Volume 39, Issue 3

Bond Market Development in Malaysia: Possible Crowding-Out from Persistent Fiscal Deficits?

Meng-wai Lee
Faculty of Economics and Administration, University of Malaya

Kim-leng Goh
Faculty of Economics and Administration, University of Malaya

Abstract

In Malaysia, infrastructure financing requirements can be served through domestic bond markets, including its corporate bond markets. However, financial crises have exacted a heavy toll on government debts, which are often funded by issuance of government bonds. Persistent fiscal deficits and growing issuance of government bonds can become a double-edged sword and result in crowding-out of private bond markets. This paper represents a first attempt to analyze the potential determinants of the domestic corporate bond market in Malaysia to facilitate a closer examination of the possibility of crowding-out on the Malaysian corporate bond market. This paper finds no evidence of crowding-out effects on Malaysia's domestic corporate bond market from the country's growing government debt. Importantly, findings strongly suggest that the well-functioning Malaysian government bond market has served as a strong foundation for the growth of its domestic corporate bond market.

1. Introduction

In the wake of the financial crises in the mid to late 1990s, it is increasingly recognized that deep and liquid financial markets, especially government bond markets, are necessary in ensuring a robust financial system. There is also consensus that Asia's massive infrastructure financing requirements can be best served through domestic bond markets, including its corporate bond markets (e.g. Park, 2016).

The legacy of Asian financial crisis remains with an indelible impact on Asia. In its aftermath, research into its causes highlighted the over-dependence of Asia, including Malaysia, on the banks for financing its massive investments during a period of economic prosperity (Kaminsky and Reinhart, 2001; McLeod and Garnaut, 1998; Woo et al., 2000). Concentrating credit intermediation on banks, which tended to be highly leveraged entities, made those economies more vulnerable to crises. Better developed bond markets, resulting in more complete financial markets, would have helped to reduce the currency, interest rate and funding exposures that precipitated the Asian financial crisis (Harwood, 2000; Herring and Chatusripitak, 2000; Pettis, 2000). As such, the crisis underscored the need for Malaysia and other developing countries to make greater efforts to further develop and diversify their financial systems, including their underdeveloped domestic bond markets.

However, various studies have also shown that financial crises have exacted a heavy cost on economies' government debt as public expenditure soared, including for bank recapitalization (Borio et al., 2016; Hauner, 2009; Reinhart and Rogoff, 2013). In fact, the more severe such crises, especially when output and asset prices collapsed, coupled with currency depreciation, the greater the impact on public expenditure and public debt.

Studies by Burger and Warnock (2006), and Eichengreen and Luengnaruemitchai (2004) found that budget deficits were a significant determinant of public bond or debt market capitalization, but not private debt capitalization. It would appear that public-sector deficits do not encourage private debt issuance. However, McCauley and Remolona (2000) highlighted Japanese issuance of domestic corporate bonds for 1998 was a record high even as the country's government bond market became the world's largest, on the back of continued fiscal deficits.

Nevertheless, as Bae (2012) highlighted in his study on domestic bond markets covering 43 advanced and developing countries, including Malaysia, a well-functioning government bond market was a major driver behind corporate bond market development. It is also feasible for governments to begin with developing government bond markets as the government bond market is an important foundation for the corporate or private bond market (Essers et al., 2015; Harwood, 2000; World Bank and International Monetary Fund [IMF], 2001).

For Malaysia, to counter the effects of the Asian financial crisis on its economy, the government undertook countercyclical measures beginning 1998. In financing its deficits, the Malaysian government has traditionally favoured non-inflationary domestic sources (such as issuance of government bonds) with some borrowings raised from external sources (e.g. Ministry of Finance, 1998). Even though the raison d'être for developing bond markets is to help governments fund their budget deficits in a non-inflationary way, Malaysia's experience of persistent fiscal deficits raises the likelihood of crowding-out effects on its domestic corporate bond market. In light of these developments, there were grave concerns about the

effect of crowding-out on the private sector. These possible effects, however, have not been investigated. This paper represents a first attempt to analyze the potential determinants of the Malaysian domestic corporate bond market in a closer examination of the possibility of crowding-out on its corporate bond market. The relevance of this paper's findings rests on the growing importance of domestic bond markets, including corporate or private bond markets, to meet surging infrastructure financing within Asia even as emerging economies may simultaneously grapple with growing demand for government spending to boost economic growth following financial turbulence.

This paper is organized as follows. Section 2 discusses the data and methodology. Section 3 analyzes the empirical results while Section 4 concludes.

2. