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Inadequate Regional Financial Safety Nets Reflect Complacency

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Abstract

To the extent that financial contagion from the United States and the euro area crisis has occurred in Asia, this paper focuses on the importance of strengthening the regional financial safety nets. By conjecturing that efforts to prevent and manage a crisis are the essence of providing such safety nets, I argue that efforts made by ASEAN+3 officials, especially in the provision of liquidity support during a crisis, are far from adequate. The collapse of Lehman Brothers in the autumn of 2008 could be a game-changer in the global financial market, making the probability of financial contagion higher than ever before. Even with improved financial conditions and stronger regulations in ASEAN+3 member countries, contagion can and will strike. Making the Chiang Mai Initiative Multilateralization more effective is therefore urgent and critical.

JEL Classification: F15, F32, F33

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1. INTRODUCTION

Any country is vulnerable to financial channels of a crisis, even if the crisis is occurring elsewhere. Developing an effective financial safety net is hence necessary, and this applies to Asia as elsewhere. As the recent euro area crisis has shown, banks' deleveraging could have an impact on credit supply and asset prices in Asia. Shrinking trade finance affects the real sector by disrupting trade activities, and capital flows can reverse quickly, even from countries with sound macroeconomic and financial conditions. Such reversals can knock over equity and capital markets, especially where foreign investors have traditionally played a significant role, as is the case in Asia.[1]

Monetary and fiscal policy can help mitigate the impact and restore the fiscal space lost after the 2008 crisis. Yet, such old playbook (e.g., lowering interest rate, improving credit access, streamlining tax payments to support larger spending) is no longer adequate and has a limit. A more important lesson is the need to have a robust financial safety net, including accumulating enough foreign reserves (self-defense). Recent experience has also shown that maintaining sufficient liquidity is key for the economic engine to continue running. Vulnerabilities can be reduced by securing credit lines, lengthening debt maturities, and securing currency swap.

But domestic safety nets alone may not be sufficient, even for resilient Asia. If contagion effects are so severe, markets may react indiscriminately. Many suggest that Asia is strong enough to weather the euro area crisis—Asia's house of cards is unlikely to fall, so they say. But something unusual does not mean it is unlikely to happen. British novelist P.G. Wodehouse once remarked: "never confuse the unusual with the impossible." Witness the robust macroeconomic conditions prior to 1997 which failed to prevent the Asian financial crisis. In Europe, before 2008, no one had imagined that euro area countries would suffer in the way they do now. This is where the safety net provided by regional financial arrangement (RFA) will play an important role. To the extent that, in an interconnected financial system, the probability of spillover effects is high, and the global nature of most crises calls for coordinated policy response, the safety net provided by RFA can be complementary to domestic and global financial reform in responding to system-wide shocks.[2]

Using the case of RFA in the Association of Southeast Asian nations (ASEAN)+3,[3] I argue that the effectiveness of the region's RFA has so far been limited. Its accomplishment has not been as originally expected. This is despite the gradual progress and positive statements made by officials in various meetings. Much of the safety net is provided by national resources. When domestic problems arise, this can put the region's finance sector at risk.

2. ASIA'S FINANCIAL ARRANGEMENT AND SAFETY NET

The role of RFA is to provide crisis resolution (insurance-like) facilities that could be available at very short notice. By providing a swap line, for example, RFA can help overcome temporary

[1] Many Asian countries have sizeable exposures to European banks through loan syndication, wholesale funding, and trade credit lines.

[2] For the relationship between regional financial arrangement and the International Monetary Fund (IMF), see Eichengreen (2012).

[3] ASEAN+3 is the 10 countries of ASEAN (Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam) plus the People's Republic of China (PRC), the Republic of Korea, and Japan.

liquidity problems as well as create confidence in the market. RFA can also influence and has the capacity to catalyze private lending through agreed policy frameworks. In the absence of an RFA, the central bank is the one to provide short-term liquidity. But the capacity of a central bank to do so is constrained by the size of the foreign reserves it holds, and by the unintended consequences of its action.

Since the likelihood of crisis contagion and spillover effects of a unilateral domestic policy response can be large, and international financial institutions such as the International Monetary Fund (IMF) has its own constraints, RFA emerges as an alternative. Through risk pooling, RFA can also help address idiosyncratic shocks that hit an individual economy. Thus, RFA can play its part as a central pillar in providing a regional financial safety net.

But that is an ideal scenario. The truth is that RFA in Asia is far from that ideal. The region's efforts—which so far include the Asian Bond Market Initiative (ABMI), the Credit Guarantee Investment Facility (CGIF), the Chiang Mai Initiative Multilateralization (CMIM), and the recently established ASEAN+3 Macroeconomic Research Office (AMRO)—still have a long way to go before there will be meaningful financial cooperation.[4] Before elaborating on this issue, let me first discuss the background and progress of these regional institutions and initiatives.

2.1 Asian Bond Market Initiative and the Credit Guarantee Investment Facility

Based on discussion in 2003, the objective of the ABMI was to develop local currency bond markets in Asia in order to prevent recurrence of financial crisis by reducing double mismatches and recycling regional savings within the region.[5] There was a clear intention to do away with short-term borrowing in foreign currency, a widespread practice that led to the Asian financial crisis in 1997.

The ABMI's first road map, set up in 2008, addressed issues related to supply, demand, regulation, and market infrastructure, for which four task forces were formed. One of the important outcomes of this was the establishment of the CGIF in 2010. Another one was the launching of the Asian Bond Market Forum (ABMF), announced during the meeting in Tashkent, Uzbekistan in May 2010. The ABMF was meant to be a common platform to pursue standardization of market regulation and practices, believed to be an important factor for regional integration.[6] Other ideas, including establishing a regional settlement institute and strengthening the region's credit rating system, have not gone far.

At the 15th ASEAN+3 Finance Ministers and Central Bank Governors' Meeting on 3 May 2012 in Manila, authorities agreed to adopt the New Roadmap+ and to set nine priorities, including

[4] Although the development of regional bond market through the ABMI is more for crisis prevention and is not part of a regional financial safety net per se, crisis prevention and crisis resolution are in practice closely linked. This fact also guided the ASEAN+3 finance ministers and central bank governors in May 2012 to combine the CMIM with a crisis prevention facility named the CMIM Precautionary Line.

[5] In the earlier stage, there were four working groups to discuss specific issues: new securitized debt instruments (led by Thailand), a credit guarantee and investment mechanism (Republic of Korea and the PRC), foreign exchange transactions and settlement issues (Malaysia), and rating systems and dissemination (Singapore and Japan).

