore investors who have no trade linkages with PRC corporations. As a result, from about RMB62.7 billion at the end of 2009, the total RMB deposit value in Hong Kong, China has ballooned to RMB545.7 billion as of the end of September 2012 (Figure 2). Overseas banks' RMB correspondent accounts increased more than five times in a span of 12 months — from 187 accounts 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

<sup>11</sup> Gulf Cooperation Council member countries are the United Arab Emirates, the Kingdom of Bahrain, the Kingdom of Saudi Arabia, the Sultanate of Oman, Qatar and Kuwait.

<sup>12</sup> 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 is not easily reversed by the cyclicity of RMB exchange rate expectations.

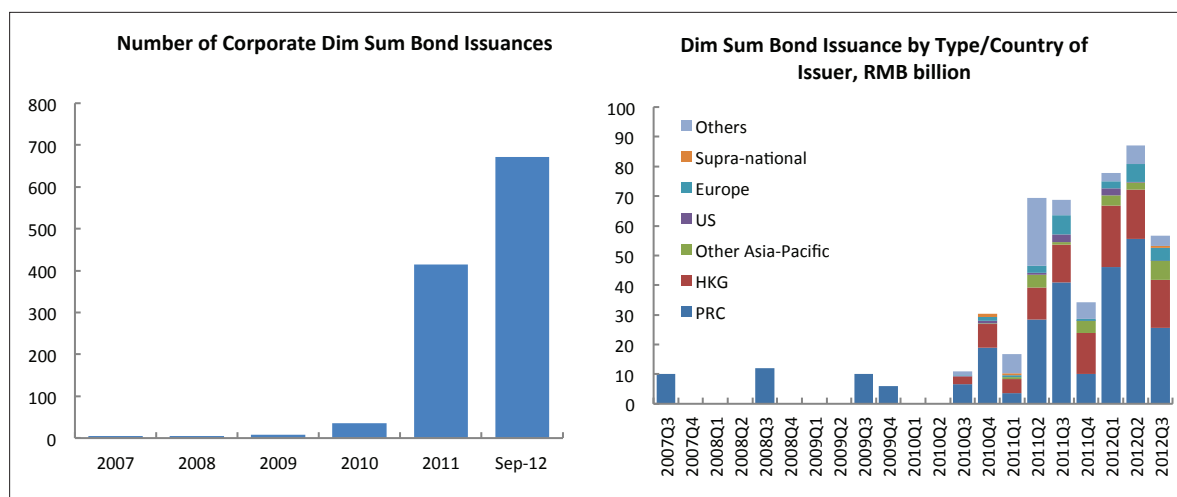


**Figure 2: Outstanding RMB Deposits in Hong Kong, China**



Source: HKMA, 2012b.

**Figure 3: RMB Bond Issuance in Hong Kong, China**



Source: Bloomberg, 2012.

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 the end of 2011 (KPMG, 2012).

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<sup>13</sup> and equity investment regulations,<sup>14</sup> 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 significantly increased to RMB189.3 billion in 2011 (RMB221.4 billion as of the third quarter of 2012) (Figure 3).<sup>15</sup> The number of bond issuances has likewise climbed steeply from just five in 2007, to 414

in 2011 and to 671 as of the end of September 2012,<sup>16</sup> while the number of bond issuers increased from just three in 2007 to 107 by the end of 2011.

In addition, the offshore RMB capital market also saw sizable 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 two to three percentage points to below zero. Similarly, the Hang Seng China AH Premium Index,<sup>17</sup> which has been trading at a premium of over 100 percent favouring stock prices of PRC companies' A-shares at one point in 2008, has declined considerably since 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).<sup>18</sup> With the increase in offshore liquidity, RMB clearing transactions have also surged from RMB39.3 billion in 2009 to RMB22.7 trillion

13 See the Circular of the Ministry of Commerce on Issues Concerning Cross-border RMB Direct Investment, Shang Zi Han [2011] No. 889, effective October 12, 2011. See the Administrative Rules on Settlement of RMB-denominated Foreign Direct Investment PBC Document No.23 [2011] 13 October 2011, effective October 13, 2011.

14 The RQFII is governed by the Pilot Scheme for Domestic Securities Investment. Previously, a foreign company could only participate in the PRC's securities market via the QFII program, where the company can convert foreign currency to RMB to take part in the trading. The PRC Securities Regulatory Commission has to approve the application, while State Administration of Foreign Exchange determines the allocation of the quota.

