

McCauley, Robert N.

**Working Paper**

## Building an integrated capital market in East Asia

ADB Discussion Paper, No. 83

**Provided in Cooperation with:**

Asian Development Bank Institute (ADBI), Tokyo

*Suggested Citation:* McCauley, Robert N. (2007) : Building an integrated capital market in East Asia, ADB Discussion Paper, No. 83, Asian Development Bank Institute (ADBI), Tokyo

This Version is available at:

<https://hdl.handle.net/10419/53446>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



## **Building an Integrated Capital Market in East Asia**

**Robert N. McCauley**

**November 2007**

**ADB Institute Discussion Paper No. 83**

The author is Chief Representative, Representative Office for Asia and the Pacific, Bank for International Settlements. This paper was presented at the Policy Research Institute, Ministry of Finance of Japan/Asian Development Bank Institute seminar, "Ten Years After the Crisis: Evolving East Asian Financial System and the Challenges Ahead," Tokyo, 12 June 2007. The author thanks Claudio Borio, Alicia Garcia-Herrero, Yung Chul Park, and Philip Wooldridge for discussion of the issues, though they bear no responsibility for the errors or judgments herein.

The views expressed in this paper are the views of the authors and do not necessarily reflect the views or policies of the Asian Development Bank Institute (ADBI), the Asian Development Bank (ADB), its Board of Directors; the Bank for International Settlements; or the governments they represent. ADBI does not guarantee the accuracy of the data included in this paper and accepts no responsibility for any consequences of their use. Terminology used may not necessarily be consistent with ADB official terms.

ADBI's discussion papers reflect initial ideas on a topic, and are posted online for discussion. ADBI encourages readers to post their comments on the main page for each discussion paper (given in the citation below). Some discussion papers may develop into research papers or other forms of publication.

Suggested citation:

McCauley, Robert N. 2007. Building an Integrated Capital Market in East Asia. ADBI Discussion Paper 83. Tokyo: Asian Development Bank Institute. Available: <http://www.adbi.org/discussion-paper/2007/11/26/2411.integrated.capital.market.east.asia/>

Asian Development Bank Institute  
Kasumigaseki Building 8F  
3-2-5 Kasumigaseki, Chiyoda-ku  
Tokyo 100-6008, Japan

Tel: +81-3-3593-5500  
Fax: +81-3-3593-5571  
URL: [www.adbi.org](http://www.adbi.org)  
E-mail: [info@adbi.org](mailto:info@adbi.org)

© 2007 Asian Development Bank Institute

**Abstract**

This paper takes stock of the state of financial integration in East Asia. It contrasts the international integration of equity markets, the regional integration of the markets for bonds and syndicated loans denominated in US dollars, and the insularity of most local currency bond markets. In the last, it finds that the regional issuance in the Japanese foreign bond (“Samurai”) and euroyen markets did not recover from the shocks during and after the Asian financial crisis. However, it finds a strong element of regional integration in the “Uridashi” market in which Japanese investors have bought relatively large sums of Australian and New Zealand dollar bonds. Regional central banks have sought to jump-start development of domestic bond markets by investing limited amounts of their official foreign exchange reserves in each other’s domestic bond markets. The willingness of Japanese investors to take on the currency risk of the Australian and New Zealand dollars offers hope that capital can flow within the region without the vehicle of an extra-regional currency.

The largely global integration of East Asian equity markets highlights the risk of opening bond markets to global investors if institutional investors in the region remain sidelined in domestic assets. Without a substantial regional bid for equities, investors in individual economies can end up bearing the brunt of heavy selling by global investors. If institutional investors in the region were able to invest more abroad, they could help lend stability to local bond markets.

**JEL Classification: G1, H63, 016**

**Contents**

I. Introduction	1
II. Major Currency Debt Markets	2
A. East Asian Financial Integration in the US Dollar Bond Market	2
B. East Asian Financial Integration in the Internationally Syndicated Loan Market	4
III. Asian Domestic Currency Bond Markets	6
A. Local Bond Markets: Relatively Closed and Variably Responsive to Global Pricing	6
B. The Samurai Market	9
C. The Uridashi Market for Australian and New Zealand Dollar Bonds	10
D. The Asian Bond Fund 2 Initiative	10
E. Summing Up	15
IV. Equity Markets	15
V. Conclusion	17
References	19

## I. INTRODUCTION

Building an integrated capital market in East Asia remains very much a work in progress. In banking and fixed income markets, the integration that characterizes the United States (US) dollar markets can be found only in pockets of the local currency markets. The yen bond market has come to serve as no more than a niche source of funding for a few of the best credits in East Asia outside Japan. One of the strongest links in the region joins bond investors in Japan to firms in Australia and households in New Zealand. With exceptions, equity markets in the region share much of their price movement. This, however, reflects less a regional bid than their common integration with major global markets through imitation and common capital flows.

This review takes stock of integration in the debt and equity capital markets by examining evidence on both flows of transactions and stocks of asset holdings as well as evidence on pricing. Unlike most recent studies of the subject, this review does not rely on the stock holdings of East Asian debt by East Asians.<sup>1</sup> To rely on such evidence makes it impossible to distinguish the well-integrated foreign currency bond market from the very domestic currency markets. Instead, evidence from the primary market for foreign currency bonds is consulted. For a different reason, the Bank for International Settlements (BIS) data on international banking are not used as the primary source for measuring the integration of East Asian banking markets. In this case, it is the very partial coverage of BIS reporting economies in the region that argues for another approach. Again, data from the primary market, this time for internationally syndicated loans, are consulted.

It should be clear at the outset what this review does not attempt. While the relationships among short-term interest rates in the region represent an important aspect of financial market integration (De Brouwer, 1999; Cheung et al., 2003), the short end of the yield curve lies outside this review's scope. Similarly, the relationships among exchange rates in the region, which show waning stability against the US dollar and waxing stability against trade-weighted baskets, and between onshore and offshore exchange rates (Ma et al., 2004; Ho et al., 2005; Cairns et al., 2007) lie outside this review's scope. The growing body of work on the relationship between financial integration and the responsiveness of consumption to domestic output is also not addressed (Mercereau, 2005; Kim, Kim, and Wang, 2006; Kim, Lee, and Shin, 2006). Finally, policy questions like those addressed by Kuroda (2003) and Kuroda and Kawai (2003) are not systematically addressed, though there is some analysis of the response of market participants to the Asian Bond Fund initiative.

This stock-taking essay approaches regional financial integration in the capital markets of East Asia by examining first the fixed income markets and then the equity markets. The section below measures the substantial regional integration evident in the US dollar markets for international bonds and syndicated credits. This integration then provides a contrast to the generally insular domestic currency bond markets in the region. Finally, the considerable co-movement in equity prices is interpreted not as a sign of regional integration but rather is ascribed to the common response to common capital flows emanating from shifts in the behavior of global asset managers.

---

<sup>1</sup> The coordinated portfolio investment survey of the IMF is analyzed inter alia by Bae et al. (2006); Eichengreen and Luengnaruemitchai (2006a); Kim, Lee, and Shin (2006); and Lee (2006).

## II. MAJOR CURRENCY DEBT MARKETS

Asian investors already buy Asian issuers' international bonds to a very considerable extent.<sup>2</sup> Similarly, Asian banks already figure very prominently among the participants in internationally syndicated loans for Asian borrowers. Below, evidence is provided for these generalizations. Their implications should be clear from the outset. The debt markets of Asia could become integrated in one way or another. This integration can occur through the vehicles of the major currencies, principally the US dollar. Or integration can occur in the local currencies of Asia. The increasing flexibility of Asian currencies against the US dollar makes the integration through the US dollar in some ways less risky—borrowers are less likely to suffer the illusion of fixity—and it may make such an evolution less likely. But the head start of the dollar markets is considerable. Thus, in many respects, integration through the major currencies can be considered the default option. That is to say, policy needs to recognize the tendency toward integration in the dollar markets and pursue a coherent and disciplined strategy to steer development in another direction.

### A. East Asian Financial Integration in the US Dollar Bond Market

The Republic of Korea's April 1998 \$4 billion dollar bond re-opened the global dollar bond market to East Asian issuers after the trauma of downgrades and defaults during the Asian financial crisis. Spreads on dollar bonds issued by East Asian borrowers narrowed over the following years, creating a favorable backdrop to further issuance. With the current account surpluses and corporate financial surpluses of the period since the crisis, however, issuance in the dollar or indeed in the G3 currency markets has not recovered its pre-crisis importance (Schmidt, 2004).

The ample liquidity of the region—whether viewed from the standpoint of surging national official reserves of foreign currency, low loan-to-deposit ratios in banking systems, or generous corporate cash positions—lay behind what came to be known in the market as the “Asian bid” for Asian bonds. This referred to the importance of Asian investors both in the primary market and in the secondary market. While the former can be measured through the reports by underwriters to issuers of the primary placement of bonds, as described below, the latter cannot be measured. Still, its importance was emphasized by market observers like Fernandez and Li (2002), who ascribed the waning sensitivity of Asian bond market prices in 1999–2002 to developments elsewhere in emerging market bond markets to the readiness of Asian investors to take bonds off the hands of global investors at times of strain. This argument implied that the share of Asian dollar-denominated bonds held in the hands of regional investors tended to rise from the level observed in the initial primary market distribution.

Relying on the commentary about new bond issues in trade periodicals *FinanceAsia*, *Asiamoney*, and *International Financing Review*,<sup>3</sup> McCauley et al. (2002) measured the Asian share of the initial allocations of bonds issued by Asian borrowers from April 1999 to August 2002. Borrowers from China Hong Kong SAR, Indonesia, Korea, Malaysia, the Philippines, Singapore and Taipei, China were included in the sample. The limitation of this approach was its reliance on second-hand reports from underwriters that are at best approximations and the coverage of which is incomplete.<sup>4</sup> It is practically impossible to

<sup>2</sup> This could account for the finding of Eichengreen and Luengnaruemitchai (2006a) that, in some specifications, an Asian dummy enters with a positive coefficient, signalling more holdings of Asian bonds by Asian investors than one would expect from the gravity model of size and distance. See also McCauley and McGuire (2006).

<sup>3</sup> This commentary is not included in the electronic records usually relied on by the BIS for its compilation of international bonds.

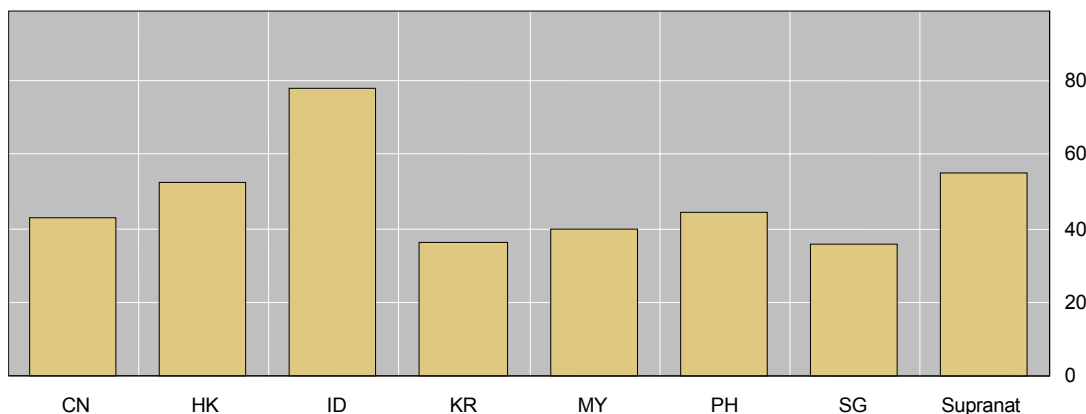
<sup>4</sup> Eichengreen and Park (2005) challenge the reliability of these data, but see Schmidt (2004, p. 5) and the market participants quoted therein: “Asia's moderate new-issue levels were easily mopped up by a massively improved liquidity position in Asia's banking sector. While most immediate post-crisis offerings still saw the traditional price leadership from US investors, an increased number of more recent issues have seen Asian

obtain details of every single bond issue. For the issues covered by the periodicals, the share-by-region figures give a broad geographic split among three regions, namely US, Europe, and Asia, where “Asia” generally refers to East Asia including Japan. Bear in mind that these sources provide an indication of only the primary market allocations; as argued above, however, subsequent trading in the secondary market is likely to move more paper into regional portfolios.

Analysis of 71 bonds found that the average Asian share is 46%, while the average weighted share was slightly lower at 44%. By economy, the Asian share ranged from 35% plus in the case of Korea and Singapore to almost 80% in the case of Indonesia (Figure 1). Thus, it was not unusual for the primary market to feature the following succession of events. An Asian issuer chooses an affiliate of a North American or European firm as book runner,<sup>5</sup> the latter takes the issuer on a roadshow and assembles a syndicate of underwriters, and the underwriters sell about half of the paper to Asian accounts. There are elements of hub and spokes in this scenario, with the funds typically clearing through New York (or in Europe in the case of the euro issues). But at the end of the day, a large portion of the Asian IOUs finds a home in Asian portfolios.

**Figure 1: Regional Purchases of International Bonds Issued by East Asian Issuers, 1999–2002**

Issuer residence along x-axis; shares purchased by Asian investors, in percentages of amounts issued, along y-axis



Note: CN denotes China; HK, Hong Kong, SAR; ID, Indonesia; KR, Korea; MY, Malaysia; PH, the Philippines; SG, Singapore; Supranat, Supranational (e.g., Asian Development Bank).  
 Source: McCauley et al (2002).

What are the characteristics of Asian issues of dollar or euro bonds that led to a larger or smaller initial regional distribution? McCauley et al. (2002) regressed the Asian share on bond rating, size, and maturity, and on dummies for currency and sovereign issuer. Larger

---

participation in excess of 50% on the back of a ferocious appetite from the banking sector as well as rapidly growing asset-management and insurance industries.”

<sup>5</sup> Underwriters of international bonds issued by East Asian borrowers between April 1999 and August 2002 were headquartered by region as follows: North America, 54%; Europe, 29%; and Asia, 17% (7% if HSBC and Standard Chartered are considered European). These observations are consistent with claims that international firms take the leading position in Asian bond deals of Park and Bae (2002) and Eichengreen and Park (2005: 61–68). But even before the introduction of the euro, US firms lead underwrote 54% of international dollar issues by all non-US borrowers (McCauley and White, 1997: 340), suggesting that the US role in Asian issues was not atypical. For the competitive challenge of global underwriters after the introduction of the euro, see Santos and Tsatsaronis (2003).



issues and longer maturity issues were placed outside the region to a larger extent. This maturity effect is consistent with the stronger US demand for bonds of ten or more years' maturity, reflecting the importance of pension funds and insurance companies with long-duration liabilities; it is also consistent with the importance among buyers of dollar bonds in Asia of commercial banks and central banks, with their preference for intermediate-term issues. Almost a fifth more of euro-denominated issues were placed outside the region in Europe, reflecting the limited appetite of central banks for relatively illiquid euro-denominated bonds and the limited penetration of the euro in foreign currency bank deposits in the region. The rating or sovereign status had a weak effect on placement.

Given the regional integration observed in the US dollar bond market for Asian issuers, policymakers should recognize the risk of regional integration through the US dollar market. This is the case in North America, where most Canadian corporate bonds are marketed in US dollars to tap the deep and liquid US bond market (McCauley and Park, 2006). In the context of well-developed derivatives markets, such as catering to the US market may well be benign since it need not create currency mismatches for Canadian firms given the ability of the issuers to swap the liability back into Canadian dollars (and the parallel ability of Canadian institutional investors to swap the US dollar asset back into Canadian dollars). In the current state of development of the Asian derivatives market, corporate issuance in the US dollar or other major markets cannot be regarded as posing little risk. In terms of the competition of the dollar markets, Fernandez and Klassen (2006: 133) find its sharpest edge at longer maturities. "Corporate issuance in local currency is heavily skewed to the very short end. For issuance above five years, foreign-currency bonds are favored over local bonds." Foreign currency issuance also has the edge, albeit a less sharp edge than heretofore, in larger sized offerings: "On average, issue size of local currency issuance is less than half that of foreign currency issuance. It should be noted that, over time... that size gap is narrowing." These observations suggest that policymakers might give particular weight to improving liquidity in Asian local currency bond markets, particularly at the longer maturities.

#### **B. East Asian Financial Integration in the Internationally Syndicated Loan Market**

Ideally, one would like to have a full matrix of banking data for the East Asian economies that one could use to measure the extent of integration of banking markets in the region. Is it true, as has been claimed, that despite the large and growing intra-regional trade, there is no correspondingly large and rapidly growing stock of bank claims, including that associated with the financing of international trade? Unfortunately, the data are not available to the BIS at this point to answer this question fully.<sup>6</sup> An alternative approach is to examine the participation in internationally syndicated loans. Under normal circumstances, syndicated loans represent something like the flows that correspond to the changes in the underlying stocks of bank loans (Gadanecz and von Kleist, 2002).<sup>7</sup>

Banks from East Asia and the Pacific initially provided 40–80% of funds in internationally syndicated loans to borrowers in East Asia (Figure 2). Banks of the same nationality as the borrower typically provided 20% and banks from East Asian economies other than Japan

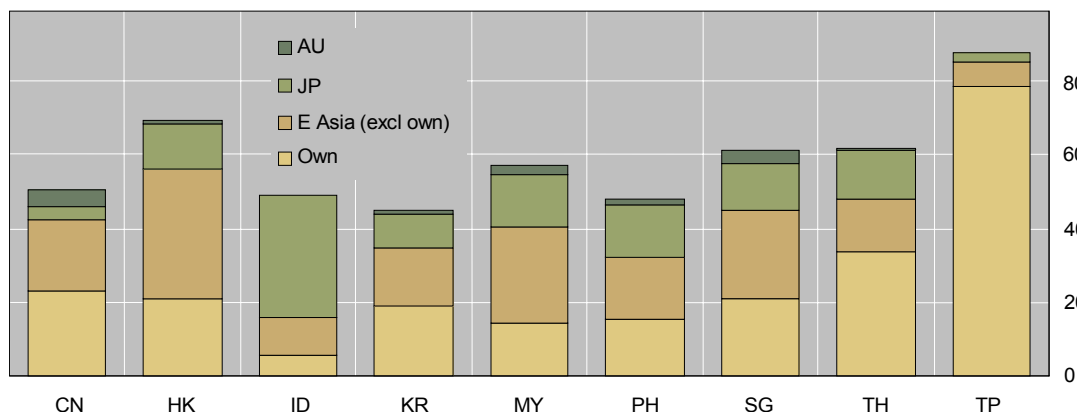
<sup>6</sup> In June 2002, BIS consolidated banking statistics showed that about a fifth of the consolidated international claims of banks in Hong Kong, Singapore; and Taipei, China were on borrowers residing in emerging markets in Asia-Pacific and Hong Kong SAR and Singapore versus 74% against industrial countries. The equivalent percentages for Japanese banks were 9% and 77%. Euro area banks' cross-border claims on the euro area were 45%. See Eichengreen and Park (2004), who supplement the BIS data then available with Korean data to contrast the low level of integration in Asia with that of Europe. Given the rapid integration of the money market in the euro area after the introduction of the euro in 1999, however, it would seem more appropriate to compare the observed integration of banking markets in Asia with that in Europe before 1999.

<sup>7</sup> As with the bonds above, the analysis relies on the primary market distribution. With the growth of loan trading in Asia with standards set by the Asia Pacific Loan Market Association, subsequent secondary market activity may leave a larger share of syndicated loans for regional borrowers in the hands of regional banks.

typically provided another 20% of the funds. Japanese banks accounted for another 13% on average.

**Figure 2: Regional participation in syndicated loans for East Asian borrowers, January 1999 to August 2002**

Borrower residence along x-axis; supply of funds by nationality of banks in percentages along y-axis



Note: Nationality breakdown by ultimate ownership of banks. HSBC and Standard Chartered were considered Hong Kong groups for this exercise. Deals where banks of only one nationality provided funds were excluded from the sample. TP denotes Taipei, China; see Figure 1 for other isocodes.

Sources: Dealogic Loanware; McCauley et al. (2002).

Evidently, the shift from dollar loans to local currency loans in this market stimulated regional financial integration. Internationally syndicated loans, unlike international bonds, are to a significant extent denominated in regional currencies, with US dollar loans amounting to less than half the total. Loans denominated in local currencies attract more regional participation than dollar loans.

Otherwise, the regional share in loan syndicates suggests the importance of credit standing and liquidity. Loans for borrowers assessed more creditworthy feature greater participation of banks headquartered outside the region, as do larger syndicated loans.

Recently, Gadanez and McCauley (2006) updated this analysis for the case of the financing of casinos and related hotels in Macao and Singapore. Asian banks tended to account for 30–50% of the funding, notwithstanding the very limited participation of Japanese banks. Asian shares tended to be higher on linked casino-hotel projects, reflecting constraints on certain Asian banks. The share of Asian banks would have been higher were it not for the marketing of one leveraged loan in the United States through a Delaware financing subsidiary to leveraged loan investors, including insurance companies, mutual funds, hedge funds, and collateralized debt obligations.

In sum, the internationally syndicated credit market for Asian borrowers, like the international bond market for Asian issuers, shows a fairly high level of regional integration. Admitted, the evidence for this conclusion is not up-to-date, but there is little reason to think that much has changed in the distribution patterns in these markets. Where the market has been allowed to use regional currencies, in syndicated credits, even higher levels of regional integration are observed. In contrast, domestic currency bond markets, to which we now turn, have remained relatively local.

### III. ASIAN DOMESTIC CURRENCY BOND MARKETS

Local currency markets in East Asia show very limited integration with each other and highly variable integration with major global markets. A very limited exception to the generalization that East Asian fixed income markets are not integrated with each other is the issuance by the highest rated East Asian names in the Japanese yen bond markets. And, if the scope of the analysis is widened to include East Asia and the Pacific, there is extensive integration of the Japanese and Australian and New Zealand fixed income markets in the form of investment by Japanese investors in Australian and New Zealand dollar-denominated bonds. (At this stage of the exchange rate cycle of the Australian and New Zealand dollars, however, this integration is not altogether comfortable for the receiving countries.) Given the lack of integration in domestic currency bond markets in East Asia, the Asian Bond Fund 2 initiative represents an attempt by the authorities in the region to provide leadership to private market participants.

#### A. Local Bond Markets: Relatively Closed and Variably Responsive to Global Pricing

In contrast to the regionally integrated international bond and syndicated credit markets, most local currency bond markets in East Asia remain quite local affairs.<sup>8</sup> Regional bond markets were characterized as unintegrated by Park and Bae (2002) and Eichengreen and Park (2005). More recently, however, analysis of the matrix of cross-border bond holdings has found evidence of Asian integration (Lee, 2006; Eichengreen and Luengnaruemitchai, 2006a), albeit, unsurprisingly, not as strong evidence as in the euro area.

In all likelihood, the regional integration identified in these recent studies reflects the pattern of ownership of US dollar bonds issued by Asian borrowers, as described above. Evidence for this supposition comes from the US data on foreign bond holdings, which are broken down by currency. US holdings of bonds issued by borrowers in East Asia were denominated in domestic currencies only to the extent of 15% of total holdings despite the fact that the stock of local currency debt far exceeds that of foreign currency debt across Asia (Table 1).<sup>9</sup> Even if the US share of local bonds is lower than that of other holders of Asian bonds, most of the regional integration found in studies of the coordinated portfolio investment survey could reflect US dollar bond holdings.

<sup>8</sup> This assessment of relatively closed local currency bond markets does not take into account the possibility of systematic positioning in them by non-residents through derivatives. Only in Korea can some ongoing measure of such positioning in the Korean Treasury bond futures be taken. Elsewhere positioning in interest rate swaps, cross currency swaps, and longer dated foreign exchange swaps/futures, including nondeliverable ones, generally elude measurement. The results of the April 2007 central bank triennial survey of foreign exchange and derivative market activity will be closely scrutinized for evidence of the development of fixed income derivative markets in the region.

<sup>9</sup> US investment in bonds issued by German or Japanese obligors, by contrast, mostly took place in domestic currencies, with the share of euro and yen holdings, respectively, at two-thirds and three-quarters at end-2005.

**Table 1: US Investors' Holdings of Asia-Pacific Bonds by Currency, End-2005**

	Total	US dollar bonds holdings	Euro, yen, sterling holdings	Local currency holdings*
Australia	48,560	40,851	1,414	6,294
China	1,544	1,508	36	0
Hong Kong	1,731	1,543	3	185
India	473	469	0	4
Indonesia	1,874	1,322	0	552
Korea	8,243	6,690	80	1,474
Malaysia	4,348	3,818	4	526
New Zealand	5,238	2,207	50	2,981
Philippines	4,111	3,993	93	25
Singapore	6,938	5,408	28	1,503
Taipei,China	789	281	386	122
Thailand	1,400	975	0	425
Total	85,249	69,065	2,094	14,091
<i>Memo: Total ex Australia &amp; NZ</i>	<i>31,451</i>	<i>26,007</i>	<i>630</i>	<i>4,816</i>
<i>As a % of total US Asian bond holdings</i>	<i>100%</i>	<i>82.7%</i>	<i>2.0%</i>	<i>15.3%</i>

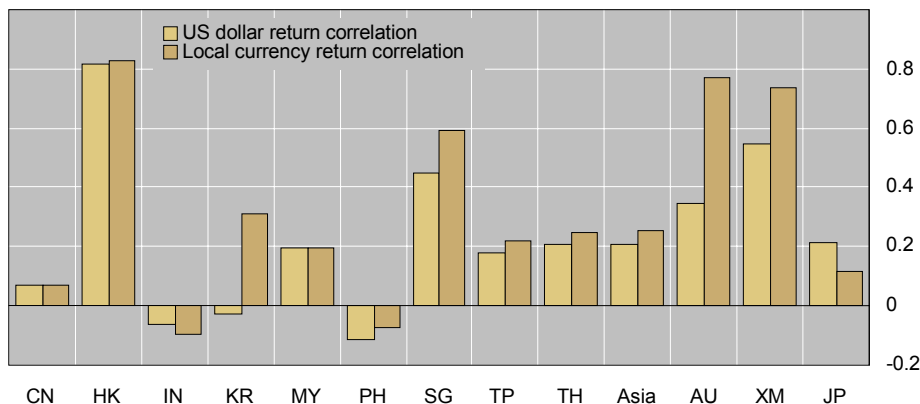
\* Strictly speaking, currencies other than the US dollar, euro, yen, or sterling.

Source: US Treasury et al. (2006: 60–65).

Turning to the correlation of returns, the impression that Asian local currency bond markets are local affairs is reinforced (Figure 3). In the case of China and India, the low or even negative correlation in this sample period reflects the capital controls that effectively limited non-resident investment, as well as a lack of business cycle synchronization. In the case of Indonesia (not included) and the Philippines, idiosyncratic political developments worked in this sample period to lower the co-movement with global markets. The correlations in Korea; Taipei,China, and Thailand are moderate and reflect segmentation arising from withholding taxes and other impediments to cross-border investment (Takeuchi, 2006). Only Hong Kong's and Singapore's bond markets represent the exceptions, showing strong links with major markets as represented by the US Treasury market. (It would be worthwhile to test for co-movement of the idiosyncratic returns in Asian bond markets, with the prior expectation that such co-movement is weak.)

**Figure 3: Returns of Local Currency Bonds and US Treasury Bonds**

Correlation between January 2001 and March 2004<sup>a</sup>



Note: IN denotes India, AU Australia, XM, the euro area, JP, Japan; see Figures 1 and 2 for other isocodes.

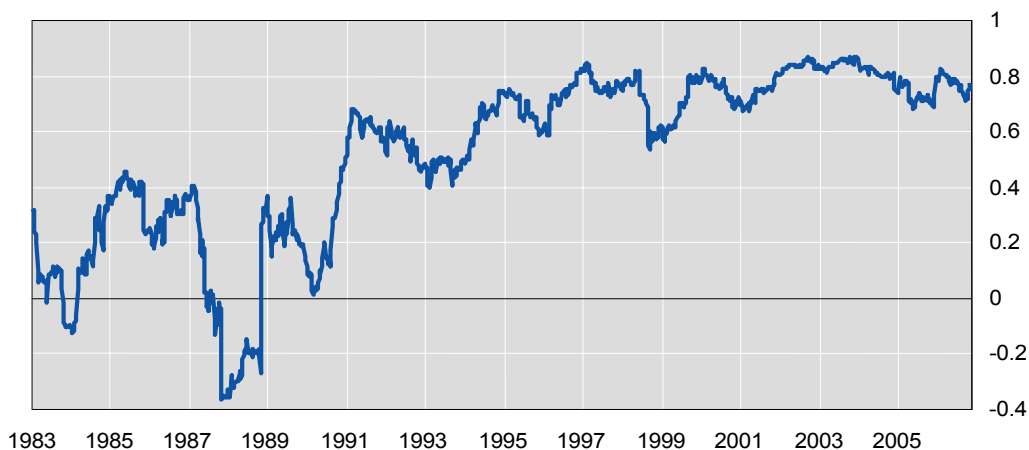
<sup>a</sup> Based on weekly changes in US dollar and local currency returns at Thursday closing for Asia and Wednesday closing for US Treasuries. The period is from January 2001 to March 2004.

Sources: Bloomberg; McCauley and Jiang (2004).

One way of looking at these very different degrees of integration into global bond markets is that the markets in East Asia are at different points along the path taken by the Australian bond market (Figure 4, updating Kortian and O'Regan, 1996). This market went from insularity maintained by capital controls in the early 1980s, through low but highly variable correlation as non-residents began to invest in the domestic market and offshore issues, to the high integration of the late 1990s (McCauley, 2006b). These days most of the movement of bond yields happens between the close of Sydney and its opening the next day; the US employment report is the piece of news that moves the market most (Kearns, 2006). For years the close linkage could be ascribed to business cycle similarity, but this broke down in the early years of this century, while the linkage of the markets remained.

**Figure 4: Correlation of yields on Australia and US 10-year bonds**

Correlation based on weekly changes in government bond yields, rolling window of one year.



Source: McCauley (2006b).

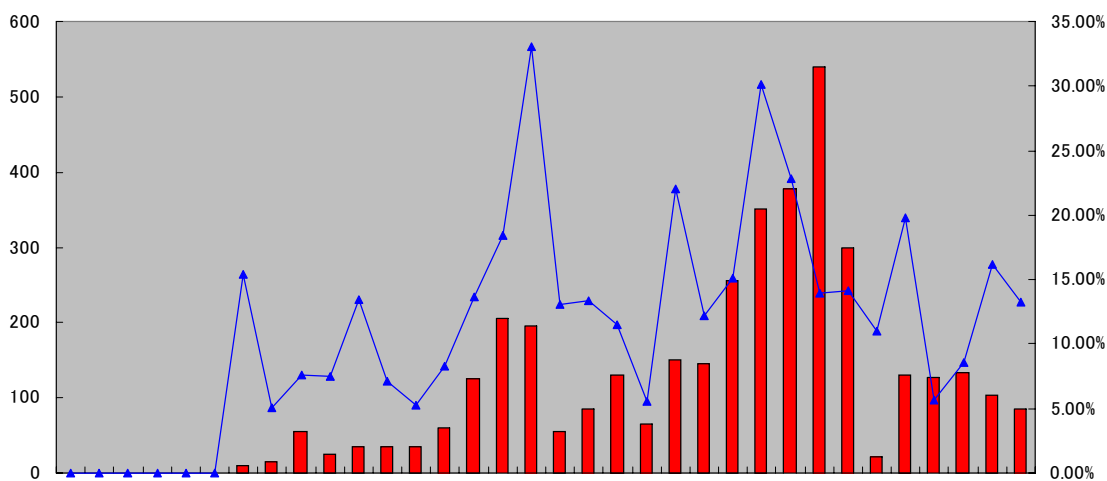
It should be noted, however, that Asian local currency bond markets might not end up as highly correlated with the US dollar bond market as the Australian dollar bond market, or the euro bond market for that matter. The yen bond market has retained a low correlation notwithstanding the deep involvement of foreign banks and securities firms in the market. Although there is some recent evidence of closer linkage of the yen bond market and global bond markets, the record from the mid-1980s into this century, at least, suggests that Asian local markets might not be on the path taken by the Australian bond market.

**B. The Samurai Market**

The yen bond market for East Asian issuers has not contributed as much to regional integration as one might have anticipated given Japan's status as a creditor country. There was a time before the Asian financial crisis when it seemed that Asian issuance in the yen bond market in Tokyo (the so-called Samurai market) might really take off and that this market might develop a strong regional bias. But, as noted by Ogawa (2005), Asian issuance in this market never really recovered from the Asian financial crisis (Figure 5).

**Figure 5: Asian Issuance of Samurai Bonds in the Tokyo Market**

In billions of yen (bars, left hand side) and as a percent of all issuance (line, right hand side)



Source: Nishi and Vergus (2006).

Why is this so? Nishi and Vergus (2006) note that lack of recovery of Asian Samurai issuance reflected the current account and corporate surpluses in the region, as well as the stronger appeal of the euro bond market to regional issuers as compared with that of the predecessor currencies. Still, Asian issuance of US dollar bonds did recover its pre-crisis levels, so the performance of the yen market remains to be explained.

In retrospect, the timing of the elimination of the requirement for an investment grade rating for Samurai issuance in 1996 was unfortunate for the integration of Asian capital markets. This allowed issuance by an Indonesian name and a Hong Kong based securities firm with considerable credit exposure in Indonesia. Their defaults in 1997 left Japanese investors hesitant to buy Asian bonds issued by names other than the best sovereigns or quasi-sovereigns. This hesitation was reinforced by a subsequent default of a Chinese provincial name in 2000, the difficulties of Xerox, and the defaults of Enron in the euroyen market and

Argentina in the Samurai and euroyen markets (Nishi and Vergus, 2006; Schmidt, 2004).<sup>10</sup> The contemporaneous arrival of better-understood sub-investment grade domestic corporate issues allowed a home bias in credit risk. At the same time, Japanese investors drew the conclusion that they understood currency risk if not credit risk. This set the stage for the development of the Uridashi market not only for US dollar bonds but also those denominated in euro and Australian and New Zealand dollars. In short, a manifestation of credit risk at an early stage of Japanese investment into Asian credit all but cut off this channel of Asian capital market integration.<sup>11</sup>

### C. The Uridashi Market for Australian and New Zealand Dollar Bonds

As noted, the revulsion of Japanese investors to regional credit risk has been matched by their embrace of currency risk in the form of high-coupon foreign currency bonds. These have disproportionately included Australian and New Zealand dollar bonds.

A remarkable feature of this integration of Australian and New Zealand dollar bonds into the bonds regularly offered to Japanese investors, particularly households, is that the distributors, and not the issuers, have made the investment in investor education. The issuers act, in the main, purely opportunistically, using their high credit ratings to secure cheap funding as measured against US dollar Libor or euribor. In contrast, the distributors, chiefly the Japanese securities firms, in effect market Australia and New Zealand as well as their currencies to the investors. For instance, the head of the Japanese securities firm's affiliate in Sydney, rather than any issuer, conducts the investor seminars not only in Tokyo but around Japan. Housewives can pose questions about the outlook for interest and exchange rates in the Antipodes.

A question then for the financial integration of Asia then comes into view. Under what circumstances would it make sense for the Japanese securities firms to similarly "invest" in the marketing of an Asian economy and bonds denominated in its currency?

### D. The Asian Bond Fund 2 Initiative

The Asian Bond Fund 2 followed a previous, less ambitious initiative by the same group of East Asian and Pacific central banks. In July 2003 they pooled \$1 billion of their reserves in a fund that purchased US dollar-denominated government and quasi-government bonds issued by eight of the eleven economies involved. If one accepts the argument above that East Asian investors figure prominently among the buyers of US dollar-denominated bonds sold by East Asian issuers, then the first Asian Bond Fund (ABF1) allowed the central banks to catch up with private portfolio managers.<sup>12</sup>

In contrast, the Asian Bond Fund 2 (ABF2) initiative of the Executive's Meeting of East Asia Pacific central banks (EMEAP) can be seen as an effort by officials to lead the markets. For one thing, the initiative flagged a new asset class for global private investors. For another,

<sup>10</sup> Ito (2003, p. 210) described the default of Argentina as a "cold shower."

<sup>11</sup> The liquidity advantage of the US dollar markets may to some extent account for the lack of recovery of issuance by East Asian issuers in the yen markets. For a Japanese life insurer, it may make more sense to buy a Korean dollar bond with an active secondary market and to asset swap it into yen. This is a superior transaction to buying the same issuer's yen bond if the latter would trade with substantially less liquidity. If, for instance, the insurer wanted to take profit on the Korean bond, it might be able to sell the dollar bond and unwind the dollar/yen cross-currency swap at lower cost than selling the yen bond of the same issuer. Schmidt (2004) notes a related disadvantage of the Tokyo market: defaulted issues are worth less because the creditors are left to negotiate one-by-one.

<sup>12</sup> From the standpoint of cooperation among central banks in managing reserves, however, ABF1 can be seen as going beyond practice in the Eurosystem. Although there a much larger sum of reserves are legally pooled, and arrangements exist for a further call to pool still more reserves, day-to-day management of the reserves is housed with the national central banks, although these are constrained to a common benchmark and other limits on discretionary management.

East Asian investors were given the example of official reserve managers' investing in a low-cost indexed product.

If the ABF2 sought to lead market participants, then their response to it merits some analysis.<sup>13</sup> The \$2 billion invested by the central banks was intended to serve as no more than seed money. The aim was to catalyze private investment in bond funds managed against indices created and maintained by a global index provider. While to some extent the value of the project lay in the reforms induced by the process and the force of comparison (EMEAP, 2006; Ma and Remolona, 2005) as well as the habits of cooperation engendered, the private investment drawn to the project offers one metric for the results of the effort.

In assessing the private response to the ABF2, it must be recalled that the opening of the various funds to the public occurred unevenly, in part reflecting the challenges posed by the introduction of an innovative product. Thus, while the Pan-Asia Index Fund was launched in July 2005, individual market funds were subsequently launched over the next nine months in Hong Kong, Korea, Malaysia, Singapore, and Thailand. Then over the period April 2006–March 2007, further public funds were offered in Indonesia and the Philippines. At writing, only the individual market fund for China remains to be offered to the public (Table 2).

**Table 2: Growth of the Asian Bond Fund 2 through March 2007**

	Date opened to private investors	Date listed on stock exchange	Size of fund on 31 March 2007 (millions of US dollars)	Size of fund relative to EMEAP seed money
China			140*	
Hong Kong SAR	17 June 2005	21 June 2005	308	
Indonesia	14 March 2007		33	
Korea	31 July 2005		403	
Malaysia	12 July 2005	18 July 2005	150	
Philippines	21 April 2006		93	
Singapore	26 August 2005	31 August 2005	306	
Thailand	31 March 2006	27 April 2006	135	
Sum of 8 single market funds			1568	157%
Pan Asia Index Fund	29 June 2005	7 July 2005	1545	155%
Total			3113	156%

\* Estimate based on China Asset Management announcement on [www.chinaamc.com/portal/en/second.jsp](http://www.chinaamc.com/portal/en/second.jsp). Sources: HSBC Investments, Ltd., PT Bahana TCW Investment Management, Samsung Investment Trust Management, AmlInvestment Management, Bank of the Philippine Islands, DBS Asset Management, Kasikorn Asset Management, State Street Global Advisors, BIS.

In the 21 months between the Pan-Asia Index Fund's launch on the Hong Kong Stock Exchange and end-March 2007, its 17% total return has drawn private investment. This has

<sup>13</sup> See EMEAP (2006). Treatments by Park (2006, pp. 180–1) and Lejot, et al. (2006) are unreliable.



helped to boost its size to more than half again larger than the original central bank investment. If the 19% growth of the PAIF over the original EMEAP listing through April 2006 was judged “satisfactory” and comparable to that of other bond funds in the region (EMEAP Working Group on Financial Markets, 2006: 3), that 55% growth through March 2007 seems quite respectable.

The PAIF is the ABF2 fund that serves most directly to increase the integration of capital markets in Asia. As it expands, larger sums of local currency bonds are gathered into a single portfolio. Moreover, the origin of the investors other than central banks has also contributed to financial integration. It is said that Japanese institutional investors have been prominent among the investors. A yen-denominated feeder fund for the PAIF has been established in Japan to centralize the currency conversion from yen to US dollars (EMEAP Working Group on Financial Markets, 2006: 22).

The individual funds have also drawn private investors to varying extents. Taking the individual funds as a whole, investment by private investors along with price increases in some cases have boosted the sum of the funds under management to, again, more than half again the scale of the original central bank seed money.

All in all, the ABF2 assets under management have grown from the initial central bank investment of \$2 billion to about \$3.1 billion. Of this growth, \$800 million represents the private sums drawn to the funds. Private funds invested in the ABF2 family of funds could surpass that of the central banks in 2008.

These results should be evaluated against the backdrop of the relative underdevelopment of exchange-traded funds (ETFs) in Asia. These low-fee, listed index products were only introduced into Asia with the sale of the Tracker Fund by the Hong Kong authorities in 2000 (Ho, 2006). By mid-2006, the number of ETFs in Asia had grown to 59, with \$53 billion under management, mostly in Japan. These numbers lagged well behind the equivalent numbers from the United States and even from Europe (Table 3). The diffusion of this financial innovation in Asia has been slowed not only by the Asian preference for safety in bank deposits, on the one hand, and high-risk, high-return investments, on the other (initial public offerings, structured products). In addition, commission-based distribution channels face no incentives to sell these low-fee products. As the EMEAP Working Group on Financial Markets (2006: 21–2) put it,

The initiative has succeeded in bringing an alternative low-cost vehicle relative to what is currently available in each of the eight markets. However, the low-cost structure is a double-edged sword. While a low expense ratio is an attractive feature to investors, it limits the resources available for providing the necessary incentives for distributors to promote this product to the retail investors.

In the United States, financial planners, who, unlike banks or brokers, do not take commissions for the sale of funds to their principals, steer investors to low-cost products like exchange-traded funds. Such planners do not yet figure prominently in Asian investing circles.

