

East Asian Bond Markets and Economic Growth

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Abstract. Although the relationship between stock market and growth has attracted many researchers, studies on debt-growth link however is very limited. This article examines the relationship between debt markets and economic growth. Three categories of debts are considered in this analysis using data from China, Hong Kong, Japan, South Korea, and Thailand for the year 2002 - 2009. Results show that for the region in general, public and private debts contribute significantly to the growth of the region. The significant contribution of debt markets to GDP, however, is not common for all countries in the sample and varies according to the category of debt issued. Both the public and foreign currency debts contribute significantly positive to South Korea's GDP, but only public debt contributes significantly positive to the growth of China and Hong Kong. As for Japan, none of the debt markets has any impact on its GDP.

Keywords: Financial Development, Debt Markets, Economic Growth

1. Introduction

From the year 2000 to 2011, the Asian economy has enjoyed an average GDP growth of approximately 5.2% per annum. The People's Republic of China (PRC) exhibited the highest average gross domestic product (GDP) growth throughout the period, followed by Singapore, Indonesia, Malaysia, Philippines and Thailand. In spite of the global financial crisis in 2008, these countries witnessed strong growth rates ranging from 1.1% in Singapore to 9.0% in the PRC in 2008 (ADB, 2009). This strong momentum is likely to continue in the coming years with the aggregate growth of the region is forecasted to be 4.9% in 2012.

Prior to this enormous growth, the East Asian region was shocked by a huge financial crisis during 1997-1998. Various efforts were taken in several areas to address the weaknesses that contributed to the crisis, and the structure of financial institutions and markets were among the arena. Back in the 1980s to 1990s, due to the underdeveloped and small capital markets in the region, firms were depending excessively on commercial banks for domestic financing. These financing are in short-term basis and are denominated in foreign currency. This has led to the problem of 'double mismatch' or 'twin risks', namely maturity and currency risk (Bhattacharyay, 2011), making the region vulnerable to changes in short-term capital flows. To avoid this double mismatch risk in the future, there is therefore a need for corporate borrowers to sought financing from well-diversified portfolios, particularly through bond market. This has called for the development of local currency bond markets in the region. Following the ASEAN+3 Finance Ministers' Meeting held in August 2003 in Manila, the Asian Bond Markets Initiative (ABMI) was established. One of the objectives of ABMI is to develop efficient and liquid bond markets in Asia.

Since the introduction ABMI, China has witnessed the largest growth in its total local currency bond market capitalization with an increase of nine times more from USD337 billion in 2003 to about USD3392 billion in 2011. This is followed by Thailand, with an increase of almost four times more. Hong Kong, Japan and South Korea also experienced growth in their bond market capitalization but only an increase of about 1.5 times more from 2003 to 2011. A closer analysis of this market and breaking up the market into two groups according to issuer, public or private issuer, shows that China still leads other countries in the region with an increase of almost seven times more of its public debt and double digit growth of its private debt. For bond market capitalization of the public issuer, Hong Kong comes in second after China, followed by Thailand, South Korea and Japan. Growth size for bond market capitalization of private issuer, however, are far more smaller for other countries compared to China.

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As for foreign currency bond, all countries except Thailand experience steady growth in terms of the amount issued for the 2003-2011 period. South Korea leads other countries with an increase of more than 200 percent, followed by China, Hong Kong and Japan with an increase of 157 percent, 154 percent and 73 percent, respectively. As for Thailand, the amount of foreign currency bond issued increased from 2004 to 2006, but gradually fell soon after, so much so that by the second quarter 2010, the amount issued was at its lowest at USD8.02 billion, lowest since 2002.

While the relationship of stock market and economic growth has attracted wide attention (e.g. Atje and Jovanic, 1993, Levine and Zervos, 1998; Harris,1997; Leahy et.al. 2001; Hahn, 2002), studies on the bond market-growth link, however, is very limited. In this paper, therefore, the growth-debt markets link is investigated in more detail where debt is broken into two groups: local and foreign currency debts. The local currency debts is further classified into two groups according to the type of issuer, public or private issuer.

2. Literature Review

The view that financial assets trigger economic development begins with the work by McKinnon(1973) and Shaw(1973). They argue that financial repression – indiscriminate ‘distortions of financial prices including interest rates and foreign-exchange rates’ – reduces ‘the real rate of growth and the real size of the financial system relative to nonfinancial magnitudes (Fry, 2012). Since then, there has been a long debate and growing literature on the role of financial sectors in promoting growth, focusing mostly on banks and stock markets. Conducting cross-country analysis of 80 countries, King and Levine (1993) show that bank development lead to economic growth. Their findings are supported by Levine (1998, 1999); and Beck, Levine and Loayza (2000). Stock markets mobilise savings, and the more efficient savings are mobilised, the more capital will be accumulated for firms to tap on to finance their investments. This, therefore, spurs economic growth (Levine and Zervos 1998, Adjasi and Biekpe 2006). Studies on financial market in emerging market mostly focus on equity markets, and bond markets are completely not attractive to be investigated. One possible explanation is that in most emerging countries, bond markets are relatively small compared to the banking system or equity market (Herring and Chatusripitak, 2000). The limited availability data of bond markets, including for the developed countries, is another reason why this market has been overlooked in most financial development-growth link studies.