[6] The ABMF activities began by, among other things, comparing regulations and market practices in different countries in the region. It is expected that the assigned subgroup will produce comprehensive market guides to fill information gaps. The market guide will provide investors and other market participants with a complete set of information and guide on key aspects of bond markets in the region.

launching CGIF guarantee programs, enhancing financial access to consumers and small and medium-sized enterprises, and strengthening the foundation for a regional credit rating system.

When the CGIF was established in May 2010, ASEAN+3 officials requested the Asian Development Bank (ADB) to help. For this purpose, ADB set up a trust fund with an initial capital of $700 million (ADB contributed $130 million as paid-in capital). The main function of the CGIF is to provide credit enhancement to allow the region's marginal issuers to issue local currency bonds, and larger issuers to issue across national borders by overcoming the sovereign credit ceiling.[7] While the CGIF could develop as an investment facility in the future, and the ABMF has published the ASEAN+3 Bond Market Guide, it remains to be seen how this will help strengthen the regional bond market to make it deeper and more efficient through greater cross-border bond issuance and investment in local currency.[8]

Many ABMI meetings have taken place, improvements have been made, and new ideas and proposals have been discussed. A decade after its inception, questions are raised about the effectiveness and the accomplishments of this initiative.

Since 2003, more countries have issued more bonds with lengthened maturity, not only for their financing need and fiscal stimulus during the crisis, but also for setting a benchmark yield curve for corporate bonds.[9] Yield curves tend to get flatter and shift downward as authorities in Asia soften monetary policy in response to the likely impact of the euro area crisis. Rules to facilitate bond issuance are issued, including for issuance by revenue-generating sectors such as local government and public utilities (e.g., in the People's Republic of China [PRC], Indonesia, the Philippines, and Viet Nam), resulting in a growing number of participating issuers. Some countries, notably Thailand and Malaysia, allow foreigners to issue local currency bonds onshore and make the procedure easier for them. As a result, foreign ownership markedly increased.[10] It should be noted, however, that the recent inflows of foreign funds are largely due to uncertainty in the global economy and increased market volatility, implying that Asia is seen as a safe haven by most investors.

[7] ADB listed in the Tokyo Pro-Bond market as a pilot project. At the time of writing, over 95% of the CGIF paid-in capital has been remitted to the CGIF trustee, which has authorized the Treasury Department to manage on behalf of the CGIF for a fee of 10 basis points. The Chief Economic Officer and Chief Risk Officer commenced their employment in October 2011.

[8] Aside from the CGIF, three possible areas are studied for future cooperation: (i) infrastructure financing, (ii) disaster risk insurance, and (iii) using local currencies for regional trade settlement. One of the sticking issues on infrastructure financing is whether to increase the resources for multilateral institutions to provide significantly larger lending for infrastructure, or to establish a new mechanism to channel resources for infrastructure development.

[9] Many ASEAN+3 countries have developed a benchmark yield curve for corporate bonds over the past few years. They have also changed the tenor of benchmark bond issuance to match the market demand. For example, Thailand has changed the tenor of benchmark bond issuance from 7–10 years to 5–10 years, and has issued government bonds with 30 years maturity. Indonesia has also issued government bonds with a similar maturity.

[10] Under its Medium-Term Note Program, ADB has issued local-currency-denominated bonds in a few ASEAN+3 countries using common disclosure standards and terms and conditions governed by a common law as steps towards the harmonization of these standards. To date, ADB has issued $673.2 million under its Asian Currency Note program in Singapore and Hong Kong, China. It is also worth noting that ASEAN+3 requested ADB, through its Office of Regional Economic Integration, to review the progress made under the 2008 road map and agreed to adopt the New Roadmap+. The Republic of Korea made a proposal to broaden the scope of the ABMI to include other capital markets, and it was agreed that the ABMI will only facilitate, and not necessarily accelerate, the establishment of a regional settlement intermediary (RSI).

Corporate bonds are also growing steadily, in some cases even faster than the growth of government bonds.[11] In the PRC, the Republic of Korea, and Malaysia the corporate bond markets have exceeded the Bank for International Settlements (BIS) threshold for a "deep and liquid market" ($100 billion). To strengthen the role of micro, small, and medium-sized enterprises, some governments encourage the financing of these activities through bond issuance. Also, selected local governments in the PRC (Shanghai, Zhejiang, Jiangsu, and Guangdong provinces) are allowed to issue up to CNY25 billion in bonds divided equally into 3-year and 5-year tenor.

Some countries have also made improvements in institutional arrangements by strengthening corporate governance and transparency in the listing and disclosures rules, and moving toward the adoption of international accounting and auditing standards. The intention is to attract more investors in order to raise market liquidity.

The quality of domestic rating agencies has presumably improved as they have been trained in international best practice to harmonize rating practices. Also important to note is the collaboration with the Association of Credit Rating Agencies in Asia. Improvements are made in the registration requirements to be in line with the adoption of ASEAN+3 standards. Some countries are also considering accepting the International Financial Reporting Standards (IFRS) and International Standards on Auditing (ISA) for cross-border offering, and to comply with International Organization of Securities Commissions (IOSCO) principles for securities regulations.

To enhance cross-border bond transactions, efforts have been made to harmonize the Asian Bond Standards by involving existing self-regulating organizations in the region to ensure consistent adoption of standards and practices. Some countries have also made attempts to improve insolvency laws to deal with issues such as debt funding, debt recovery, secured transactions, and insolvency processes. On the information and educational side, the Asian Bond Online, an ABMI product, has become the envy of other organizations as it provides comprehensive data and information on the development of the Asian bond market.[12]

Overall, the quantity and quality of the market have improved. The question is, how many of these developments are due to ABMI-related activities? This is a strategically important question to ask, as it may suggest a reassessment of the whole concept of the ABMI. But this is also a very difficult question to answer, since methodologically one needs to disentangle the determinants of bonds market development, i.e., separate components that are independent of the ABMI from those caused by the ABMI. The development of a bond market in the region may have taken place anyway, with or without the ABMI, since policymakers in each country fully realize the importance of it as an alternative source of long-term financing.

Much has been done in each ASEAN+3 country. New policies, rules, and regulations have been issued, all of which have contributed to the development of local currency bond markets, albeit not necessarily cross-ASEAN+3 holding of bonds. Measuring their impacts, let alone the indirect

[11] In some countries, government bond issuance has declined but that is due to intentional policy to reduce public debt (Indonesia is a notable example).

[12] The following table shows the number of hits on the Asian Bond Online website during 2010–2011:

Period	Total Site hits	Total Unique Visitors	Total Visits	Total Pageviews	Total ABM Hits	Total WDH Hits
2010	9,674,093	65,472	528,971	1,879,713	208,237	65,443
2011	11,597,752	84,506	627,179	2,294,895	212,713	119,485

For January–February 2012, the following is recorded: Hits/day: 32,174 (+2.85%); Unique Visitors :11,980 (+6.36%); Visits/day : 1,864 (+5.19%); Page views/Day: 5,822 (+3.41%).

impacts, however, is a different matter. The "with and without" approach is always preferable, but it is also more difficult than the "before and after" approach.[13] Unless such an exercise is done, however, we will never be able to evaluate precisely the true impact of the ABMI.

2.2 Chiang Mai Initiative Multilateralization and the ASEAN+3 Macroeconomic Research Office

Disappointed with the IMF-driven policy during the Asian financial crisis, a number of countries initiated regional cooperation to deal with future crises. The early proposal to set up an Asian monetary fund was shelved because of the rejection by some countries, notably the United States (US), which argued that Asia's capacity to provide resources for a regional financial safety net in terms of both financial resources and capacity to do surveillance is limited. However, the US completely ignored the fact that financial resources and capacity can be built up and developed over time. Many suspect the real reason for rejection was a fear of duplication and competition that could undermine the Fund's role and credibility.[14] The IMF subsequently introduced the Supplementary Reserve Facility and the Contingent Credit Line to strengthen its position as the lender of last resort. The counterargument, however, points to the fact that the severity of the Asian crisis required large amounts of rapid disbursement of liquidity support that put serious constraints on the IMF to act in a timely manner with sufficient financial resources.[15]

The episode did not stop some governments in the region from pursuing further cooperation. Eventually the efforts led to the establishment of the Chiang Mai Initiative (CMI) in May 2000, which effectively expanded the swap arrangements among ASEAN countries to include the PRC, Japan, and the Republic of Korea (hence the term ASEAN+3). Intended to focus on closer cooperation and RFA, the proposal stipulates the importance of regional surveillance and monitoring, particularly of capital flows, and the need to complete a network of bilateral swap arrangements that would provide liquidity support for member countries when needed.

Following intense discussions, finance ministers and central bank governors of ASEAN+3 countries and the Monetary Authority of Hong Kong, China declared an expanded CMI, the Chiang Mai Initiative Multilateralization (CMIM), to be effective in March 2010. To deal with crisis prevention, they stressed the importance of enhancing market confidence, setting the committed amount of $120 billion, and collaborating with the IMF on surveillance work. More controversial was the decision to link the provision of the facility with the IMF (the "IMF-link"). Only 20% of the CMIM borrowing quota can be taken without linking it to IMF programs, a proposition inconsistent with the raison d'être of the CMIM. Given the short-term nature of the

[13] No less important is the question of distribution of benefits. No wonder some countries are aggressively pursuing the liberalization of a regional bond market, and even trying to broaden the initiative by including all capital market instruments.

[14] Following the rejection, a surveillance mechanism in the Asia and Pacific region was created in November 1997, subsequently named the Manila Framework Group, that includes the US, Australia, and New Zealand in addition to Asian economies. Its contribution, however, was minimal. The second line of defense it arranged for Indonesia and the Republic of Korea was never detailed or activated.

[15] A case in point was the (far too small) supplementary support from the IMF to Thailand and Indonesia during the 1997 crisis. The disbursement of financial support was also not timely, because it was done in several tranches (see Azis 2009). Building on this experience, the IMF initiated a reform of its lending toolkit after 2009 and introduced more tailored crisis prevention tools, including the Precautionary and Liquidity Line, designed to meet the liquidity needs of those with sound economic fundamentals and policies but with temporary balance of payments problems.

facility (90 days), and recognizing the fact that the effect of any attached conditionality will be much longer, adopting the link makes very little sense. Inconsistency aside, insisting on such arrangement where IMF stigma is still widespread suggests that no one actually expected the CMIM facility to ever be implemented—it was simply a "feel good" exercise. Indeed, the sincerity of ASEAN+3 to provide a regional financial safety net at the time was seriously questioned. Since the crisis prevention mechanism would apply only for member countries with strong policy track records, the question was raised as to how the group would deal with those countries not qualified for it.[16] But it was only the beginning, hence it should be seen as a good start.

To support the CMIM, in April 2010 officials agreed to establish an independent regional surveillance unit, the ASEAN+3 Macroeconomic Research Office (AMRO). This marked the region's first step toward institutionalizing financial cooperation, an early form of an Asian monetary fund. AMRO is expected to monitor macroeconomic and financial conditions, detect emerging vulnerabilities, and support CMIM decision-making. For it to play a pivotal role, however, it has to be credible, competent, and independent in conducting the surveillance analysis.[17]

During the 15th ASEAN+3 Finance Ministers and Central Bank Governors' Meeting in Manila, officials agreed to double CMIM resources to $240 billion and increase the IMF-delinked portion to 30% with a view to raising it to 40% in 2014 when conditions warrant. They also agreed to lengthen the maturity of the IMF-linked portion from 90 days to 1 year, and the IMF-delinked portion from 90 days to 6 months. Similarly, the supporting period was lengthened from 2 years to 3 years for the IMF-linked portion, and from 1 year to 2 years for the IMF-delinked portion. Obviously it is progress, but doubts about the effectiveness of the CMIM remain, especially with regards to the IMF-link. Reducing the link from 80% to 70% does not remove the inconsistency.[18]

It is interesting to note in this context the difference between the IMF-link in Europe and that in the CMIM. In the euro area rescue, the €110 billion pledged in the first bailout package (spread over 3 years) was financed two-thirds by the European Union (EU) and one-third by the IMF. At the request of European officials, the Fund spearheaded the negotiation (outsourced), but the conditionality was jointly decided by the EU and the IMF, with the EU playing the major role. The opposite is true with the IMF-link in the CMIM. To the extent that the IMF has long experience and expertise in surveillance, aside from the inaccuracy of diagnosis and suitability of the conditionality, the European modality makes more sense. For ASEAN+3, where funding is not a major constraint given the region's excess saving, it would be more appropriate to link with the IMF on the surveillance work rather than on the funding.

Evaluating the effectiveness of the CMIM is not easy because the facility has never been activated. The pledged amount of $240 billion does not promise to provide anywhere near sufficient resources to stave off a 21st-century financial crisis. It was only around 5% of the reserves held by ASEAN+3 countries. Some argued that the facility was actually designed for

[16] The different design of the IMF's traditional Stand-By Arrangements and that of the Flexible Credit Line was highlighted at the time, where the Flexible Credit Line has the potential to overcome problems related to the IMF stigma. Officials were also contemplating the idea of complementing the IMF's Flexible Credit Line and the Precautionary Credit Line.

[17] At the time of writing, AMRO has three surveillance teams, each of which comprises one senior economist and three other economists. The fourth team is to be set up in 2012. Until then AMRO will have four senior economists and 12 economists, and about 10 other staff.

[18] To strengthen the CMIM, finance ministers and central bank governors also agreed to introduce a crisis prevention facility, the CMIM Precautionary Line.

ASEAN countries, not the "+3." This is clearly inconsistent with the whole concept of RFA. Was the facility in the euro area intended only for the periphery countries? Will Spain and Italy have no chance to benefit from it even if their situations warrant? There is no such thing as "optimal" size of committed amount, what matters is market perception. Any amount able to deter a market from shorting a currency would be suitable. But $240 billion does not appear to be calculated based on this rationale, but rather is based on the IMF funding related to the 70% IMF-link. With this persistent inconsistency, I have serious doubts that the CMIM facility is ready for activation and that it is enough to offer a real alternative in times of need for liquidity support.

Everyone knows that utilization of the CMIM facility depends on independent and credible surveillance work, which in turn depends on the quality of shared information. So far, the information sharing is done through the Economic Review and Policy Dialogue, the effectiveness of which is questionable at best, especially for CMIM purposes. Ideally, the CMIM should be able to rely on its own assessments when making decisions about the amount to lend and the required conditionality associated with it.

Another challenge relates to procedural matters. Too many lessons have been learned demonstrating that the mechanisms of liquidity support need to be rapid to be effective. Yet, delays in activation due to institutional and procedural constraints always happen. This suggests that careful preparation is needed. It is also unclear if a detailed procedural system has been in place for a member country to follow. If, let's say, one country is requesting to use the facility next week due to the contagion effect of the euro area crisis, it is unclear what information it should prepare, what steps it should take before contacting the CMIM authority, and whom and what number it is to call.

Given the current global economic condition, all eyes are looking at Asia, including how the region cooperates. Being an Asian RFA, the CMIM has now become the center of attention for judging how serious Asia is in providing a regional financial safety net. Many will also watch the progress of AMRO's activities. As financial crisis is increasingly more global than regional, where contagion and spillovers go beyond regional boundaries, combining domestic safety nets with regional and global safety nets is necessary, and this means the relationship between RFAs and the IMF also becomes more important. While RFA has all the desirable promised features of a financial safety net, the IMF is in a better position to examine the implications on Asia of policy response to a crisis occurring elsewhere, as well as to analyze the global implications of policy decisions taken in Asia by using its Financial Sector Assessment Program.[19]

The discussion above shows that RFA in Asia is still far from expected. The effectiveness of each institution and initiative remains limited, implying that, given an idiosyncratic shock, the region still cannot rely on its RFA. Financial safety nets will continue to be supported mostly by each country's own resources, including their ample foreign reserves. Under such circumstances, mitigating risks caused by a crisis remains limited, forcing authorities to perform a difficult balancing act: developing financial market infrastructure and expanding products on the one hand, and maintaining stability in the midst of global economic uncertainty and market

[19] The Financial Sector Assessment Program was launched in 1999 in response to the Asian financial crisis. It is meant to help national authorities to identify finance sector vulnerabilities and to design long-term policies and reforms in order to prevent future crises. Ironically, non-Asian members are more enthusiastic about it than Asian members. Questions about its effectiveness have been raised, especially in light of the Financial Sector Assessment Program's assessment prior to the Lehman Brothers collapse and the euro area crisis. Nonetheless, Group of Twenty (G-20) leaders made participation in the Financial Sector Assessment Program mandatory (every 5 years) for jurisdictions with finance sectors deemed "systemically important."

volatility on the other. This is the reason why deregulation in financial markets has been increasingly "matched" by rules and regulations that limit some financial transactions.[20]

This does not necessarily mean that Asia's finance sector is currently vulnerable. Thanks to the lessons of the 1997 Asian financial crisis, the finance sector in most countries is relatively sound and resilient, enabling them to weather the impact of the shock caused by the Lehman Brothers collapse and the euro area crisis. Ironically, this may have been one of the reasons why efforts to strengthen RFA have not been a high priority.

3. FINANCIAL INTEGRATION

Financial integration is often associated with openness. Despite the promised risk sharing and other benefits of it, financial integration can cause greater volatility and vulnerability (Azis 2011). Some have argued that volatility caused by integration only applies up to a certain threshold, implying that the benefits of financial integration in terms of risk sharing and consumption smoothing can be expected beyond such threshold (Kose, Prasad, and Terrones 2003). In reality, however, risk sharing following integration is often limited. Doubts are therefore raised regarding the usefulness of financial integration.

But a more integrated financial market can also serve as a safety net that will strengthen financial stability.[21] For that to happen, however, financial market integration should be guided by greater exchange rate flexibility, freer capital mobility, and transparent rules and regulations. Fair competition on reciprocity that allows the private sector to adjust given any changes is also needed.

Asia's finance sector has been growing steadily and is more resilient than before. But judged by the volume of cross-border holding of assets, it is still far from integrated and lags behind trade integration.[22] Indeed, Asian economies have closer financial links with industrial countries than among themselves, although the trend measured by either asset-return correlation or cross-border financial holdings has changed since the global financial crisis in 2008.

Cross-border equity investment among Asian countries has grown from 10.5% to 22.0% or US$38 to US$382 billion from 2001 to 2011 (Tables 1 and 2). But this is quite low compared with US investment in the Asian market (20.4%).[23] Among investors in Asia, those in Singapore; Hong Kong, China; and Japan are the most regionally-biased in equity investment. Singapore

[20] For example, the Bangko Sentral ng Pilipinas issued a memorandum in 2011 requiring investments of banks in offshore issuance of peso-denominated government securities transacted and settled in foreign currency to be recorded as foreign-currency-denominated assets. To minimize unsafe banking practices, the Bangko Sentral ng Pilipinas also requires banks performing as underwriters of equity securities to undertake the function through a separate department.

[21] In a recent speech in Tokyo, the governor of the Bank of Korea, Kim Choong Soo, remarked: "If better integrated Asian markets can produce more safe assets of our own, offer greater risk hedging, and help to reduce financial mismatches, the financial stability gains to us could be quite large."

[22] In the context of the ABMI, cross-border bond issuance between the Republic of Korea and Japan was discussed for the first time in 2004.

[23] EU-15 equity investment in Asia was around 10% of the total.

Table 1: Asia Cross Border Equity Securities Investments, 2001 (in million USD)

Investment from: end-2011

Investment in:	Hong Kong, China	India	Indonesia	Japan	Korea, Republic of	Malaysia	Philippines	Singapore	Thailand	Total Asia	United States	EU 15	Total value of investment
PRC	5,449	...	--	789	15	8	...	1,044	4	7,310	2,370	3,083	13,307
Hong Kong, China	...	...	11	4,848	100	47	...	3,084	6	8,097	30,154	34,368	79,827
India	...	...	--	31	-	1	...	238	-	270	6,897	5,492	13,396
Indonesia	...	...	...	50	13	44	...	310	15	431	1,526	1,164	3,593
Japan	2,145	...	2	-	101	7	--	1,760	1	4,017	170,714	125,796	332,562
Korea, Republic of	1,311	...	--	381	-	8	...	1,107	-	2,808	29,537	15,406	51,942
Malaysia	604	...	...	339	124	...	...	4,670	-	5,737	2,578	3,168	12,257
Philippines	60	...	...	213	3	61	...	422	1	760	1,344	579	3,449
Singapore	1,403	...	2	924	1	461	2	...	8	2,801	21,376	9,223	36,185
Taipei,China	1,486	...	--	394	-	6	...	1,006	1	2,893	19,607	13,609	39,042
Thailand	488	...	--	290	20	15	1	1,527	-	2,340	1,916	3,088	7,797
Viet Nam	...	...	...	1	6	10	...	25	3	46	-	13	85
Total Asia (A)	12,946	--	16	8,260	385	668	4	15,193	39	37,510	288,019	214,988	593,443
Total value of investment (B)	94,615	--	17	227,343	1,300	1,332	111	33,617	82	358,416	1,612,667	2,447,492	5,198,729
Ratio of A to B	13.7	--	95.3	3.6	29.6	50.1	3.2	45.2	47.6	10.5	17.9	8.8	11.4
United States	11,458	...	...	123,511	454	68	92	7,687	14	143,284	...	590,374	1,028,384
EU 15	28,827	--	1	69,924	163	55	14	6,074	8	105,066	843,404	1,383,516	2,638,666

Notes: The data are derived from the creditor side for both assets and liabilities.

-- Indicates a zero value or a value less than US$ 500,000

... Indicates an unavailable datum

Source: Author's calculation based on data from IMF, Coordinated Portfolio Investments Survey as of 15 November 2012.

Table 2: Asia Cross Border Equity Securities Investments, 2011 (in million USD)

Investment from: end-2011

Investment in:	Hong Kong, China	India	Indonesia	Japan	Korea, Republic of	Malaysia	Philippines	Singapore	Thailand	Total Asia	United States	EU 15	Total value of investment
PRC	112,075	--	13	10,113	6,662	388	1	58,822	190	188,263	74,727	89,008	372,514
Hong Kong, China	-	69	17	12,448	4,830	1,870	1	11,005	222	30,462	112,274	82,721	247,218
India	383	...	1	3,528	1,572	37	-	16,298	23	21,842	55,056	45,348	196,004
Indonesia	-	41	...	3,389	402	679	--	6,152	36	10,700	27,168	22,690	63,377
Japan	5,067	18	-	...	4,122	376	...	30,339	14	39,936	391,341	211,163	724,880
Korea, Republic of	1,160	25	3	4,685	-	355	2	21,080	1	27,311	116,656	80,739	241,652
Malaysia	775	...	-	1,678	275	...	--	11,539	8	14,275	20,763	18,078	56,957
Philippines	160	1	-	267	109	20	...	1,716	2	2,275	9,264	5,786	17,991
Singapore	3,432	19	-	6,774	689	7,860	13	...	410	19,198	47,987	31,471	109,877
Taipei,China	2,571	15	2	2,431	697	412	-	13,371	-	19,500	71,800	51,008	150,843
Thailand	667	58	2	1,516	312	326	1	4,938	-	7,819	21,293	22,353	54,427
Viet Nam	-	...	-	106	247	16	-	336	9	713	687	703	2,148
Total Asia (A)	126,291	245	39	46,935	19,916	12,340	18	175,597	913	382,295	949,016	661,068	2,237,888
Total value of investment (B)	581,742	1,057	947	678,481	86,697	25,050	19	399,947	4,753	1,778,692	4,646,908	6,621,423	15,712,644
Ratio of A to B	21.7	....	4.1	6.9	23.0	49.3	91.2	43.9	19.2	21.5	20.4	10.0	14.2
United States	15,896	142	1,180	283,972	24,151	8,460	20	114,710	1,462	449,993	-	1,126,940	2,234,300
EU 15	74,040	451	1	143,586	13,376	2,442	12	66,570	790	301,269	1,528,330	3,018,678	5,656,409

Notes: The data are derived from the creditor side for both assets and liabilities.

-- Indicates a zero value or a value less than US$ 500,000

... Indicates an unavailable datum

Source: Author's calculation based on data from IMF, Coordinated Portfolio Investments Survey as of 15 November 2012.

took up almost half of total Asia's investment in other Asian countries. Excluding the PRC-Hong Kong, China, and with the exception of Singapore as the source, the region's cross-border investment has been concentrated in only a few countries; i.e., Japan-Hong Kong, China; Japan-PRC; and Malaysia-Singapore. But in percentage terms Japan's investment in other Asian countries (6.9%) is the second lowest after Indonesia (4.1%). There has been a significant increase of Asian investment in India, jumping from a quarter of a billion in 2001, the second lowest after Viet Nam, to almost US$22 billion by the end of 2011. Singaporean investors have been particularly attracted to the Indian market. More recently, Indonesian investors have followed suit.

In terms of debt investment, the cross-border holding in Asia is even smaller but has steadily increased from 4.2% to 7.2%, or from US$53 to US$233 billion during 2001–2011, of which short-term debt accounts for a larger share than long-term debt.[24] Measured as age of the country's total cross-border investment, lack of regional bias is clearest in the case of Japanese investors who invested only 1.3% of their total debt portfolio investment in Asia, and Korean investors about 7.4%, down from 21% in 2001 (Tables 3 and 4). By the end of 2011, investors from Thailand were the most regionally-biased. Of their total debt investment, more than half was invested in Asia, the largest share in Korea. Malaysia is ranked second, at 49.2%, with investments mostly in Singapore and Korea.

Although as a share of their total investment US and EU15 investors' exposure in Asian debt markets in 2011 is less than their equity investment (the bulk of it is in Japan and Korea), the size of their total investment in Asia far exceeds that of regional investors. By the end of 2011, the exposure of US and EU15 investors in the Asian equity market amounted to close to US$1 trillion and US$0.7 trillion, respectively, compared with intra-Asian investment of only US$382 billion. In the debt market, the EU15's exposure in Asia is the largest, amounting to US$434 billion by the end of 2011. It was not only larger than that of the US (US$ 190 billion), but it also exceeded intra-Asian investment (US$324 billion). Given such a big size, the deleveraging process during the euro area crisis has caused a shock in the local currency bond market in some countries, notably Indonesia.

Broken down by maturity, most cross-border debt within the region is long-term, where Hong Kong, China; Japan; and Singapore dominate. In the case of short-term debt, Singapore and Thailand's investments in Korea take the lead. In general, non-Asian investors also hold more long-term than short-term debt in the Asian market.