**Table 3: The Geographical Distribution of Exchange-Traded Funds**

	US	Europe	Asia	Sum
Number	275	216	59	550
Assets under management (billion US dollars)	344	71	53	468

Sources: Morgan Stanley as cited by Ho (2006: 1).

Thus, the PAIF for now relies on its own performance for its advertisement. The low fees help lift the PAIF on the league tables that are now compiled by the mutual fund performance tracker Lipper and published in the financial press. (This compilation and publication themselves testify to the acceptance by market participants of a new asset class.) Low fees are no guarantee of relative performance if unindexed private managers get it right, at least for a time, and thereby earn their fees. But the PAIF ran well right out of the box.

## Exhibit 1: "Fund Scorecard: Asia Bond Funds"

# FUND SCORECARD

## Asia Bond Funds

Open-end investment funds which are marketed across national borders and invest in fixed interest securities of the Asia-Pacific region (excluding Australia/New Zealand), including funds specializing in single countries. Ranked on % total return (dividends reinvested) in U.S. dollars for one year ending August 03, 2006

### Leading 10 Performers

FUND SIZE*	FUND NAME	FUND MGMT. CO.	LEGAL BASE	% Return in \$US **			
				YTD	1-YR	2-YR	5-YR
1251.5	<b>ABF Pan Asia Bond Inde</b>	State Street Global Advisors Singapore Limited	US Singapore	<b>6.47</b>	6.79	NS	NS
2.5	<b>Intl Opps Asian Bond A</b>	Prudential International Funds (SICAV)	US Luxembrg	<b>1.89</b>	5.16	NS	NS
4.0	<b>ING(L)RF Asian Debt P</b>	ING Investment Management Luxembourg	US Luxembrg	<b>1.29</b>	4.95	5.83	8.86
NA	<b>CAF Asian Income</b>	Credit Agricole Asset Management SA	EU Luxembrg	<b>1.87</b>	4.85	7.37	8.82
305.3	<b>SISF Asian Bd A Acc</b>	Schroder Investment Management (Luxembourg) SA	US Luxembrg	<b>2.51</b>	4.84	6.41	10.12
0.3	<b>Schroder Sel Asian Bd</b>	Schroder Management Services (Luxembourg) SA	YE Luxembrg	<b>2.75</b>	4.51	NS	NS
44.6	<b>Schroder Sel Asian Bd</b>	Schroder Management Services (Luxembourg) SA	US Luxembrg	<b>2.24</b>	4.34	5.92	NS
6.5	<b>CAF Asian Income</b>	Credit Agricole Asset Management SA	US Luxembrg	<b>1.10</b>	4.27	7.13	8.71
17.6	<b>First State Asian Bond</b>	First State Investments (Hong Kong) Ltd	US Ireland	<b>0.79</b>	4.07	7.20	NS
87.4	<b>HSBC Asian Bond A</b>	HSBC Investment Funds (Hong Kong) Limited	US Cayman Isl	<b>0.42</b>	4.06	6.92	7.86

NOTE: Changes in currency rates will affect performance and rankings.

KEY: \* millions of US\$ at latest available month-end

\*\* 2YR and 5YR performance is annualized;

NA-not available due to incomplete data;

NS-fund not in existence for entire period

Source: Lipper, A Reuters Company  
The Reuters Building, South Colonnade  
London E14 5EP, United Kingdom

www.lipperweb.com; Email: lipperclientservices@lipper.reuters.com  
Phone: +44 20 7542 8033; Fax: +44 20 7542 9532

Source: *Wall Street Journal*, 4 August 2006

## Exhibit 2: "Fund Scorecard: Asia Bond Funds"

## FUND SCORECARD

### Asia Bond Funds

Open-end investment funds which are marketed across national borders and invest in fixed interest securities of the Asia-Pacific region (excluding Australia/New Zealand), including funds specializing in single countries. Ranked on % total return (dividends reinvested) in U.S. dollars for one year ending September 27, 2006

#### Leading 10 Performers

FUND SIZE*	FUND NAME	FUND MGMT CO.	CURR. BASE	LEGAL BASE	% Return in \$US **			
					YTD	1-YR	2-YR	5-YR
1270.5	ABF Pan Asia Bond Inde	State Street Global Advisors Singapore Limited	US	Singapore	9.32	11.74	NS	NS
3.9	Int'l Opps Asian Bond A	Prudential International Funds (SICAV)	US	Luxembrg	4.79	7.28	NS	NS
0.1	Int'l Opps Asian Bond F	Prudential International Funds (SICAV)	SI	Luxembrg	4.62	7.21	NS	NS
6.1	ING(L)RF Asian Debt P	ING Investment Management Luxembourg	US	Luxembrg	4.32	6.75	5.96	9.25
NA	CAF Asian Income	Credit Agricole Asset Management SA	EU	Luxembrg	4.16	6.60	6.81	8.84
280.3	SISF Asian Bd A Acc	Schroder Investment Management (Luxembourg) SA	US	Luxembrg	5.22	6.24	6.49	10.56
84.7	HSBC Asian Bond A	HSBC Investment Funds (Hong Kong) Limited	US	Cayman Isl	3.40	6.12	6.67	7.99
NA	ING(L)RF Asian Debt SG	ING Investment Management Luxembourg	SI	Luxembrg	3.62	6.07	NS	NS
16.9	First State Asian Bond	First State Investments (Hong Kong) Ltd	US	Ireland	3.95	6.01	6.50	NS
34.6	Schroder Sel Asian Bd	Schroder Management Services (Luxembourg) SA	US	Luxembrg	5.00	5.88	NS	NS

NOTE: Changes in currency rates will affect performance and rankings.

KEY: \* millions of US\$ at latest available month end

\*\* 2YR and 5YR performance is annualized;

NA-not available due to incomplete data;

NS-fund not in existence for entire period

Source: Lipper, A Reuters Company  
The Reuters Building, South Colonnade  
London E14 5EP United Kingdom

www.lipperweb.com; Email: lipperclientservices@lipper.reuters.com  
Phone: +44 20 7542 8033; Fax: +44 20 7542 9532

Source: *Wall Street Journal*, 28 September 2006

### E. Summing Up

In sum, fixed income markets for Asian issuers stand at two extremes. At one end is a well-integrated US dollar bond market that features East Asian buyers of East Asian bonds to a considerable extent. At the other extreme are the local currency bond markets of Asia that remain very local affairs. That internationally syndicated loan markets in some local currencies also bring together Asian borrowers and lenders point to the possibility of more integrated domestic currency bond markets. For now, the central banks in the region have tried to narrow the gap between these extremes. They have helped to define Asian local currency bonds as an asset class and led by example by working with market participants to set up cost-effective vehicles for gaining exposure to this asset class.

## IV. EQUITY MARKETS

Equity markets in East Asia are generally highly integrated into the global equity market. US and European investors bulk large among the foreign holders of East Asian equities (Table

4). Japanese investors have not been prominent. Other East Asian investors, mostly in Hong Kong and Singapore, hold about 10% of foreign-held East Asian shares.

It is interesting but not informative to learn that the regional integration of equity markets in Asia lags behind that of Europe (Lee, 2006). While the single currency had its most immediate and dramatic effect on cross-border bank flows as a euro-area-wide interbank market sprang into being, it also had an important effect on the construction of European equity portfolios. In the absence of currency risk, portfolio managers shifted from allocating by country and then by industry in Europe to simply allocating by industry (Tsatsaronis, 2001; Fratzscher, 2001; Adjaouté and Danthine, 2002). It is interesting but hardly surprising that Asia falls short of the capital market integration of post-euro Europe. It would be more informative to learn whether Asia falls short of the capital market integration of pre-euro Europe.

