Research Paper

of

International Political Economy

"Why Asian Private Bond Market has not been developed"

Graduate School of Public Policy,

Campus Asia Program

51-138083

Tatsuya OGAWA

Contents

1. Background of Research

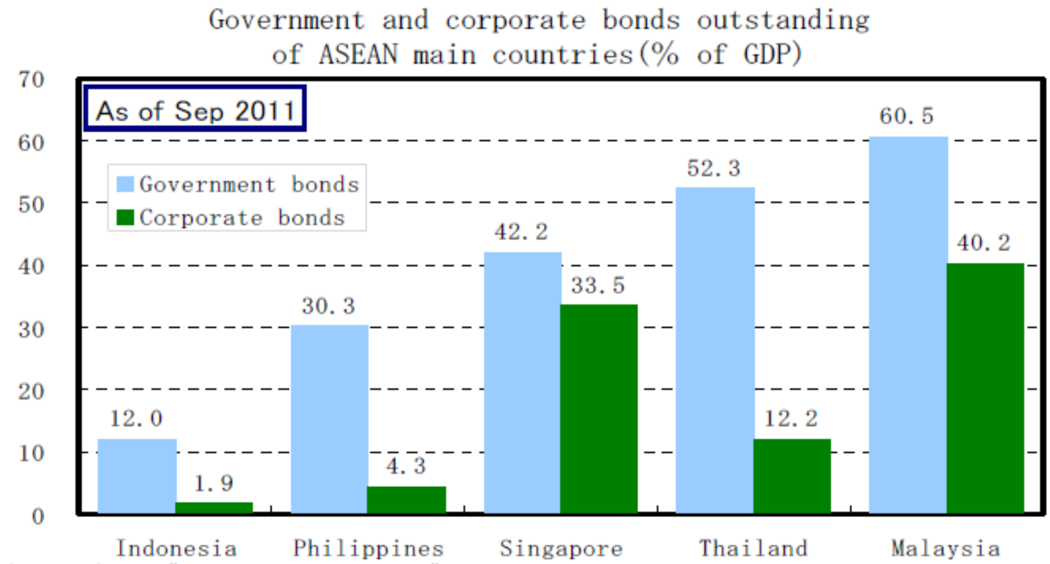
When I went to exchange in the University of Hong Kong, the thing which surprised me the most was international atmosphere of Hong Kong. There are various students literally from all over the world, not only from Asia but also from West, Latin America and Africa. There had been many active and meaningful discussions in classes for one year. Above all, among those stimulus conversations, the thing which had remained in my mind the most was this following question, "In Asia there had been no regional institution which shows independence for a long time." For me, that fact was penetrating into my heart because it means that Asia had been globally unstable and therefore, dependent. There would be many events that show emerging Asian countries' unstable dependency on global economy. However, what I am particularly interested in was Asian Bond Market. (ABM) As I just started studying about Asian Financial Crisis (AFC), it was more or less just about local exchange market collapse. Yet, through studying the case, I found out that more serious problem, in terms of the length of the pain, was bond market. There are two problems; maturity mismatch and currency mismatch. The former is that Asian bond maturity is too short to pay back after the crisis when local company suffered from the severe pain. The latter is that depreciated local currency made Asian USD based bond hard to repay. Through this hardship, what emerging Asian countries learned and what problem they still hold? And for the problems, what are solutions?

2. Research Objectives

My research objective is I want to make a proof which makes people convinced more about Asia's economy growth. Why I said that is I found a data which shows Asian economy has some room to grow more than now

Chart1.

(3) Government and corporate bonds outstandings



(Source)ADB "Asian Bonds Online"

This graph shows how much each Southeast Asian countries' government and corporate bond market are right now. As you can see, there are two types of countries; one is government and corporate bond market both mutually matured, such as here Singapore and Malaysia, whereas corporate bond market less matured countries, such as Thailand, Philippines, and Indonesia. (Indonesia and Philippines might be able to be categorized as both less matured country since their total bond amounts are not as much as their GDPs' scale) Anyway, this is start point of my research. Thus, why those private bond market less matured countries are like that?

3. Hypothesis

This thesis hypothesis is Asian Private Bond Market has not been matured even after the financial crisis due to clear reasons. Why I came up with this hypothesis is from the Chart1. It shows though some emerging Asian countries developed private bond market as much as government bond had, there are countries which has not been able to mature their private bond market. In this research, I will investigate the reasons why those are behind other Asian private bond market matured countries.

4. Methodology

Methodology is very flexible, but I will remain it that through proving the reasons that some emerging Asian countries' corporate bond market is not matured yet, I will use historical context analysis and future prospect verification. Those are mostly data collection of past analyses and fact base evaluation.

5. Why Asian Financial Market has not been Matured yet?

First, I check how Asian financial market was being developed and also sustained. Here I look into the reason that Asian currency exchange market was stable with USD so that their development was as smooth as no other developing countries did around the time. Second, I look through AFC itself. I check what kind of support was taken after that. Then, here I conclude that recent Asian financial weakness in not in currency market itself and rather it is in Asian bond markets. I look through the representative cases of Malaysia and Indonesia. The former developed LCY private bond market well but the latter could not. With the chart I show that the reason came from foreign participants market entry. That was crucial to expand the market like Malaysia. Finally, I try to convince that foreign participants market entry makes the market risk decreased rather than conventionally thought to be dangerous or unstable.

◆ Asian Financial Crisis

Pre-crisis momentum

First, how was the condition before the crisis hit Asian region? From early 1990s, Asia was targeted as the next investment region. Money in-flew to emerging Asian markets. Let me start with the conditions why Asia could receive a lot of investment from abroad. For instance, for Japan, Asian developing countries are attractive places where Japan can avoid the turmoil between US by outsourcing manufacturing process by not directly exporting from Japan. From the perspective of inner region, those countries are countries which distinguish itself from other developing countries in following ways conventionally.[1] First, those countries had been having solid educational system which produced many productive labors to the market, especially manufacturing and other supporting industries. Second, those countries made industrial policies which attracts outside monetary investment. Lastly, this is related to the second, but export promoting economy (or policy) was conducted. Of course from fundamentalist, other reasons are also suggested, however, here I will try to focus on financial crisis in the later of this chapter, so let me focus on financially related things. Above all, as for financial reasons, Asian growing economy's economic success was also made by internationally stable financial system.

Chart 1. Inflation Rate Comparison

[1] John Page, "The East Asian Miracle: Four Lessons for Development Policy", THE WORLD BANK

(source: "The East Asian Miracle: Four Lessons for Development Policy ")

Economy / Region	*Average CPI, 1961–1991*
HPAEs[a]	7.5
Hong Kong[b]	8.8
Indonesia[c]	12.4
Korea, Rep. of	12.2
Malaysia	3.4
Singapore	3.6
Taiwan	6.2
Thailand	5.6
All low- and middle-income economies	61.8
South Asia	8.0
Sub-Saharan Africa	20.0
Latin America and Caribbean	192.1

[a]Averages are unweighted
[b]1972–91 only.
[c]1969–91 only.
Sources: World Bank data; World Bank (1992); Taiwan (1992).

Above chart shows that actually despite all perspective analyses of Asian countries success before the crisis, what made those successful financially was, indeed, their solid monetary policy which had managed their domestic economy to be stable for years. As the chart shows, there is a significant difference between them and other developing countries. Asian emerging countries, such as from Hong Kong to Thailand in this chart, had been keeping way less inflation rate; approx. 7.5% on average, whereas other low and middle income economies had been at high inflation level around that time; 61.2%. That stable inflation rate made those Asian emerging countries to keep trading with other countries smoothly and more importantly the accompanying cheap their currencies compared to abroad ones made them be able to export goods for many years. Therefore, stable exchange rate was one of the main growth driving engines in those Asian emerging countries. The implication of this with the fact that is that monetary stability also means a lot for development even compared to conventional growth thoughts from fundamentalist who emphasizes intensive labor force and liberal industrial policies. With this implication, next paragraph will focus on Asian Financial Crisis itself. However, this was mostly guaranteed by their dollar-peg exchange rate system that those Asian countries, for almost a few decades since 1960s, had gotten around 10% average growth before the crisis. This is the background of before-the-crisis period.

Asian Financial Crisis Emergence

Asian financial crisis happened when huge Thai baht depreciation occurred after USD appreciation started due to their dollar-peg system which let them stabilize their currency value against US dollar at the same level. Till that time, USD had been stably appreciated. When the depreciation happened by speculative hedge fund shorting her currency, Thai government could not sustain their currency due to lack of their foreign reserve. That made Thai nearly default. Therefore, Thai government finally decided to transform to floating exchange rate system to flexibly change their currency value. As a result, that certainly made Thai baht depreciated a lot. In addition, that Thai government choice expanded this financial turmoil to their regional countries.

That Thailand financial crisis seemed like one country financial crisis in that that currency depreciation was just about herself and not to other countries. However, it was spread over the region by consecutive speculative fund shorting attacks to those emerging market currencies. As the representatives, Indonesia and Korea suffered a lot. As for the case of Indonesia, they had a surplus of their current account. However, Indonesia was also targeted under the bear market circumstance. In a large picture, those crises hitting countries problem is the same. They lack their hard currency, USD, reserve to compensate for those speculative attacks. If they want to keep their dollar-peg exchange rate system, they have to compensate for currency attack by their reserved pool. However, they did not have enough foreign reserve at that time. Therefore, as a result Thai chose to transform to floating exchange rate by abandoning their dollar pegged exchange rate. Indonesia changed its system to floating exchange rate too. Korea was forced to break up their Zaibatsu system too.

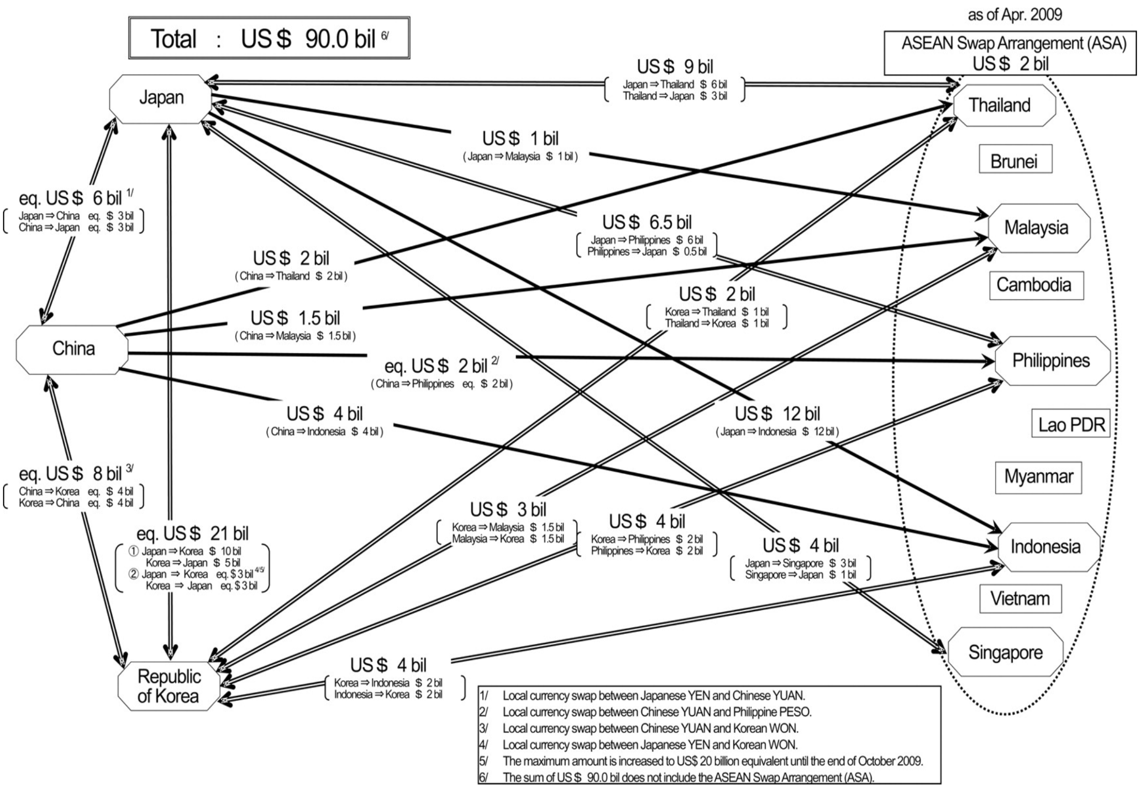
◆ Insufficient Coping Technique by IMF

Responding this historical financial crisis, IMF declared its help toward those suffering countries. However, due to those countries small contribution to IMF and America's reluctance to help those suffering countries with enough capital injection, they had been under suffering for a few years even after the crisis. After this painful lesson, Asian countries, ASEAN+3, gathered and talked about swap agreement which will inclusively help financially suffering countries effectively.

◆ Asian Countries made Prevention Mechanism

It was Bilateral Swap Agreement (BSA) that was on discussion during ASEAN+3 conference in November 1999. That is two countries' agreement to swap their currency when financial crisis hits them. The amount was 90 billion USD in the year 2009. Later it expanded to 120 billion USD by CMIM (Chiang Mai Initiative Multi-lateralization).[2] Actually, around that time, first Asian countries gathered by the initiative from Japan to talk about establishment of Asian Monetary Fund (AMF). However, the talk ended up being failure and it will not come true even in the future because of China and Japan's rivalry[3] and also, IMF's intervention to prevent AMF from being funded due to its motive to remain to be a "world controller". Then, after those unfocused conferences and negotiations, ADB reached that coping technique. The below chart shows how this coping technique works during a crisis.

Chart 2. Bilateral Swap Agreement Created by Chiang Mai Initiative



[2] Ministry of Finance, "Chiang Mai Initiative: CMI"; http://www.mof.go.jp/international_policy/financial_cooperation_in_asia/cmi/index.html

[3] William W. Grimes, "The Asian Monetary Fund Reborn? Implications of Chinag Mai Initiative Multilateralization", Jan 2011, The National Bureau of Asia

Asian country, by this, seems to have made an independent coping technique on financial turmoil. However, it was controlled by IMF in a sense that IMF de-linked swap portion is regulated up to 20% though it became 30% later in Chinag Mai Initiative Multilateralization (CMIM).[4]

Therefore, I will conclude that under the worst scenario case, capital injection will be implemented by these agreements to the degree that IMF accepts. If the crisis was bigger than the extent that CMIM can help, either IMF or world financial giants, such as US, Japan and China, will make another swap agreement.[5] In any case, as for financial turmoil, emergency treatment will be conducted by those institutions and countries.

◆ Shortcoming in Bond Market Exists

However, there is another issue. When the huge depreciation took place, bond market (largely short-term USD based lending market) will face difficulty to repay their loan. For instance, when a currency was depreciated, a corporation/country's lending money amount by USD will get relatively higher and the entity gets in trouble to pay them all back. The reason is they have to procure those abroad currencies to pay back, but they, first, have to exchange their local currency to get those except for the case the entity mostly gets profit from abroad business/activity by complete outside domestic economy activity. (Currency mismatch[6]) In addition, those lending money is relatively short term due to those local entities' low credibility in the bond market. (Maturity Mismatch[7])

Therefore, foreign reserve pooling is not enough to avoid potential crisis. Those developing Asian countries need the maturity of their local currency bond market. However, it is hard to develop their local currency bond market. First of all, to lend money needs credibility to repay. For those emerging countries, their credibility is relatively lower than developed countries as global rating companies show. In more detail, what's matter is those developing countries' currency is under volatile risk. Therefore, lenders are likely to let them borrow money at USD or other more reliable currency. However, from those Asian emerging country's own perspective, currency

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4 Do Jong-rok, "ASEAN+3 ministers and central bank governors' meeting successfully concludes", Ministry of strategy and finance, Press Release

5 Koo, Jahyeong; Kiser, Sherry L.,"Recovery from a financial crisis: the case of South Korea", (2001) (w). *Economic & Financial Review*. Retrieved 2009-05-05

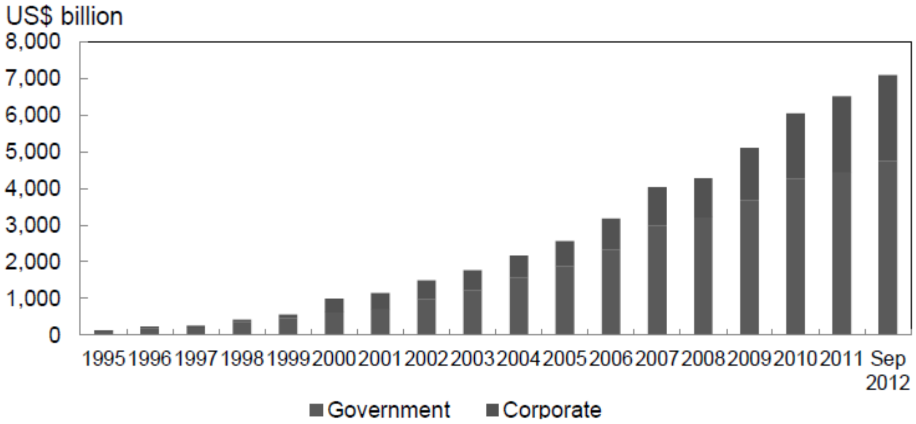
6 "Asia Needs Better Developed Bond Markets", June 2013, Asian Century Institute: http://www.asiancenturyinstitute.com/economy/250-asia-needs-better-developed-bond-markets

7 Same with 6

mismatch cost increases as developed countries' government and corporation keep lending them money in this way. Therefore, South East Asian countries (SEAs) need to promote their own currencies' bond market ratio. The practice of that kind of campaign is being advanced by Asian Development Bank (ADB). ADB took initiatives to develop local currency bond market expansion step by step. Indeed, here is data that Asian bond market after 2001. ABM has been developing at annual speed of 16%.[8] (Chart 3)

Chart 3: Growth of the Emerging Asian LCY Bond Market

Figure 1: Growth of the Emerging Asian LCY Bond Market



Notes:
1. Emerging Asia includes People's Republic of China; Hong Kong, China; India; Indonesia; Republic of Korea; Malaysia; Philippines; Singapore; Thailand; and Viet Nam.
2. For India, 3Q12 data carried over from December 2011.

Source: *AsianBondsOnline*.

◆ Historical Context of Local Currency Bond Market

As you see in the Chart 4, private local currency (LCY) ABMs in ASEAN are relatively far smaller than that of government sector. It was said that regulation took a big role to prevent private bond market system. Also for foreigners, those private bond market were not guaranteed so that they cannot be willing to purchase those bonds as foreign asset allocation strategy either. Therefore, public fostering of private institution is required. As for the former problem, ASEAN countries are making an effort to deregulate financial sector by many attempts. For instance, Indonesia increased foreign capital inflow in that they will allow up to 40% of local company's capital holding by foreign institutions in the future.[9] Next paragraph examines how ADB is coping with

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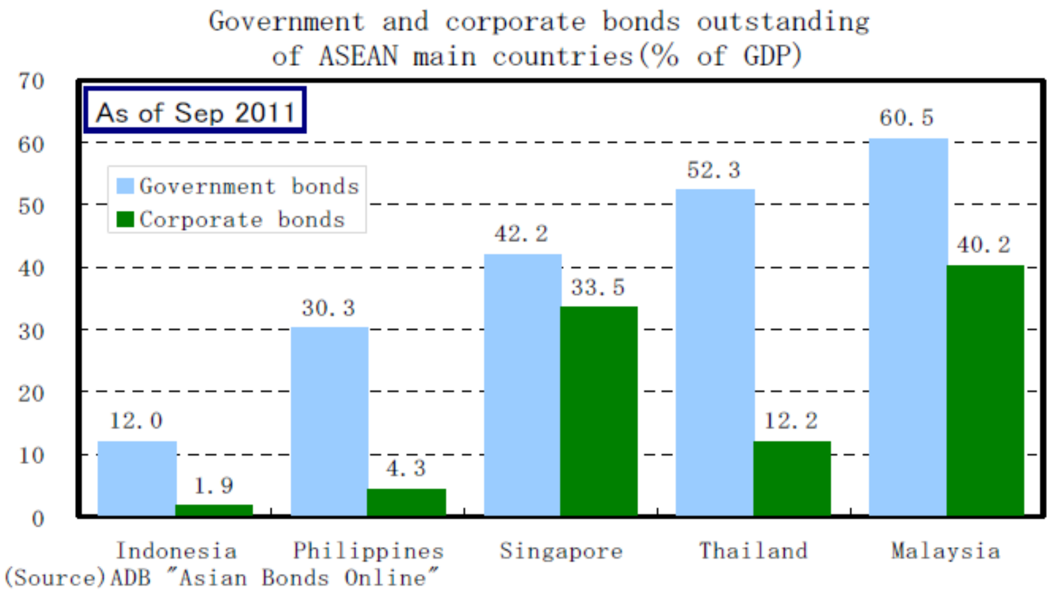
[8] Iwan J. Azis, Sabyasachi Mitra, Anthony Baluga, and Roselle Dime, "The Threat of Financial Contagion to Emerging Asia's Local Bond Markets: Spillovers from Global Crisis" Jan 2013 ADB Working Parper Series on Regional Economic Integration

[9] It was told that those processes might take many years. Permission of it by law will take several years and implementation in practice will take another several years.

the private corporation's local bond while smoothly government sector bond market had been developed for last decade. (Chart 4) According to Graph 1 it shows that while there are some countries which show maturity of bond market by comparing market capitalization, such as Malaysia and Thailand, other countries' data show that their bond market has not been in reliable capitalization source yet.