15 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 ADB, the World Bank and the International Finance Corporation).

16 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).

17 Some companies trade in the stock markets in both Shanghai and Hong Kong. "A-shares" are the stock price of the company in Shanghai, while "H shares" are the stock price of the same company in Hong Kong. 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. See Hang Seng Indexes, available at: [www.hsi.com.hk/HSI-Net/HSI-Net](http://www.hsi.com.hk/HSI-Net/HSI-Net).

18 The index spiked briefly starting at the end of September 2011, when there were speculations about Asia's ability to absorb external weakness, but the differential in the stock prices quickly declined over the two to three weeks that followed.

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.<sup>19</sup>

## 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 the triangular transaction of non-US dollar currencies through the US dollar, and there is skepticism that no other 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” scenario. It is a good example of how proper infrastructure can reduce transaction costs and generate new demand. This experience implies that, rather than focussing 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 good approach to 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’ choices. Asia has not invested in cross-border financial infrastructure, and if Asia continues not to invest in such infrastructure, high transaction costs will not be overcome forever.

Second, 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 the 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 CNY-NDF market can flourish and affect domestic monetary policy management and volatility in a way similar to the RMB trade settlement scheme. 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

<sup>19</sup> 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: building more liquid financial markets; opening the capital account; handling the growth slowdown; and making credible commitments to develop deep and liquid financial markets.

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 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 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 versus payment was available together with infrastructure for delivery versus 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.

## EXPANDING AND DEEPENING THE REGIONAL CURRENCY SETTLEMENT SYSTEM

### 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 the expansion of the trade settlement scheme to neighbouring economies. Unlike during the first phase of yen internationalization,<sup>20</sup> 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.<sup>21</sup>

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

20 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).

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

such as Japan, the ASEAN, the Republic of Korea and others. 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 the 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 a trade settlement currency will reduce developing Asia's 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 inter-regional 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 US\$284.9 billion. By 2011, intra-Asian trade has risen to US\$4,201.6 billion (or an average annual growth rate of 12.8 percent). Considering the rising middle income class in Asia and the protracted slowdown in advanced economies, Asian traders are likely to look further to their neighbours 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 percent of PRC's trade with Hong Kong, China from just over 30 percent 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 US\$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, the monthly average transaction value was only RMB352 million. In the first nine 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.<sup>22</sup>

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22 To illustrate, if 100 percent of intra-regional trade transactions in developing Asia are settled in local currency, then US dollar usage could be reduced by over US\$4 trillion per year. If local currency intra-regional clearing transactions could amount to 15 times this value, this would run up to US\$60 trillion per year, which is a significant improvement, but still a small fraction of the over-US\$150 quadrillion annual (or US\$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 Bank for International Settlements (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.

### **Combining Regional Trade and the Government Bonds Settlement System**

One lesson from Hong Kong, China's RMB trade settlement scheme experience is that having an efficient payments and securities settlement system could simultaneously have strong synergies in promoting the 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.

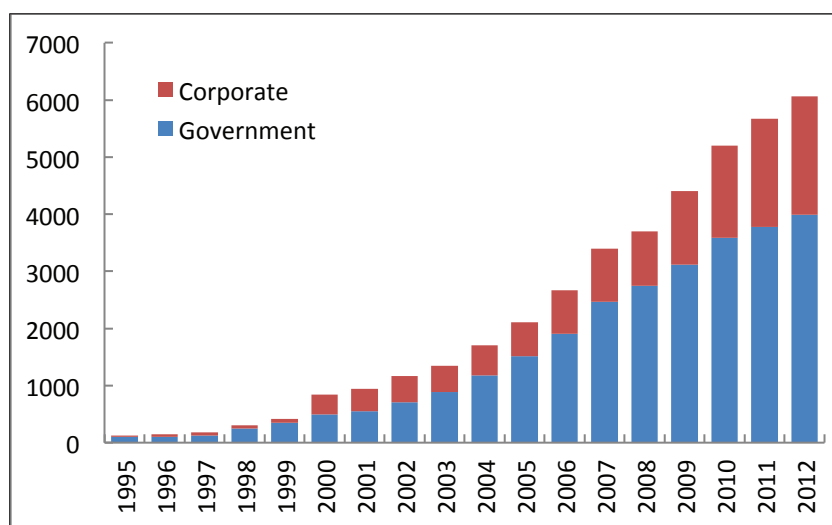
After the Asian financial crisis in 1997, the ASEAN+3 economies tried hard to promote the development of local currency denominated bond markets. There was a strong realization that the underdevelopment of bond markets in the region greatly exacerbated and, perhaps, caused the crisis. The idea of regional 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 US\$126 billion by the end of 1995, outstanding local currency bonds in Asia have ballooned to US\$6,066 billion by the end of 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 US\$28.7 billion in 2001, intra-ASEAN+3 cross-border holdings of

debt securities now amount to US\$132.6 billion at the end of 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 the settlement of government bonds in Asia. We believe combining the regional trade payment settlement system with a government securities settlement scheme can make a good business case, too.

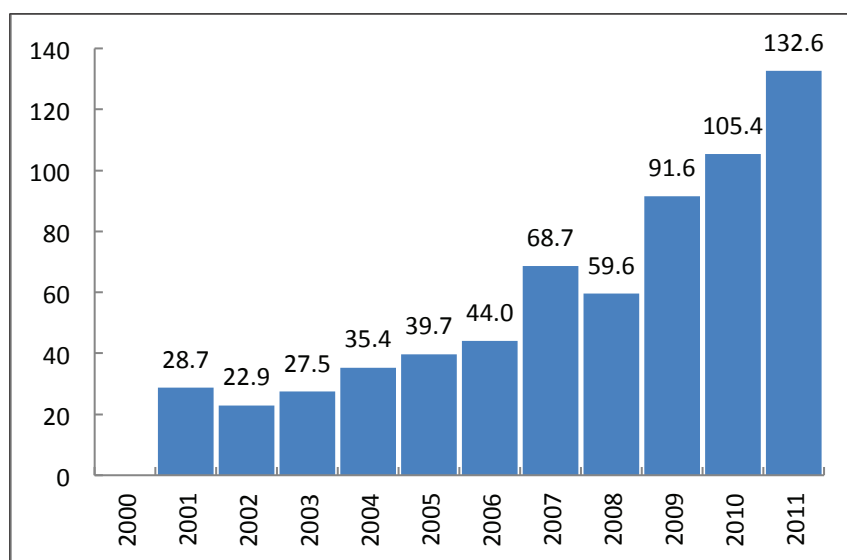


**Figure 4: Local Currency Bonds Outstanding in Asia, US\$ Billion**



Source: AsianBondsOnline, 2012.

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



Source: IMF, 2012.

In fact, as a part of the ASEAN+3 ABMI, discussions are currently underway to set up an RSI for securities, in particular, cross-border bond transactions (ADB, 2010). This is a very important initiative and some progress has been made. Building a full business model for securities settlement would require large fixed costs and full liberalization of capital markets.