**Table 4: Foreign Equity Holdings in East Asia, End-2003**

Millions of US dollars

Host	United States	Europe	Japan	East Asia including Japan	Total	<i>Memo: % of host GDP</i>
China	13,064	8,944	2,094	19,625	45,788	3.2
Hong Kong	36,210	35,223	5,594	7,901	92,889	59.3
Indonesia	4,406	2,542	89	922	12,597	6.0
Japan	255,496	175,975	—	5,569	493,763	11.5
Korea	49,121	27,702	708	3,579	92,822	15.3
Malaysia	4,075	4,862	296	3,258	14,544	14.0
Philippines	1,634	683	158	325	3,027	3.8
Singapore	21,932	12,579	1,280	4,096	42,857	46.9
Thailand	6,477	6,746	393	4,759	21,291	14.9
Total	392,415	275,256	10,612	50,034	819,578	
Total ex JP						
as host	136,919	99,281	10,612	44,465	325,815	
<i>Memo: %</i>	42.0%	30.5%	3.3%	13.6%	100.0%	

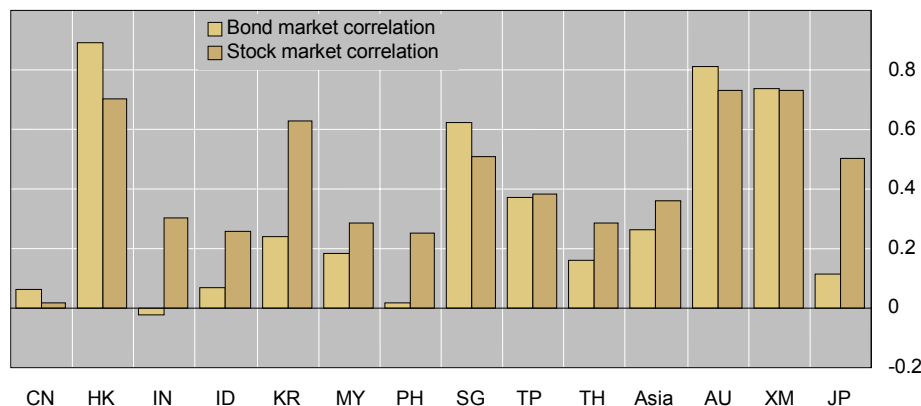
Note: Europe comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. East Asia comprises the named economies.

Sources: Lee (2006: 32), based on IMF Coordinated Portfolio Investment Survey.

One important development in the past several years that has tightened capital market integration in the region is the outflow of Japanese savings into equity securities in the region. China and India have both been major recipients. At the end of 2006, the Japanese external assets included ¥2.4 trillion in Hong Kong-dollar-denominated equities, much of which can be assumed to be H shares of Chinese firms. This represents a substantial rise from the sum of ¥1.5 trillion in the previous year (and the less than ¥0.3 trillion shown on Table 4 for 2003).

A comparison of equity and local currency bond correlations with the US market gives evidence of the global integration of the Asian equity markets (Figure 6).<sup>14</sup> Apart from Hong Kong and Singapore, the equity correlations are higher. The idiosyncratic political events during this period in Indonesia and the Philippines did not prevent moderate correlations between the local stock markets and global stock markets. Neither did the limits on non-resident purchases of Indian equities keep their price changes from echoing global movements. Only China's A share market was as hermetic as its bond market.

**Figure 6: Bond and Stock Market Correlations with the US Markets<sup>a</sup>**



Note: For an explanation of the country codes, please refer to Figures 1, 2 and 3.

<sup>a</sup> Bond market correlation is based on weekly changes in benchmark yields at Thursday closing for Asia and Wednesday closing for US Treasuries. Stock market correlation is based on weekly changes in stock market price indices at Thursday closing for Asia and Wednesday closing for the S&P 500. The period is from January 2001 to March 2004.

Sources: Bloomberg; McCauley and Jiang (2004).

Capital flows, mostly from outside the region, play a role in producing these correlations. Chai-anant and Ho (2007) confirm findings of earlier studies that non-residents generally buy into rising regional markets and sell into falling ones. They also find that inflows push up currencies and outflows push down currencies. Their further finding that net equity flows show strong co-movement across six Asian equity markets suggests that equity capital flows may subject Asian economies to common shocks, leading at times to common policy responses. If foreign investors chase returns in regional equity markets, and affect currency values in the process, some further thinking is required on the procyclical nature of the international risk sharing implied by the substantial global holdings of Asian equities. In a regional downturn, global investors may not accept their share of the poor harvest, as they do in a textbook, but instead may demand that regional markets provide the liquidity for their exit.

## V. CONCLUSION

This review has contrasted the East Asian integration in the international bond and syndicated loan markets with the generally closed local currency bond markets. The risk is that the US dollar capital markets for East Asia build on their early lead and end up serving as the predominant node for intraregional flows, despite evolving exchange rate policies pointing toward a smaller role for the US dollar as anchor currency (Ho et al., 2005).

<sup>14</sup> Compare Oh et al., 2004.

Fortunately, Asian issuers have tended to favor domestic currency bond issuance in recent years. Still, the eclipse of the Samurai market as a source of funding for a broad range of Asian credits serves as a warning. At the same time, the willingness of Japanese investors to take on the currency risk of the Australian and New Zealand dollars offers hope that capital can flow within the region without the conduit of an extra-regional currency.

The largely global integration of regional equity markets highlights the risk of opening bond markets to global investors if regional investors remain sidelined in domestic assets. Without a substantial regional bid for equities, investors in individual economies can end up bearing the brunt alone of selling by global investors, whether resulting from a sell-off in the local or global equity markets or a change in the risk environment.

**References**

- Adjaouté, Kpate, and Jean-Pierre Danthine. 2002. European Financial Integration and Equity Returns: A Theory-Based Assessment. Paper prepared for the Second ECB Central Banking Conference on "The Transformation of the European Financial System," 24–25 October, Frankfurt-am-Main.
- Arner, Douglas, Jae-Ha Park, Paul Lejot, and Qiao Liu. 2006. Asia's Debt Capital Markets: Prospects and Strategies for Development. The Milken Institute Series on Financial Innovation and Economic Growth, Volume 6. New York: Springer.
- Bae, Kee-Hong, Warren Bailey, and Young-Sup Yun. 2006. Determinants of Bond Holdings by Foreign Investors. In *Asian Bond Markets: Issues and Prospects*, BIS Paper No. 30 (November): 102-128.
- Bank for International Settlements. 2005. *The Triennial Survey: Foreign Exchange and Derivative Markets Activity in 2004* (March).
- Burger, John D., and Francis E. Warnock. 2006. Foreign Participation in Local Currency Bond Markets. NBER Working Paper No. 12548, September.
- Cairns, John, Corrinne Ho, and Robert N. McCauley. 2007. Exchange Rates and Global Volatility: Implications for Asia-Pacific Currencies. *BIS Quarterly Review*, March: 41–52.
- Chai-anant, Chayawadee, and Corrinne Ho. 2007. Understanding Asian Equity Flows, Market Returns and Exchange Rates. BIS draft, May.
- Cheung, Yin-Wong, Menzie D. Chinn, and Eiji Fujii. 2003. A Price-Based Assessment of Economic Integration: The Implications for Monetary Arrangements in East Asia. In *Financial Development and Integration in East Asia*, edited by Choong Yong Ahn, Takatoshi Ito, Masahiro Kawai, and Yung Chul Park. Seoul: Korean Institute for International Economic Policy and the Policy Research Institute, Ministry of Finance, Japan.
- Cowen, David, Ranil Salgado, Hemant Shah, Leslie Teo, and Alessandro Zanello. 2006. Financial Integration in Asia: Recent Developments and Next Steps. IMF Working Paper 06/196, August.
- De Brouwer, Gordon. 1999. *Financial Integration in East Asia*. Cambridge: Cambridge University Press.
- Eichengreen, Barry, and Pipat Luengnaruemitchai. 2006a. Bond Markets as Conduits for Capital Flows: How Does Asia Compare? NBER Working Paper No. 12408.
- Eichengreen, Barry, and Pipat Luengnaruemitchai. 2006b. Why Doesn't Asia Have Bigger Bond Markets? In *Asian Bond Markets: Issues and Prospects*, BIS Paper No. 30 (November): 40–77.
- Eichengreen, Barry, and Yung Chul Park. 2005. Financial Liberalization and Capital Market in East Asia. In *A New Financial Market Structure for East Asia*, edited by Takatoshi Ito, Yung Chul Park, and Yun Jong Wang. Cheltenham: Edward Elgar.
- Eichengreen, Barry, and Yung Chul Park. 2004. Why Has There Been Less Financial Integration in Asia than in Europe? Monetary Authority of Singapore Staff Paper No.