A number of studies have tried to analyze the intraregional flows of financial assets. García-Herrero, Wooldridge, and Yang (2009) looked into the geographical composition of the cross-border portfolio holdings of more than 40 source countries, and Park and Shin (2008) analyzed the role of institutional factors as market barriers to cross-border holding of assets in ASEAN+3. Kim, Lee, and Shin (2006) assessed East Asian financial integration by linking it with the degree of risk sharing, attempting to find the explanations why the region's level of integration is low. Borensztein and Loungani (2011) looked at cross-country dispersion in equity returns and interest rates in Asia to evaluate the region's degree of financial integration. All these studies suggest that cross-border holding of financial assets in Asia is indeed low, albeit in some cases increasing. That the integration of bond markets lag behind equity markets seems to be a "normal" pattern as it also happens in other emerging economies (see Adarov and Tchaidze 2011).

[24] A survey-based analysis also shows a lack of "regional bias" among Asian bond investors; see Azis and Mitra 2012.

Table 3: Asia Cross Border Debt Securities Investments 2001 (in million USD)

Investment from:

end-2001

Investment in:	Hong Kong, China	India	Indonesia	Japan	Korea, Republic of	Malaysia	Philippines	Singapore	Thailand	Total Asia	United States	EU 15	Total value of investment
PRC	2,967	...	...	880	142	...	...	561	-	4,550	634	1,412	7,178
Hong Kong, China	...	...	96	1,268	306	28	25	1,684	119	3,527	1,893	9,717	16,872
India	...	...	...	166	66	6	...	382	-	620	301	834	2,125
Indonesia	...	...	...	108	63	8	3	476	-	657	315	422	1,873
Japan	7,103	...	1	-	75	15	5	7,299	-	14,498	27,125	75,170	208,238
Korea, Republic of	3,789	...	...	5,454	-	3	7	2,659	-	11,911	4,938	7,360	25,397
Malaysia	1,817	...	2	2,200	329	...	9	2,180	-	6,536	1,680	1,733	10,294
Philippines	1,179	...	...	1,347	106	41	...	954	-	3,628	2,671	1,926	9,497
Singapore	1,282	...	38	1,209	151	10	59	...	98	2,847	1,442	8,151	14,508
Taipei,China	609	...	...	82	8	15	13	431	-	1,158	253	677	2,165
Thailand	659	...	...	748	159	21	...	888	-	2,476	782	765	4,265
Viet Nam	...	...	...	30	15	...	...	...	-	45	21	37	106
Total Asia (A)	19,405	--	137	13,492	1,419	147	121	17,514	217	52,452	42,055	108,205	302,519
Total value of investment (B)	110,985	...	701	1,062,403	6,735	947	2,024	78,669	743	1,263,206	690,936	3,555,740	7,520,680
Ratio of A to B	17.5	--	19.5	1.3	21.1	15.5	6.0	22.3	29.2	4.2	6.1	3.0	4.0
United States	27,795	...	249	366,689	3,309	140	1,752	15,286	278	415,498	...	628,935	2,077,457
EU 15	22,665	--	214	427,855	1,017	490	61	30,898	198	483,398	360,185	2,218,666	3,673,184

Notes: The data are derived from the creditor side for both assets and liabilities.

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... Indicates an unavailable datum

Source: Author's calculation based on data from IMF, Coordinated Portfolio Investments Survey as of 15 November 2012.

Table 4: Asia Cross Border Debt Securities Investments 2011 (in million USD)

Investment from: end-2011

Investment in:	Hong Kong, China	India	Indonesia	Japan	Korea, Republic of	Malaysia	Philippines	Singapore	Thailand	Total Asia	United States	EU 15	Total value of investment
PRC	81,242	...	298	537	232	28	254	3,640	367	86,599	2,072	8,665	103,621
Hong Kong, China	-	...	148	2,065	693	505	168	8,978	1,246	13,804	3,370	9,635	30,630
India	5,528	...	15	1,632	104	299	-	21,805	373	29,756	3,538	17,526	58,803
Indonesia	-	...	-	2,631	85	701	939	12,660	35	17,051	11,944	16,573	48,018
Japan	30,696	17	23	-	745	62	43	24,670	128	56,383	101,115	268,655	691,756
Korea, Republic of	17,535	...	191	17,595	-	1,930	152	25,068	6,710	69,181	29,550	41,165	155,147
Malaysia	6,851	...	40	2,731	243	...	31	10,185	51	20,133	14,964	23,553	59,690
Philippines	621	18	2	2,563	23	245	...	2,746	-	6,217	8,591	9,576	31,252
Singapore	5,188	2	508	5,428	89	2,822	104	...	356	14,498	11,565	23,078	59,381
Taipei,China	1,125	...	2	31	24	-	-	4,201	--	5,382	346	9,002	14,827
Thailand	633	...	12	884	102	165	41	3,334	-	5,171	1,874	5,875	13,301
Viet Nam	-	...	1	35	--	-	-	148	-	184	681	1,028	1,938
Total Asia (A)	149,420	37	1,240	36,132	2,340	6,756	1,734	117,433	9,266	324,358	189,610	434,332	1,268,365
Total value of investment (B)	347,219	290	7,040	2,709,395	31,478	13,728	5,421	330,492	16,711	3,461,774	2,314,217	11,794,114	24,732,900
Ratio of A to B	43.0	....	17.6	1.3	7.4	49.2	32.0	35.5	55.4	9.4	8.2	3.7	5.1
United States	57,081	90	349	884,380	11,925	1,654	1,575	81,747	1,550	1,040,352	-	1,926,849	6,040,215
EU 15	74,404	142	3,028	847,410	10,092	1,291	655	89,624	1,483	1,028,130	882,405	7,625,521	12,259,837

Notes: The data are derived from the creditor side for both assets and liabilities.

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Source: Author's calculation based on data from IMF, Coordinated Portfolio Investments Survey as of 15 November 2012.

Why is there a lack of regional bias? What are the most critical criteria regional investors use in their investment decision? Saby Mitra of ADB and I analyzed this question by combining a gravity model using a random effects panel least square procedure, and primary data analysis based on a field survey.[25]

Results of the econometric study point to financial market and economic size, market liquidity and stability, and financial openness as important determinants of investment decisions (the specific equations and the results are shown in the Appendix). The size of both source and destination country significantly matters in the decision of Asian investors to hold foreign debt securities. Size serves as the immediate and primary sign of financial market and economic development, attracting potential foreign investor participation. The importance of bond market liquidity is also evident. This might be the reason why Asian investors prefer to access the major financial centers—these centers have relatively higher liquidity compared with Asian bond markets. Critically important to Asian investors is the degree of openness of own and destination financial markets. Capital controls and barriers to bond market access increase transaction costs and inhibit Asian investors from participating in other Asian markets.