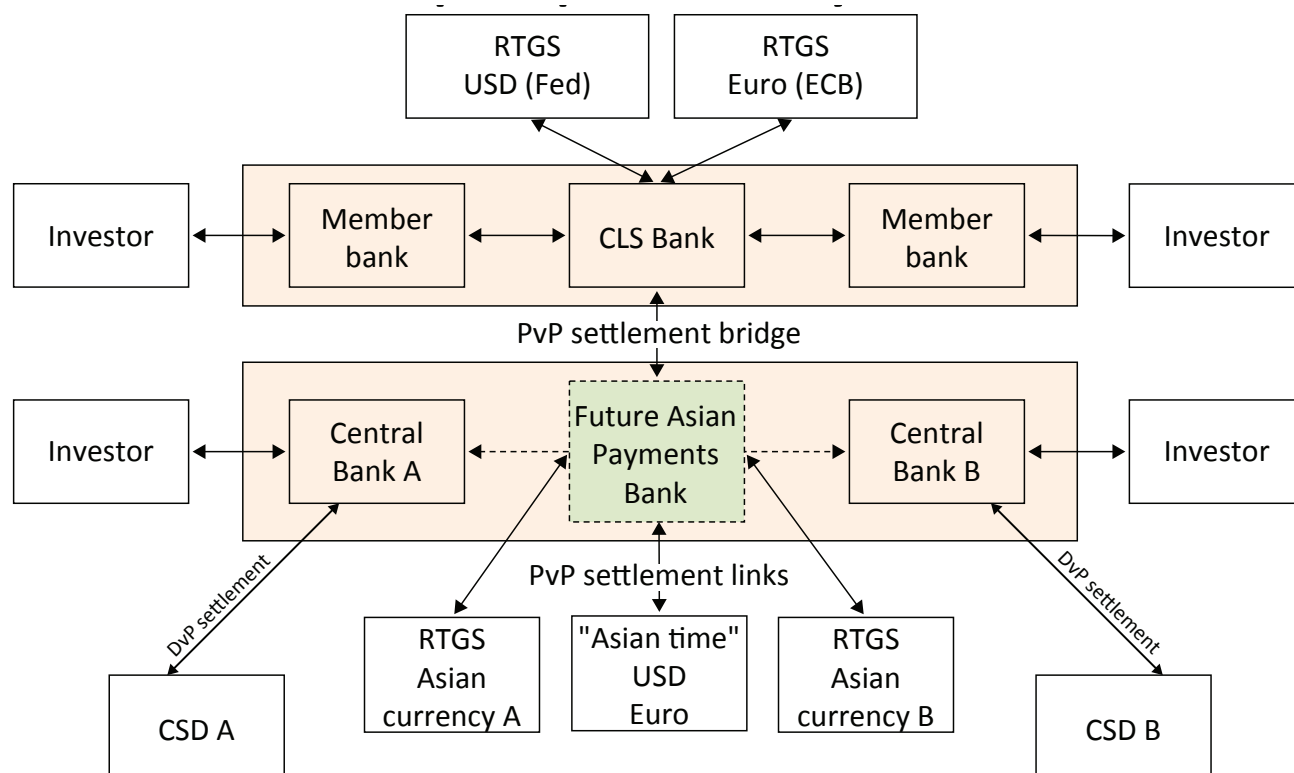
As such, the progress of this initiative has slowed after the global financial crisis, partly due to the increasing unwillingness of regional governments to expedite capital market liberalization.

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

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 (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 bilateral currency swap lines is thus vital to address these liquidity considerations inasmuch as trade and government bond transaction are concerned.

However, unlike trade transactions where the 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.<sup>23</sup> 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.

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. While payment transactions can be made during the same time zone when Asian investors trade securities with each other since the business hours of most central banks in Asia are similar, securities settlements have to wait until US or European settlement hours, as most of the international securities are deposited in Europe and the United States. Having payment and settlement systems in the same Asian time zone would solve this third time zone problem.

As an example to illustrate the problem, consider the settlement process of an Asian bond that is denominated in Hong Kong dollars. Hong Kong, China is seven hours ahead of Brussels, where Euroclear is located. Assume that the settlement date of the bond is October 2 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 — the HSBC bank — by October 1, which is a day before the settlement date. After getting notification from HSBC overnight, Euroclear Bank in Brussels completes the security settlement by 9:00 a.m. on October 2nd (4:00 p.m. on that same date in Hong Kong, China). Then, the seller in Hong Kong, China can withdraw Hong Kong dollars, and the settlement can be finished by October 2.

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 2 in Belgium time, the seller may not be able to withdraw money by October 2. For example, by the time the RTGS settlement is completed by 3:00 p.m. on October 2, it is already 10:00 p.m. in Hong Kong, China and the bond seller has to wait until the next

<sup>23</sup> 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 US\$549 billion, and corporate bonds US\$371 billion. By June 2012, the size of outstanding government bonds has risen more than seven times, but that of corporate bonds by nearly 5.5 times.

**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, Republic of	X	KSD	KSD	BOK
PRC	CGSDTC	CGSDTC	CGSDTC	
Taipei, China	CBC	TSCD	TSCD	CBC
Singapore	MAS	MAS	CDP	
India	X	NSDL	NSDL	
Pakistan	The State Bank of Pakistan			

**Table acronyms:**

ADI	authorized depository institution	CMU	Central Moneymarkets Unit, Hong Kong, China
BNM	Bank Negara Malaysia	KPEI	PT Kliring Penjaminan Efek Indonesia (Securities Underwriting Clearing Indonesia)
BOJ	Bank of Japan	KSD	Korea Securities Depository
BOK	Bank of Korea	KSEI	PT Kustodian Sentral Efek Indonesia (Indonesian Central Securities Depository)
BOT	Bank of Thailand	MAS	Monetary Authority of Singapore
BSP	Bangko Sentral ng Pilipinas	NSDL	National Securities Depository Limited, India
BTr	Bureau of the Treasury, Philippines	NZCSD	New Zealand Central Securities Depository
CBC	Central Bank of China	RBA	Reserve Bank of Australia
CDP	Central Depository Pte. Ltd., Singapore	RBNZ	Reserve Bank of New Zealand
CGSDTC	China Government Securities Depository Trust and Clearing Co. Ltd.	TSCD	Taiwan Securities Central Depository Co., Ltd.