- 28, February. Also in *A New Financial Market Structure for East Asia*, edited by Takatoshi Ito, Yung Chul Park, and Yun Jong Wang. Cheltenham: Edward Elgar, 2005.
- EMEAP Working Group on Financial Markets. 2006. *Review of the Asian Bond Fund 2 Initiative*. June <http://www.emeap.org/ABF/ABF2ReviewReport.pdf>.
- Fernandez, David, and Simon Klassen. 2006. Choice of Currency by East Asia Bond Issuers. In *Asian Bond Markets: Issues and Prospects*. BIS Paper No. 30 (November): 129–142.
- Fernandez, David, and Amy Li. 2002. Asian Dollar Bonds: In a Class by Themselves. In *Asian Credit Markets Research: Asia Markets Outlook and Strategy*, J.P. Morgan Chase. 19 September.
- Fratzscher, M. 2001. Financial Market Integration in Europe: On the Effects of EMU on Stock Markets. European Central Bank Working Paper No 48.
- Gadanesz, Blaise, and Robert N. McCauley. 2006. Leveraged Loans and Asian Financial Integration: The Case of Casino Financing. *BIS Quarterly Review*, December: 21.
- Gadanesz, Blaise, and Karsten von Kleist. 2002. Do Syndicated Credits Anticipate BIS Consolidated Banking Data? *BIS Quarterly Review*, March: 65–74.
- Garcia-Herrero, Alicia, and Philip Wooldridge. 2007. Global and Regional Financial Integration: Progress in Emerging Markets. *BIS Quarterly Review*, September: 57–70.
- Ho, Corrine, Guonan Ma, and Robert N. McCauley. 2005. Trading Asian Currencies. *BIS Quarterly Review*, March: 49–58.
- Ho, Joseph, 2006. Myths and Facts about Exchange Traded Funds. *AsianInvestor*, November.
- Hohensee, Martin, and Kyungjik Lee. 2006. A Survey of Asian Hedging Markets: A Description of Asian Derivatives Markets from a Practical Perspective. In *Asian Bond Markets: Issues and Prospects*. BIS Paper No. 30 (November): 261–281.
- International Monetary Fund. 2005. Rewards and Challenges from Asia's Financial Integration. Background paper for the First High-Level Seminar on Asian Financial Integration, September. Singapore.
- Ito, Takatoshi. 2003. Construction of Infrastructures for the Development of Regional Bond Market. In *Financial Development and Integration in East Asia*, edited by Choong Yong Ahn, Takatoshi Ito, Masahiro Kawai, and Yung Chul Park. Seoul: Korean Institute for International Economic Policy and the Policy Research Institute, Ministry of Finance, Japan.
- Jiang, Guorong, and Robert N. McCauley. 2004. Asian Local Currency Bond Markets. *BIS Quarterly Review*, June: 67–79.
- Kearns, J. 2006. Asset Prices and Monetary Policy in Australia: The Contrast of Bonds and Housing. Paper presented to the BIS Autumn Central Bank Economists' Meeting (October).

- Kim, Soyoung, Sugho Yun H. Kim, and Yunjong Wang. 2006. Financial Integration and Consumption Risk Sharing in East Asia. *Japan and the World Economy* 18, December: 143–157.
- Kim, Soyoung, Jong-Wha Lee, and Kwanho Shin. 2006. Regional and Global Financial Integration in East Asia. Mimeo, Korea University, May.
- Kortian, T., and J. O'Regan. 1996. Australian Financial Market Volatility: An Exploration of Cross-Country and Cross-Market Linkages. Reserve Bank of Australia *Research Discussion Paper* No. 9609.
- Kuroda, Haruhiko. 2003. Overview of Financial and Monetary Cooperation in East Asia. In *Financial Development and Integration in East Asia*, edited by Choong Yong Ahn, Takatoshi Ito, Masahiro Kawai and Yung Chul Park. Seoul: Korean Institute for International Economic Policy and the Policy Research Institute, Ministry of Finance, Japan.
- Kuroda, Haruhiko, and Masahiro Kawai. 2003. Strengthening Regional Financial Cooperation in East Asia. Policy Research Institute, Ministry of Finance of Japan, Working Paper, May.
- Lane, R. Philip. 2000. International Investment Positions: A Cross-Sectional Analysis. *Journal of International Money and Finance* 19: 513–5.
- Lee, Jong-Wha. 2006. Patterns and Determinants of Cross-Border Financial Asset Holdings in East Asia. Mimeo, Korea University, May.
- Lejot, Paul, Douglas Arner, and Qiao Liu. 2006. Policy Concerns and the Value of Regional Markets. In *Asia's Debt Capital Markets: Prospects and Strategies for Development, The Milken Institute Series on Financial Innovation and Economic Growth*, Volume 6, edited by Douglas Arner, Jae-Ha Park, Paul Lejot and Qiao Liu. New York: Springer.
- Leung, Julia. 2006. Developing Bond Markets in Asia: Experience with ABF2. In *BIS Paper No. 26, Developing Corporate Bond Markets in Asia*, February: 74–79.
- Ma, Guonan, Corrinne Ho and Robert N. McCauley 2004 “The Markets for Non-deliverable Forwards in Asia,” *BIS Quarterly Review*, June. 81–94
- Ma, Guonan, and Eli M. Remolona. 2005. Opening Markets through a Regional Bond Fund: Lessons of ABF2. *BIS Quarterly Review*, June: 81–92.
- McCauley, Robert N. 2006a. Consolidating the Public Bond Markets of Asia. In *Asian Bond Markets: Issues and Prospects*. BIS Paper No. 30 (November): 82–98.
- McCauley, Robert N. 2006b. Internationalising a Currency: The Case of the Australian Dollar. *BIS Quarterly Review*, December: 41–54.
- McCauley, Robert N., San-Sau Fung, and Blaise Gadanecz. 2002. Integrating the Finances of East Asia. *BIS Quarterly Review*, December: 83–95. Also Appendix 1 in *Asia's Credit Markets: From High-Yield to High Grade*, by Florian H. A. Schmidt. Wiley: Singapore, 2004.
- McCauley, Robert, and Guorong Jiang. 2004. Diversifying with Asian Local Currency Bonds. *BIS Quarterly Review*, September: 51–66.

- McCauley, Robert N. and Patrick McGuire. 2006. Box: Crossborder Investment in Asian Bonds: Banks and All Investors. In *Asian Bond Markets: Issues and Prospects*. BIS Paper No. 30 (November): 29–32.
- McCauley, Robert N., and Yung Chul Park. 2006. Developing the Bond Markets of East Asia: Global, Regional or National? In *Asian Bond Markets: Issues and Prospects*, BIS Paper No. 30 (November): 19–39.
- Mercereau, Benoît. 2005. Financial Cooperation and Integration in Asia: The Risk-Sharing Gains for Australia and Other Countries. IMF Selected Issues paper SM/05/300.
- Nishi, Fumiaki, and Alexander Vergus. 2006. Asian Bond Issues in Tokyo: History, Structure and Prospects. In *Asian Bond Markets: Issues and Prospects*, BIS Paper No. 30 (November): 143–167.
- Ogawa, Eiji. 2005. Tokyo Financial Market as a Financial Center in East Asia. In *A New Financial Market Structure for East Asia*, edited by Takatoshi Ito, Yung Chul Park, and Yun Jong Wang. Cheltenham: Edward Elgar.
- Oh, Yonghyup, Jongkyou Jeon, and Doo Yong Yang. 2004. Financial Market Integration in East Asia: A Stock Market Perspective. In *Financial Interdependence and Exchange Rate Regimes in East Asia*, edited by Masahiro Kawai. Proceedings of a seminar at the Policy Research Institute, 3-4 December. Korea Institute for International Economic Policy and Policy Research Institute, Ministry of Finance, Japan.
- Park, Yung Chul. 2006. *Economic Liberalization and Integration in East Asia: A Post-Crisis Paradigm*. Oxford: Oxford University Press.
- Park, Yung Chul, and Kee-Hong Bae. 2002. Financial Liberalization and Economic Integration in East Asia. Paper presented to PECC Finance Forum Conference, “Issues and Prospects for Regional Cooperation for Financial Stability and Development”, Honolulu, 11–13 August.
- Poonpatpibul, Chaipat, Surach Tanboon, and Pornnapa Leelapornchai. 2006. The Role of Financial Integration in East Asia in Promoting Regional Growth and Stability. Bank of Thailand Symposium 2006 paper, August.
- Santos, J. and Kostas Tsatsaronis. 2003. The Cost of Barriers to Entry: Evidence from the Market for Corporate Euro Bond Underwriting. BIS Working Paper No. 134.
- Sussangkarn, Chalongphob, and Pakorn Vichyanond. 2007. Directions of East Asian Regional Financial Cooperation. *Asian Economic Papers* 5 (3), January: 25–55.
- Schmidt, H. A. Florian. 2004. *Asia’s Credit Markets: From High-Yield to High Grade*. Singapore: Wiley.
- Takeuchi, Atsushi. 2006. Identifying Impediments to Cross Border Bond Investment and Issuance in Asian Countries. In *Asian Bond Markets: Issues and Prospects*. BIS Paper No. 30 (November): 246–260.
- Tsatsaronis, Kostas. 2001. Market Practice Ahead of Institutional Structures in Pricing Euro Area Equities. *BIS Quarterly Review*, March: 13–14.

US Treasury, Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System. 2006. *Report on U.S. Portfolio Holdings of Foreign Securities, as of December 31, 2005.*