Bank financing as well as equity markets have emerged at a much earlier stage than bond markets. However, recently, bond market financing has overtook borrowing from banks especially for advanced economies. Bond market development is regarded critical to the strengthening of the financial system. Well-functioning of these markets expand the array of financial assets available to investors. Hakansson (1999) documents several advantages of a well-developed bond market. He argues that a well-developed bond market will foster an efficient corporate financial structure. He further argues that elements of a well-developed bond market such as greater transparency of financial reporting system, large and strong community of financial analysts and the existence of efficient mechanism for corporate reorganization and liquidation will enhance economic welfare of the country.

Herring and Chatusripitak (2000) considered the consequences of not having a well-functioning bond market and its implication to savers, investors and banks. Their findings are consistent with Hakansson (1999) and concluded that the lack of a well-functioning bond market may reduce the efficiency of an economy, and hence may increase its vulnerability to a financial crisis. To strengthen East Asian countries’ financial structures and and at the same time reduce their vulnerabilities to future financial crises, Fabella and Madhur (2003) suggest that the development of domestic markets in the region is utmost important.

In developed economies, the increasing importance of bond markets has contributed to the growing literature on the role of bond markets in economic growth. In the euro area, the introduction of the single currency euro has led to the increase in the corporate bond issuance. Employing data of the euro-denominated debt securities for period January 1999 to June 2001, DeBondt (2002), concluded that corporate bonds spread have significant predictive power for output growth. His finding is inline with earlier finding of Gertler and Lown (1999) who conclude that high yield bond spread contains statistically significant information for the US aggregate economic activity.

Hyun and Jang (2008) asserts that for most countries in Asia, the bond market is still at infant state and very small in size and are therefore are not capable to bear the burden of developing a developed market. The participation from foreign investors are therefore critical in the growth of these markets. However, these markets are inaccessible even to a majority of East Asian borrowers which have contributes to their illiquidity. Herring and Chatusripitak (2001) argue that bond markets are central to the development of the economic system of a country, and there would be additional benefits if bond markets are developed as these markets provide greater investment opportunities for investors and help deepen the financial markets. This in turn will attract foreign investors into the markets.

In line with arguments presented by Herring and Chatusripitak (2000) and using data from thirteen developed countries for the period 1950 to 2000, Fink et.al.(2003), found that for three of the sample countries, there is an evidence of interdependence between the bond sector growth and the real sector growth, and supply-leading causality from bond market capitalization change to real growth in ten other sample countries is supported. The bond market–growth link has also been investigated by Abbas and Christensen (2007). Their study analysed domestic debt in developing countries for the period 1975 to 2004 and found support for a positive contribution of debt market to economic growth.

3. Data and Methodology

The limited availability of information on debt securities for most countries in the East Asian region has been a major constraint of this study. Out of nine countries that was initially considered for this international comparison, only five countries were finally sampled and they are China, Hong Kong, Japan, South Korea and Thailand. To avoid the influence of financial crisis that hit the region beginning the year 1997, only data for the period beginning 2002 were gathered. In sum, this study data set comprising five countries for the period that runs from the fourth quarter 2002 to the fourth quarter 2011. These data were extracted from two sources. The local currency bond data is extracted from Asian Bonds Online, while the foreign currency bond is extracted from Bank for International Settlement Quarterly Review. The dependent variable, the economic growth which is represented by real GDP is obtained from EIU database.

In addition to the above three measures, a set of variables that captures country-specific structure is used in the empirical estimation as control vectors. Controls vectors used in Patillo et.al (2002) were considered. However, due to the limitation of those variables for the quarterly data, most of the variables were dropped and finally only three variables were employed as control vectors. These variables are inflation, money growth and interest rates. All these data are extracted from the EIU database.

The link of growth-debt for each individual countries is performed and estimated using the following equation:

$$GROWTH_{it} = a + bX_{it} + cPU_{it} + dPR_{it} + fFCY_{it} + e_{it} \quad (1)$$

where $GROWTH_{it}$ represents per capita growth of country i at year t , X_{it} is the control variables for country i at year t , PU_{it} represents the public debt issued by country i on year t , PR_{it} is the amount of private debt issued and finally FCY_{it} represents the amount of foreign currency debt issued by country i on year t . All variables are in natural logarithm except for interest rates.

4. Results and Discussions

Estimation of equation 1 provides direct influence of debt market development on growth. This estimated regression also generate additional insights into the experience of each individual countries. Table 1 below shows the estimations for the debt-growth link for all samples (Panel A) and for individual countries (Panel B).