Chart 4. Government and Corporate Bonds Outstandings

(3) Government and corporate bonds outstandings



source: Takeshi Kurihara, Achievements of Asian Bond Markets Initiative (ABMI) in the last decade and Future Challenges, February 2012 OECD-ADBI 12th Roundtable on Capital Market Reform in Asia

Graph 1. Market capitalization and bonds outstanding (% of GDP)

However, as a fact, for instance many commercial banks in Japan try to purchase emerging Asian financial institution's asset, such as Ayutthaya Bank in Thailand for BTMU and BTPN in Indonesia for SMBC.

Market capitalization and bonds outstanding (% of GDP)

	Market Capitalization	Bonds outstanding		
			Government	Corporate
Indonesia	45.9	13.9	12.0	1.9
Malaysia	137.6	100.7	60.5	40.2
Philippines	70.8	34.6	30.3	4.3
Singapore	218.9	75.7	42.2	33.5
Thailand	69.6	64.5	52.3	12.2
United Kingdom	127.0	70.1	56.5	13.5
United States	92.5	167.9	76.5	91.4
Germany	31.6	78.3	52.7	25.7

(Note)United Kingdom, United States and Germany's bonds outstanding is as of June 2011.
The rest is as of Sep 2011.
(Source)ADB"Asian Bonds Online", World Federation of Exchanges, BIS, Each countries stastics

source: Takeshi Kurihara, Achievements of Asian Bond Markets Initiative (ABMI) in the last decade and Future Challenges, February 2012 OECD-ADBI 12th Roundtable on Capital Market Reform in Asia

Those above factual things are what we can see right now and they show immaturity of the market. However, LCY ABM had been developed by ADB a lot. (As shown in chart 3) First, ABM started being focused and fostered to develop by ADB after AFC. After some negotiations, it was August 2003 that government level high officer meeting that created Asian Bond Market Initiative (ABMI) was finally held in Manila the Philippines. ABMI was aimed at mobilizing liquidity of LCY bond market by transforming from long-term-existed Asian short term USD-based loan market domination. In that sense it was targeted to solve the "double mismatches"; currency mismatch & maturity mismatch, in finance sector in Asia emerging market. The background why we can foster this development of ABM is huge saving rate in Asia due to this developing economy and coming aging society.[10] Till recently, Asian high saving account was indirectly out-flown to European bond market due to its relatively higher "credibility" and Asian local bond's high "volatile". Here, obvious thing was LCY ABM was not matured to make investors trust due to above reasons.

◆ Highly Guaranteed LCY Bond Issuance System is Being Structured

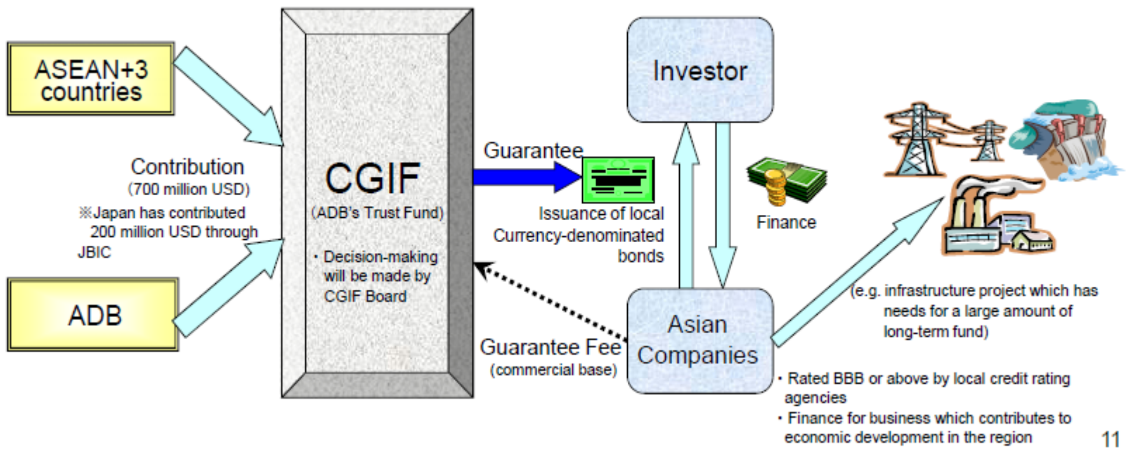
ADB established an institution called "Credit Guarantee and Investment Facility (CGIF)". The CGIF was established in November 2010 with the initial capital of

[10] It was theorized by life cycle theory that high saving rate will happen in an economically emerging country and that will continue till matured aging society comes

700 million USD. Due to conservative investment policy of institutional investors in the region, even good companies with investment grade rating by local credit agencies, had been facing difficulties in getting finance by bond market. However, establishment of the CGIF will foster private domestic currency bond market by giving guarantees for investors for the investment. This is commercially sustainable system. It is not grant system, so CGIF contributing countries, such as Japan and China, can get profit by lending.