Source: reproduced from Oh et al., (2003).

business day to withdraw their 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 favour of the security and payment settlements. The third time zone problem means 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 and pricing agencies, which are all necessary infrastructure for the development for a full-fledged local currency capital market in Asia.

## RELATIONSHIPS WITH OTHER INITIATIVES

### 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 Oh et al. (2003) describe it, the early initiatives advocating for these propositions were "merely talk without action." Among the factors that were cited for most stakeholders' non-action include the reluctance to liberalize local capital markets and the absence of the requisite institutions.

Following the debilitating experience of 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 the ABMI began in November 2002 before it was formally launched during the ASEAN+3 Finance Ministers Meeting in Manila in August 2003. The ABMI came after the CMIM was formalized in May 2000 by the ASEAN+3 group and was later complemented by the Executives' Meeting of East Asia Pacific Central Banks<sup>24</sup> with the launch of the Asia Bond Fund initiative in June 2003 and the Asia Bond Fund 2 initiative in December 2004.<sup>25</sup>

### The ABMI and RSP<sup>26</sup>

Under the 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 other matters. Two studies were undertaken to examine the relevant factors and dimensions of the ABMI's clearing and settlement infrastructure component. The first of these studies points out that over-the-counter securities trading in many Asian countries are mostly using central bank-operated settlement systems that are not linked with a clearing company or a central counterparty (ADB, 2005). And while European ICSDs extended

24 The Executives' Meeting of East Asia Pacific Central Banks is composed of the RBA, the PBoC, the HKMA, Bank Indonesia, the BOJ, the BOK, BNM, the RBNZ, BSP, the MAS, and the BOT.

25 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).

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

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, notes 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, the study proposes 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 and delivery versus payment facility.

The follow-up study (ADB, 2007) is the second research cycle on bond market infrastructure under ABMI. It assesses the settlement costs and risks accompanying the settlement systems in the region in greater detail, proposing to establish an RSI and suggesting its possible architecture. As one of the rationales for establishing the RSI, the paper examines how the lack of regional infrastructure can exacerbate the foreign exchange settlement risks — the third time zone problem. 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.<sup>27</sup>

Building on the findings of these two 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 proposed Asian RSI. 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 subset 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 GoE report's observation that regulatory controls and

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27 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-depositaries. 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 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.



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. 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. 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 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.

### **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 ASEAN+3 Finance Ministers and Central Bank Governors' Meeting in Manila on May 3, 2012. Recognizing the need to advance the agenda of regional financial integration to a higher level, the caucus has called for the ABMI to undertake further study on the use of local currencies for regional trade settlement and to put forward concrete policy recommendations. Such an endorsement shows the political will of ASEAN+3 members in 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.

### **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. It is ironic that during the 2008 global financial crisis, which started from the financial crisis in the United States, the US Federal Reserve's currency swap helped the Republic of Korea to 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. 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, which 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 formalize it into a multilateral agreement, the 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 recently, the total fund size was doubled to US\$240 billion. The IMF de-linked portion was also increased to 30 percent in 2012, and targeted to be further raised to 40 percent 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 funds committed under the CMIM continue to remain in each individual country's coffer, and the mechanism for fund 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 a 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"<sup>28</sup> 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.

## CONCLUSION

The global financial crisis has once again stimulated discussions to reform the international financial architecture. This paper argues that the 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 were set up. Indeed, infrastructure can lower costs and bring new demand for business. The role of Asian governments in helping to bring this proposal to fruition is extremely important. As Eichengreen (2011) notes, in the early twentieth 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

28 The Maastricht Treaty not only established the euro but also compels individual nations to meet certain economic performance standards.



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 this would 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.