On average, investor holdings of foreign debt assets significantly respond to two components of portfolio returns: source country yields are negatively related to holdings of foreign local currency bonds, and the return stemming from the exchange rate gains and losses when converted to the currency of the source country.

Results of the field survey using the Analytic Hierarchy Process reveal similar conclusions. In particular, increasing overall return is the primary motivation of Asian investors when making their investment decision. Risk minimization is a factor closely considered. This suggests general cautiousness among participants in considering intraregional investment. The enormous weight placed on economic and political stability also provides a partial explanation for the high degree of home bias among Asian investors. This emphasis on stability is primarily a function of familiarity and knowledge. Lack of familiarity raises doubts about the perceived stability of a country from the foreign investor's point of view.

Since familiarity is highest in domestic markets, perceived stability is greatest in the investor's own country. Consequently, investing in global or intraregional markets becomes less attractive. Prioritizing liquidity, openness, and trading barriers only exacerbates the hesitation in intraregional investment, as most of the emerging markets in Asia are still developing. Finally, intraregional investments are hampered by the ability to freely move capital, whether due to existing regulatory restrictions or to a limited depth and/or breadth of market liquidity.

Another important feature for evaluating the merit of integration is the extent to which it provides benefits in terms of risk sharing. Numerous studies have tried to measure the degree of risk sharing in Asia to reveal almost unanimously that the degree of risk sharing in the region is small, even after the proliferation of regional arrangements in trade and finance. Using several welfare measures and alternative scenarios of risk sharing, Azis concludes that while the level of East Asian financial integration may have increased, its benefits in terms of consumption and investment risk sharing have been limited. Even the advantage of having greater resilience to

[25] The field survey covers 69 respondents in 10 countries, conducted during March–mid-May 2011 using the method of the Analytic Hierarchy Process (Saaty 1996, 2001). It is found that the primary driver for Asian investors to invest outside their home country bond market is to improve overall returns and lower portfolio risks. Openness and trading barriers are the top two criteria in their investment decision, followed by a challenging regulatory framework and transparency of governance. Low-yield investors placed higher importance on openness than trading barriers, whereas the reverse is true for high-yield investors.

external shock, that could be potentially reaped from greater synchronization of business cycles, has not been evident (Azis 2007: 190).

Similarly, a study published in an IMF Working Paper concludes that risk sharing in Asia is low intra-regionally. For a given degree of contagion risk exposure, the US stands out as the one that reaps the most benefit from sharing risks with Asia. The study suggests that the region should promote efforts to increase the degree of risk sharing without exposing countries to greater contagion risks: "pursuing these regional policy avenues should receive a priority over a push for further overall financial integration whose welfare effect may be ambiguous" (Rungcharoemkitkul 2011: 32).

Other studies on financial integration looking at international risk sharing also found that, contrary to theory, despite increased integration there appears to have been no substantial improvement in the degree of international risk sharing. I suspect part of the explanation rests with the fact that countries can insure themselves through accumulation of domestic assets, the size of which is sufficient to deal with the consequences of capital flows. The degree of risk sharing will increase only when the size of capital flows among the integrated economies is large.[26]

The preceding discussion clearly shows that financial integration in Asia is still limited, and the process of integration has not really been propelled by explicit government initiatives through a full-scale top-down approach. Instead, it has largely been driven by the private sector. Given the low returns in slow-growing economies of industrial countries, and that financial reform including the harmonization of rule and standard will continue in Asia, the market may dictate that the finance sector becomes more integrated in the coming years. The benefit of integration in terms of risk sharing has so far been small. If RFA leads to further integration, in which the volume of intraregional capital flows increases, one expects that the provision of a financial safety net is enhanced. In the process, however, integration may increase the risk of volatility up to a certain threshold, beyond which the risk sharing can be high. The question is, what is that threshold and when will it be reached, if ever.

4. CONCLUDING REMARKS

Preventing a crisis is as important as managing one. They are both part of a financial safety net. In ASEAN+3, the ABMI is designed for crisis prevention by promoting integration of regional bond markets to avoid double mismatch, and the CMIM is designed for crisis management by providing liquidity support.

So far, financial integration in the region has remained limited. Asian investors show more global and local bias than regional bias. However, since the Lehman Brothers collapse they have been showing more local bias. But this should not be a major concern for at least three reasons. The investment of domestic savings in the same country is not incompatible with the idea of recycling Asian excess saving within the region, which is one of the goals of the ABMI. The main point is not to have the excess saving invested outside Asia. Secondly, financial integration lagging behind trade integration is a normal pattern—it occurs everywhere. As policymakers continue to work on removing obstacles to intraregional flows and harmonizing rules and standards, with or without the ABMI the market may eventually dictate what will happen with such flows. Given the current trend in the global economy, I predict intraregional flows will increase. Thirdly, as we have learned from the euro area crisis, integration carries

[26] The ability to default may also restrict international and interregional risk sharing.

risks. A more balanced view therefore suggests that we should not impose integration without considering its potential costs and risks (Azis 2011; ADB 2012).

But integration is not the same as cooperation. To the extent that the process of integration in Asia can accelerate along with its potential benefits and risks, regional cooperation is needed to manage the risks. One such risk is the financial contagion of a crisis. Cooperation in providing a regional financial safety net is therefore necessary. But, alas, the next crisis can be rooted in new vulnerabilities, and transmitted through new channels which we may or may not be able to detect. Trying to explain the 2008 crisis, Acemoglu (2009: 3) argued that "…there remains much uncertainty about what happened in the financial markets and inside many corporations…most of us did not recognize them before the crisis." Even in economies with relatively robust macroeconomic and finance sectors like in ASEAN+3, domestic safety nets alone may not be adequate to deal with such vulnerabilities, especially when the contagion channels do not mirror past events. It needs support from an effective regional safety net. As the anxiety about the euro area crisis continues to loom large and the recovery in the US remains sluggish, strengthening safety nets system is pivotal especially when the contagion has already occurred in the region (see Azis et al. 2013).

The safety net provided by the CMIM is currently ineffective, far from what it can and should be. Progress to make the facility ready when needed has been slow, always colliding with flagging political will. Inconsistency of the IMF-link is the most serious bottleneck. Along with inadequate resources, it deters member countries from using the facility. Ironically, the region's current resilience and stable sources of funding may stand in the way of having a more effective financial safety net.

The notion that only some ASEAN countries, not the "+3," will be on the receiving end (and hence the currently committed amount is sufficient) contradicts the essence of cooperation. It is also inconsistent with the principle of a regional safety net which requires a large amount of resources given the uncertain nature of future crisis and contagion (imagine the European Financial Stability Facility [EFSF] excluding Italy and Spain).

That is not to say that progress in the CMIM has not been made. Nor does it suggest that the region is in danger of an imminent crisis. I simply argue that the current regional safety net is not ready. It should be made ready soon by removing the inconsistency. In this current world of uncertainty, conjecturing that Asia is always resilient is a show of bravado. We don't learn from past mistakes if we believe domestic safety nets are sufficient to deal with a future shock. So, next time around, when the contagion effect of the euro area crisis forces an ASEAN+3 country to ask for help from the CMIM, I would say: don't hold your breath.

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APPENDIX

The determinants of bilateral debt securities holdings are analyzed using the following equation:

$$\ln FI_{sdt} = \beta_0 + \beta_1 \ln Size_{st} + \beta_2 \ln Size_{dt} + \beta_3 BAS_{dt} + \beta_4 Yields_{st} + \beta_5 Yields_{dt} + \beta_6 ER\_app_{dst} + \beta_7 ExpER\_App(1)_{dst} + \beta_8 Y\_Volatility_{dt} + \beta_9 FinOpen_{st} + \beta_{10} Postrade_{dt} + \varepsilon_{sdt} \quad (1)$$

where FI_{sdt} is the cross-border holdings of the source country (s) of debt securities issued by the destination country (d). $Size_{st}$ is the amount of domestic bonds outstanding in the source country, and $Size_{dt}$ is the amount of domestic bonds outstanding in the destination country. The link between bond market size of the destination country and investments in the bond market was proposed by Eichengreen and Luengnaruemitchai (2004). BAS_{dt} is the bid-ask spread prevailing in the bond market of the destination country (d). A large spread indicates an illiquid market.

$Yields_{st}$ are the yields on a 5-year local currency bond of the source country, and $Yields_{dt}$ are the yields on a 5-year local currency bond of the destination country. They measure comparative returns from holding bonds. ER_app_{dst} is the appreciation of the destination country's currency relative to the currency in the source country; it indicates currency returns, i.e., an appreciating currency makes the domestic asset more expensive, which effectively lowers the return. $Y\_Volatility_{dt}$ is the volatility in yields which accounts for valuation risks and is computed using a 12-month rolling standard deviation. $Postrade_{dt}$ refers to barriers in post-trading infrastructure of the destination country, such as those pertaining to the use of omnibus accounts and to settlement practices. A higher value indicates a larger number of barriers in the market infrastructure that can impede financial trading transactions. The index is a component of market barrier index constructed by Park and Shin (2011). $FinOpen_{st}$ is the financial openness in the source country to reflect the ease of investing offshore. It is based on the index computed by Chinn-Ito using information from the IMF Annual Report on Exchange Arrangements and Exchange Restrictions.

The stock market and banking sector may either complement or crowd out participants in the bond market. To test this, the following specification is used:

$$\ln FI_{sdt} = \beta_0 + \beta_1 \ln Size_{st} + \beta_2 \ln Size_{dt} + \beta_3 BAS_{dt} + \beta_4 Yields_{st} + \beta_5 Yields_{dt} + \beta_6 ER\_app_{dst} + \beta_7 ExpER\_App(1)_{dst} + \beta_8 Y\_Volatility_{dt} + \beta_9 FinOpen_{st} + \beta_{10} Postrade_{dt} + \beta_{11} DC\_GDP_{dt} + \beta_{12} MCap\_GDP_{dt} + \varepsilon_{sdt} \quad (2)$$

where DC_GDP_{dt} is outstanding domestic credit in the banking sector as a proportion of gross domestic product (GDP) of the destination country, and $MCap\_GDP_{dt}$ is the stock market capitalization in the destination country.

To the extent that the banking sector and stock market directly influence the size of a bond market, causing multicollinearity problems, the model is modified by removing bond market size

from the equation. Both stock market and banks can be a potential source of funds such that they can reduce bond issuances. But banks may also be large suppliers of bonds. The GDP of partner countries is included to account for the force of attraction between two masses (the basis of gravity model):

$$\ln FI_{sdt} = \beta_0 + \beta_1 \ln GDP_{st} + \beta_2 \ln GDP_{dt} + \beta_3 BAS_{dt} + \beta_4 Yields_{st} + \beta_5 Yields_{dt} + \beta_6 ER\_app_{dst} + \beta_7 ExpER\_App(1)_{dst} + \beta_8 Y\_Volatility_{dt} + \beta_9 FinOpen_{st} + \beta_{10} Postrade_{dt} + \beta_{11} DC\_GDP_{dt} + \beta_{12} MCap\_GDP_{dt} + \varepsilon_{sdt} \quad (3)$$

where GDP_{st} is the GDP of the source country, and GDP_{dt} is the GDP of the destination country.

The following table summarizes the results of using the above three gravity model equations.

Dependent Variable: LOG(LT_DEBT)
Cross-sections included: 58

	Equation (1)			Equation (2)			Equation (3)		
	Coefficient	Std. Error	Prob.	Coefficient	Std. Error	Prob.	Coefficient	Std. Error	Prob.
C	2.952	1.024	0.004	3.134	1.035	0.003	2.739	1.242	0.028
LOG(SIZE_SOURCE)	0.322	0.107	0.003	0.260	0.107	0.016			
LOG(SIZE_DEST)	0.262	0.110	0.018	0.456	0.138	0.001			
YIELDS_DEST	0.082	0.041	0.047	0.068	0.041	0.102	0.066	0.041	0.108
YIELDS_SOURCE	-0.172	0.049	0.001	-0.187	0.049	0.000	-0.214	0.046	0.000
BAS_DEST	-0.012	0.003	0.000	-0.012	0.003	0.001	-0.012	0.003	0.000
FINOPEN_SOURCE	0.679	0.117	0.000	0.709	0.116	0.000	0.684	0.117	0.000
POSTRADE_DEST	-4.091	1.324	0.002	-4.211	1.377	0.003	-4.664	1.487	0.002
ER_APP	-0.027	0.014	0.060	-0.033	0.015	0.029	-0.031	0.015	0.034
EXPER_APP1	0.089	0.021	0.000	0.094	0.022	0.000	0.094	0.022	0.000
YIELD_VOL_DEST	-0.376	0.186	0.044	-0.402	0.192	0.038	-0.534	0.194	0.006
MCAP_GDP_DEST				0.091	0.040	0.023	0.089	0.039	0.023
DC_GDP_DEST				-0.884	0.396	0.027	-0.613	0.363	0.093
LOG(GDP_SOURCE)							0.266	0.139	0.056
LOG(GDP_DEST)							0.465	0.162	0.005
	Total panel (unbalanced) observations: 270			Total panel (unbalanced) observations: 263			Total panel (unbalanced) observations: 263		
	R-squared	0.243		R-squared	0.265		R-squared	0.247	
	Adjusted R-squared	0.214		Adjusted R-squared	0.229		Adjusted R-squared	0.211	