Chart 5. The Structure of Credit Guarantee and Investment Facility (CGIF)

(source: Takeshi Kurihara, "Achievements of Asian Bond Markets Initiative (ABMI) in the last decade and Future Challenges, OECD-ADBI 12th Roundtable on Capital Market Reform in Asia", February 2012, Ministry of Finance)



Up to here, I conducted historical events analysis of ABM by looking through ABMI and newly ADB institution; CGIF which fosters further development in least developed financial sector; corporate bond market.

Next I will focus on the reasons why Asian bond market developed for last decade at this fast pace. The reason why I researched about this sector was I was not really convinced by the conditions that inter-government level conference and that implementation would have made every progress. The below is categorized largely by economic and political reasons. They will explain more inclusively about ABM development.

◆ Asian Bond Market Maturity Conditions

1. Political Perspectives

- **Regional International Organizations**

- ADB is taking initiative to mature local currency bond market
  (IMF is, in opposite, reluctant to take any initiative regarding regional bond market evolution though IMF chairman, once, mentioned regional development of financial market is good).

- **Each government Level Motive-Components why it does not work any more**

  Failure of Good Management of Monetary Policy[11]

- In floating exchange system, monetary policy is just effective for appreciation of local currency time by lowering interest rate policy.
- Depreciation time, to prevent it from furthering, central government needs to increase interest rate, but it cannot be implemented with consecutive domestic market demand decrease.
- However, they cannot take a measure to foster their domestic market consumption, like inflation targeting because if they ease money, their loan "real" payment amount will go up due to depreciation of their currency.
- Therefore, each small state (In macroeconomics definition) cannot help but shift to local currency bond market to hedge the currency risk to happen

2. Economic Perspectives

- **Supply Side Analyses**

  Global Trend

- After global financial crisis, world prefers bond market more for a long term rather than equity and other high risk assets in secondary market.[12]

  High dependency domestic commercial banks

  High Dependency on Domestic Commercial Banks & its Future Expansion

- Also, SEAs' society will have been accumulating high saving rate due to preparation of House Hold for its coming aging society.[13]

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[11] Morris Goldstein and Philip Turner, "Controlling Currency Mismatches in Emerging Markets", Chapter 2 "Why Currency Mistaches Matter", P.18

[12] Alex Sienaert, "Foreign investment in local currency bonds-Considerations for emerging market public debt managers", Dec 2012, The World Bank Policy Research Working Paper, P. 2

[13] "Asia Needs Better Developed Bond Markets", June 2013, Asian Century Institute:

- Compared to Latin America, Southeast Asian countries (SEAs) reply on local commercial banks loan. That means they need better potential in lending by their own currency and also it is more feasible than Latin America in that they can establish their domestic borrowing market system by high domestic saving rate more than Latin America which procure money from directly foreign volatile market including US[14]

➢ **Demand Side Analyses**

- Borrowers prefer their own currency to avoid currency mismatch (Graph2)
  As the graph shows, countries in Asian region increased the dependence on external "short term" debt till especially before AFC. That caused the mismatches not to be able to pay back the debt.
- Borrower, whether public or private in SEAs, they prefer lower risk and interest rate lending compared to short term (maturity mismatch) & higher interest rate local commercial bank loan deals.

Graph2. Currency Mismatches

Table 2.1 Proxies for currency mismatches before the Asian crisis, 1995–99 (percent of foreign exchange reserves)

	Short-term external debt					M2				
Country	**1995**	**1996**	**1997**	**1998**	**1999**	**1995**	**1996**	**1997**	**1998**	**1999**
Indonesia	208	197	224	113	75	719	661	470	318	345
Korea	184	222	330	76	59	1,498	1,541	1,548	1,022	802
Malaysia	35	44	75	39	27	323	354	353	288	281
Thailand	124	125	152	88	45	371	391	358	457	383
Memorandum:										
Latin America	118	109	105	102	98	426	393	407	431	452

M2 = broad monetary liabilities

Sources: IMF's *International Financial Statistics*, national sources, and Bank for International Settlements.

For those above reasons, LCY bond market development was cooperatively conducted. Of course there are a few counter parts. First, US will get less benefit by them. Thus, if local currency bond market increases, US currency mobility decreases,

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http://www.asiancenturyinstitute.com/economy/250-asia-needs-better-developed-bond-markets

[14] Morris Goldstein and Philip Turner, "Controlling Currency Mismatches in Emerging Markets", Chapter 2 "Why Currency Mistaches Matter", P.11-19

then that means their currency hegemony power will decline. In more economics' sense, it means US has to exchange her own currency to give aid to those countries. However, since the power balance change to more local currency bond market from that of USD at some point makes a shift to lower interest rate in local currency and also SEAs local entities decide to borrow more money in local secondary market (Demand shift to local currency market), therefore, US cannot deny ABM local currency expansion once it conducted deeply. Here real problem about ABM was not those political rivalry/friction but financial market own problem. Thus, ABM has a problem not to be able to expand its market smoothly.[15] ABM is feeling hard to manage both procurement of more money and market volatile risk management. If they think about inclusion of foreign participation (FP), every last question they face to consider is whether they are just speculator or true business partner. It is from the experience Asian countries faced in AFC. Asian nations suffered a lot by the last regional crisis. For them, FP will still be speculator who, in a case, suddenly, change their decision and make Asian countries in danger. However, there is a recommendation which rather promote that ABM should expand with foreign investors.