Table 1: Relationship of Public, Private and Foreign Currency Debts with GDP

Country		Constant	ln(pu)	ln(pr)	ln(fcy)	ln(Inf)	ln(m2)	int	R ²
Panel A All Countries	<i>Coeff.</i>	18.014	1.105	0.382	0.073	-4.459	-0.378	0.044	0.963
	<i>t-stat</i>	7.191**	32.630**	5.902**	1.301	-8.764**	-9.853**	2.243**	

Panel B									
China	<i>Coeff.</i>	11.768	0.117	0.017	0.029	-0.028	0.359	0.009	0.998
	<i>t-stat</i>	11.451**	5.301**	1.064	1.018	-0.155	8.937**	3.811**	
H. Kong	<i>Coeff.</i>	5.342	-0.009	0.132	0.136	-0.607	0.535	0.004	0.903
	<i>t-stat</i>	1.933*	-0.328	0.428	1.851*	-0.913	2.174**	0.383	
Japan	<i>Coeff.</i>	46.119	1.107	-0.109	0.032	-1.398	-0.337	0.039	0.633
	<i>t-stat</i>	4.523**	0.888	-1.646	0.275	-1.472	-1.162	1.919*	
S.Korea	<i>Coeff.</i>	16.116	0.033	0.049	1.155	0.088	0.102	0.008	0.993
	<i>t-stat</i>	10.659**	2.551**	1.363	2.366**	0.315	1.656	2.852**	
Thailand	<i>Coeff.</i>	23.951	0.251	0.076	-0.051	-0.734	-0.102	0.014	0.899
	<i>t-stat</i>	4.659**	2.167**	1.339	-0.377	-1.511	-0.686	1.347	

Single asterisk (*) indicates significance at 10% level and double asterisks (**) indicates significance at 5% level.

As shown by results in Panel A, public debts and private debts contribute significantly positive to the growth of the region in general. The coefficient for both of these categories of debt are significant at 5% level. The findings suggest that, in general, the heavier issuance of public and private debts in the Asian region following the 1997 financial crisis has enabled the region to recover from the crisis and eventually contributed to the growth of the region. Although the debt markets of the region have not been expanding relative to GDP as argued by Mieno et. al (2009) and Felman et. al (2011), the importance of these markets, in particular the private and public debt markets, are felt from the findings of this paper. Mieno et. al (2009) and Felman et. al (2011) further argue that the only way for the debt market to consistently expand relative to GDP is by attracting more foreign investors through the issuance of foreign currency bond. Certainly, this is not true as evidence from the results presented in Panel A, where foreign currency bond do not provide any significant contribution to GDP of the region.

Nevertheless, the significant contribution of debt markets to GDP is not common for all countries in the sample and varies according to the category of debt issued. For South Korea, both the public and foreign currency debts contribute significantly positive to its GDP. Only public debt contributes significantly positive to the growth of China and Hong Kong, with the largest contribution is evidenced for China. This is not surprising for China where from the total debt issued in the country in 2002, more than fifty percent are public debts. As for Hong Kong, public debts and private debts make up only twenty-two percent and seven percent of total debt issued in 2002, respectively.[†] This indicates that both public and private debts contribute minimum importance to the country. This indication is reflected in the findings of the empirical analysis that show both public and private debt are not significant in contributing to the growth of the country. The continuous interest of foreign investors on Hong Kong debt markets has seen the amount of foreign currency debt to grow and eventually contributes significantly positive at 10% level to the country's GDP as evidence from results presented in Table 1.

Finally, the debt-growth link fails to be true for Japan for all categories of debts. Similar to China and Thailand, a bulk of debt were issued by governments. However, unlike China and Thailand, this category of debt fails to contribute to GDP of Japan. The same can be said about private and also foreign currency debt issued in Japan. Broadly speaking, the hypothesis that suggest debt market matters for real growth as forwarded by Fink et.al. (2003) can be supported by all countries except Japan although Japan has the highest average ratio of bond market capitalization to GDP for the year 2001 to 2009 among all five countries in the sample.[‡] The fail link in Japan can be attributed to several factors. Among them is the enormous fiscal deficit that Japan has carried for several years. It is well known that Japan's economy has been very bad for the past two decades which has witnessed the nation's debt to GDP ratio has hit more than 400 percent in the year 2000. Due to this deficit and although Japan is one of the two countries in Asia (the other one is South Korea) with developed bond markets, the amount of debts issued in the country, be it public, private or foreign currency debt, has failed to improve the GDP of the country. In conclusion, it is therefore important for each country to make continuous effort to maintain a stable macroeconomic environment, as a precondition for efficient bond market (Hyun and Jang, 2008) that eventually contributes to the growth of the country.

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5. Conclusion

Continuous efforts have been made by various agency in promoting debt markets in the asian region since the 1997/1998 financial crisis. Although these efforts may seem successful in increasing the amount as well as the type of debts issued, its contribution to the growth of the countries is rather limited. The amount of debts issued is also said to be insufficient compared to the advanced countries. Thus, the ultimate effect of debt markets development on growth maybe critically influenced by the amount of debts issued for each category of debts. However, further detail studies are called for prior to commonly accepted consensus.

6. References

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