## WORKS CITED

- ADB (2005). *Bond Market Settlement and Emerging Linkages in Selected ASEAN+3 Countries*. Manila.
- (2007). *Minimizing Foreign Exchange Settlement Risk in the ASEAN+3 Region*. Regional Technical Assistance 6338 Final Report.
- (2010). *ABMI Group of Experts Final Report Part II: Evaluation of the Feasibility of Regional Settlement Intermediary Options for the ASEAN+3*. Manila.
- AHK Greater China (2011). “The Long March of the Renminbi: Internationalisation of China’s Currency via Hong Kong.” *Gc.comm*, May.
- ANZ Research (2012). CNH Market Monitor. 9 May.
- ASEAN Secretariat (2003). “Chairman’s Press Release on the Asian Bond Markets Initiative.” Available at: [www.asean.org/communities/asean-economic-community/item/chairman-s-press-release-on-the-asian-bond-markets-initiative](http://www.asean.org/communities/asean-economic-community/item/chairman-s-press-release-on-the-asian-bond-markets-initiative).
- (2012). “The Joint Statement of the 15th ASEAN+3 Finance Ministers and Central Bank Governors’ Meeting.” May.
- AsianBondsOnline (2012). Asia Regional Integration Centre. Available at: <http://aric.adb.org>.
- BIS (2010). *Triennial Central Bank Survey: Report on Global Foreign Exchange Market Activity in 2010*. BIS: Monetary and Economic Department.
- Bloomberg (2012). Market Data. Available at: [www.bloomberg.com/markets/](http://www.bloomberg.com/markets/).
- Broz, J. Lawrence (1997). *The International Origins of the Federal Reserve System*. Ithaca: Cornell University Press.
- CEIC (2012). *WorldTrend Database*. Available at: [www.ceicdata.com/WorldTrend.html](http://www.ceicdata.com/WorldTrend.html).
- de Silva, André and Pin-Ru Tan (2012). “China Bonds: Increase in QFII and RQFII Quotas.” HSBC Global Research flash note. April.
- Eichengreen, Barry (2011). *Exorbitant Privilege: The Rise and Fall of the Dollar and the Future of the International Monetary System*. London: Oxford University Press.
- (2012). “The Renminbi Challenge,” Project Syndicate. October 9.
- Frankel, Jeffrey (2011). *Historical Precedents for Internationalization of the RMB*. New York: Council on Foreign Relations Press.
- G20 Leaders (2010). “The G20 Seoul Summit Leaders’ Declaration.” November 12.
- (2011a). “Communiqué: Meeting of Finance Ministers and Central Bank Governors.” April 15.
- (2011b). “G20 Coherent Conclusions for the Management of Capital Flows Drawing on Country Experiences (as endorsed by G20 Finance Ministers and Central Bank Governors).” October 15.