◆ Lingering Shortcomings on Bond Market

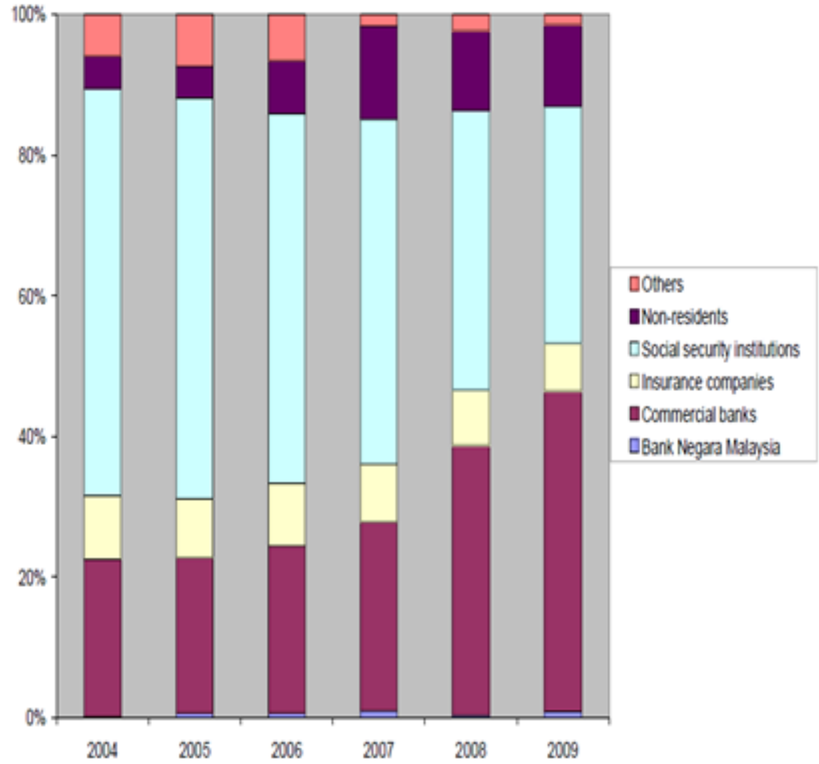
A. Lack of Domestic Participation

Last paragraph I insisted that although local currency bond market has been improving and expanding its absolute amount, it is still far behind to attract foreign investors' participation to complete its expansion engine. (Remind Graph 1; ABM is still on the long way to expand fully and here the assumption is due to foreign market entrance) As the chart 6 & 7 show, for instance, relatively immature bond market (Indonesia) is consisted of more FP compared to relatively matured LCY bond market country (Malaysia).

Chart 6: Malaysian LCY bond market lenders

(Office of Regional Economic Integration Asian Development Bank, (2009) "AMBI Directory of institution investors in the ASEAN+3 bond markets " P. 34-37)

[15] As I cited in citation no. 9, Asian bond market need foreign money inflow more in many sector to expand their market.

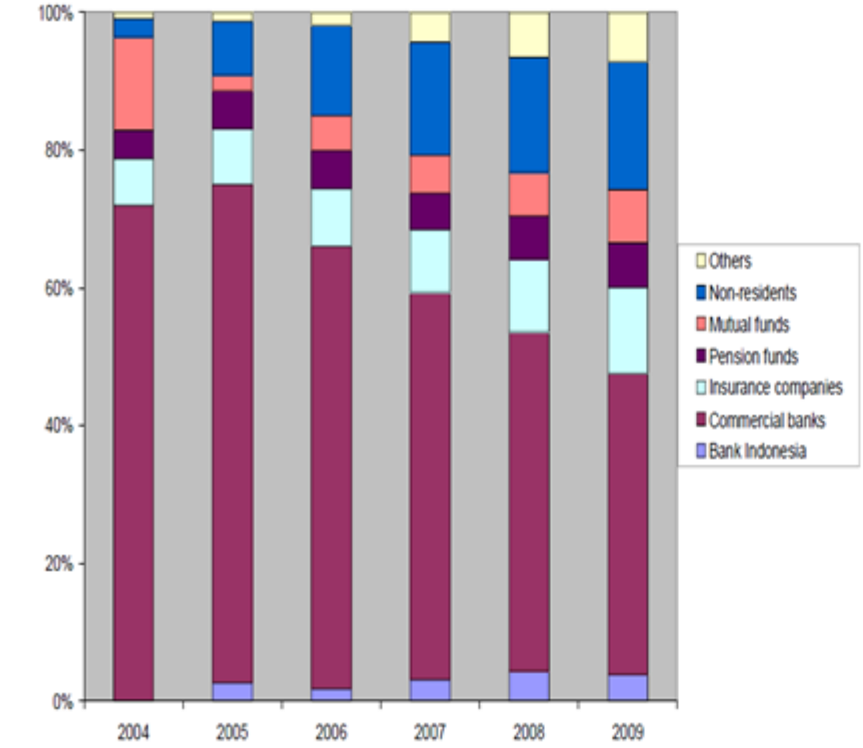


Source data: AsianBondsOnline

The above data is for December each year to 2008, and for September 2009. As at September 2009, commercial banks held 46% of government bonds, insurance companies 7% and social security institutions 34%. Non-residents held 12%.

Chart 7: Indonesian LCY bond market lenders

(Office of Regional Economic Integration Asian Development Bank, (2009) "AMBI Directory of institution investors in the ASEAN+3 bond markets " P. 54-57)



Source data: AsianBondsOnline

The above data is for December each year. As at December 2009, commercial banks held 44% of government bonds, insurance companies 12%, pension funds 6%, and mutual funds 8%. Non-resident investors held 19%.

Why those two has difference between their bond markets' participants? The scenario is that if the aging society benefit to local bond market increased due to more job market entry than job market exit (retirement), therefore the society will increase its secondary market capitalization due to more savings.[16] (Life Cycle Model Theory) Now, Southeast Asian countries are on this stage, thus every country has more market entry than out. As we can see here, Malaysia has far more social security institutions participation than that of Indonesia (categorized as "Pension funds" there). In conclusion here with the Chart 4, Malaysia has more saving money than Indonesia and that makes the difference we can see in Chart 4. In next chapter, I discuss a contradicted result of what we have examined here.

B. Empirical Research for ABM Expansion

[16] Takatoshi Ito, The University of Tokyo GraSPP, "Japanese Economy", 2013 Spring semester

There are some empirical research results. One of them is Peiris' research. His research shows that when 1% foreign participants commitment is added to local currency bond market, actually 6bps bond yield declines.[17] That is the empirical experiment result. With this important proof, other proofs and Implications why foreign market participation will increase are follows. First, local currency mobility has limitation and LBM divests, so foreign investors are needed to inject capital to the market. (Market Size Expansion). Second, foreign investors need more transparent information disclosure. Therefore, corporation in the market will become more reliable to account themselves internationally to further investment. Behind the second reason, finally, that is transacted by the fact that government tried to make safety net to try to mitigate investors risk by regulation and guarantee, such as pay off. Therefore, foreign participants' involvement should be more encouraged in the future.

Equation 1.

$$Lr_{it} = \alpha_i + \beta_1 Sr_{it} + \beta_2 \pi_{it} + \beta_3 b_{it} + \beta_4 D_{it-1} + \beta_5 M_{it} + \beta_6 GDP_{it} + \beta_7 USr_{it} + \beta_8 CA_{it} + \beta_9 FP_{it} + \varepsilon_{it}$$

Extracted variable introduction;
Lr=Nominal Yield, i=country "i", t=period "t", FP=Foreign Participation

Also, next one is explanation of foreign participation effect on volatility. It shows that foreign volatility does not go up due to foreign participation. Rather, what it showed is good relationship from foreign participation to volatile decrease. Therefore, foreign participation to LCB market is necessity both to develop the country more and also to stabilize the bond market more. Of course, I think I should consider qualitative standard which will also decide those foreign participants market entrance. As for that, ABMs' regulative improvement will be strongly required. However, here, I want to conclude that foreign capital injection in ABMs is very crucial as these equations show.

Equation2&3

[17] Shanaka J. Peiris, "Foreign Participants in Emerging Markets' Local Currency Bond Markets", Apr 2010, IMF Working Paper

$$Lr_t = \theta + \sum \theta_j \ Lr_{t-j} + \varepsilon_t$$
$$\varepsilon_t \sim N(0, \sigma^2_t)$$
$$\sigma^2_t = \exp(\varphi + \gamma \ FP_t) + \alpha \ \varepsilon^2_{t-1} + \beta \ \sigma^2_{t-1}$$

Extracted variable explanation; Lr=Nominal Long Term Local Currency Bond Yeirld, σ 2=a measure of its volatility, FP=Foreign Participation

Graph3

Table 3. Fixed effects estimates of long-term yields (2000Q1–2009Q1)

Policy interest rates	0.12** (4.63)
Inflation	0.16** (5.26)
Fiscal deficit	0.05* (1.74)
Foreign participation	-0.06** (4.71)
Current account deficit	0.13** (5.08)
U.S. Interest Rate	0.45** (3.54)
Constant	5.38** (15.82)
R-Square (within)	0.40
F-statistic	129.3

The t-statistics are in parentheses
** significance at the 5 percent level
* significance at the 10 percent level

◆ Whether less Volatility or more Market Expansion?

As the research shows, ABM should receive more foreign participation in its bond market with the empirical research. However, in reality, it does not necessarily guarantee the increment of bond market capitalization. (Chart 4)

6. Conclusion

First in order to clarify the background of current financial circumstances in

Asia, I investigated Asian Financial Crisis and figured out reasons why Asian Financial Crisis happened. Later, I divided the reasons into two parts, namely lack of enough foreign reserve and bond market immaturity. The former one was coped with IMF, ADB or giant country mainly. Yet until now, Asian bond market has been still immature in some countries. I tried to specify the problem reason underlying ABMs right now. I did reasoning and also empirical research application. The former result shows that Asian bond market has a characteristic that social security maturity makes more capitalization. However, in the empirical research, it suggested that ABMs, as the next step, need foreign capital injection". Here my research significant point is though the empirical foreign participation analyses are from existing papers, however, I compensate for the lack of the empirical research. There are two different reasons about more market capitalization of the bond markets and less volatility. Although it seems like it is possible to solve high volatility problem in emerging Asian bond market, however it does not necessarily guarantee more capitalization of the bond market. (It is very important to capitalize the bond market more to develop the market further!) As the next research step, I would like to research more specifically so as for this research paper to be able to be more reasonable. For instance, the empirical research includes all emerging Asian countries data so that I could not specify it is the reason why some Asian bond market countries are less matured.

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