- Gallagher, Kevin P., Stephany Griffith-Jones and José Antonio Ocampo (2011). "Capital Account Regulations for Stability and Development: A New Approach." *Issues in Brief* 22. Boston University: The Frederick S. Pardee Center for the Study of the Longer-Range Future.
- Gourinchas, Pierre-Olivier and Hélène Rey (2007). "From World Banker to World Venture Capitalist: U.S. External Adjustment and the Exorbitant Privilege." In *G7 Current Account Imbalances*, edited by Richard Clarida. Pages 11–55. Chicago: University of Chicago Press.
- He, Dong (2012). "Renminbi Internationalisation: A Primer." Hong Kong: HKIMR.
- HKMA (2009). "Renminbi Trade Settlement Pilot Scheme." *Hong Kong Monetary Authority Quarterly Bulletin*.
- (2012a). *Hong Kong: The Premier Offshore Renminbi Business Centre*. HKMA.
- (2012b). *Monthly Statistical Bulletin December 2012*. Hong Kong, China.
- HSBC (2010). "The Offshore Renminbi," HSBC, December 1.
- (2011). "RMB FDI Formalization: A Structural Boost for CNH Market," HSBC, October 14.
- Hui, Daniel and Dominic Bunning (2010). "The Offshore Renminbi: A Practical Primer on the CNH Market." *Macro Asian Currencies*. Hong Kong: HSBC Global Research.
- Hyun, Suk and Hong Bum Jang (2008). "Bond Market Development in Asia" (manuscript).
- IMF (2010). "IMF Enhances Crisis Prevention Toolkit," Press Release No. 10/321, August 30.
- (2012). Coordinated Portfolio Investment Survey. Available at: <http://cpis.imf.org/>.
- Jeanne, Olivier, Arvind Subramanian and John Williamson (2012). *Who Needs to Open the Capital Account*. Washington, DC: Peterson Institute for International Economics.
- Kenen, Peter (2010). "Revisiting the Substitution Account." *International Finance* 13, no. 1: 1–23.
- KPMG (2012). *Hong Kong Banking Survey 2012*. Hong Kong, China: KPMG.
- Lee, Hangyong and Changyong Rhee (2012). "Lessons from the 1997 and the 2008 Crises in Korea." *Asian Economic Policy Review* 7, no. 1: 47–64.
- Li, Bo, Ge Wu and Cheng Pei (2012). "What Drives RMB Trade Settlement?" (manuscript).
- Ma, Jun, Linan Liu and Hui Miao (2012). "Roadmap for RMB Internationalization." *Asia Economics Special*. Deutsche Bank Global Market Research.
- Mallaby, Sebastian and Olin Wethington (2011). "The Future of the Yuan: China's Struggle to Internationalize Its Currency." New York: Council on Foreign Relations: Foreign Affairs.
- Maziad, Samar and Joong Shik Kang (2012). "RMB Internationalization: Onshore/Offshore Links." IMF Working Paper WP/12/133.
- Oh, Gyutaeg et al. (2003). "Building a Settlement Infrastructure for the Asian Bond Markets: AsiaSettle." Paper prepared for the Workshop on East Asia's Strategy for Regional and Global Financial Cooperation hosted by the Asia Pacific School of Economics and Government and the Northeast Asian Institute of Business and Economic Research, Australian National University and Korea University, October 11.
- Ostry, Jonathan et al. (2010). "Capital Inflows: The Role of Controls." IMF Staff Position Note SPN/10/04.

- 
- (2011). “Managing Capital Inflows: What Tools to Use?” IMF Staff Discussion Note SDN/11/06.
- Ostry, Jonathan (2012). “Managing Capital Flows: What Tools to Use?” *Asian Development Review* 29, no. 1: 82–88.
- Park, Daekeun and Changyong Rhee (2006). “Building Infrastructure for Asian Bond Markets: Settlement and Credit Rating.” BIS Papers No. 30.
- PBoC (2011). *The People’s Bank of China Annual Report 2010*. Beijing: Monetary Policy Analysis Group of PBoC.
- (2012a). *China Monetary Policy Quarter Four, 2011*. Beijing: PBoC.
- (2012b). *Financial Statistics, H1 2012*. Beijing: PBoC.
- (2012c). *China Monetary Policy Report, Quarter Two (August 2, 2012)*. Beijing: Monetary policy Analysis Group of PBoC.
- Rueff, Jacques (1971). *The Monetary Sin of the West*. New York: MacMillan.
- Sekine, Eiiche (2011). “Renminbi Trade Settlement as a Catalyst to Hong Kong’s Development as an Offshore Renminbi Center.” *Nomura Journal of Capital Markets* Summer 3, no. 1:1–14.
- Swift (2012). “SWIFT RMB Tracker, August 2012.” Available at: [www.swift.com/resources/documents/SWIFT\\_RMB\\_Tracker\\_August\\_2012.pdf](http://www.swift.com/resources/documents/SWIFT_RMB_Tracker_August_2012.pdf)
- UN (2009). “Report of the Commission of Experts of the President of the United Nations General Assembly on Reforms of the International Monetary and Financial System” (draft paper). New York: United Nations.
- Yu, Yongding (2012a). “Rattling the Renminbi,” Project Syndicate. January 30.
- (2012b). “Revisiting the Internationalization of the Yuan.” ADBI Working Paper No. 366.
- Zhang, B. and Q. Xu (2011). “RMB Internationalization in the Context of Exchange Rate and Capital Account Control.” (Unpublished, in Chinese).
- Zhou, Xiaochuan (2009). “Reform the International Monetary System.” Speech of the Governor of the People’s Bank of China, March 23.

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- Foster cooperation and cross-fertilisation of research efforts between academics, analysts and the HKMA research activities, and to establish links and exchanges with research institutes in Hong Kong, the Mainland and the regional economies.
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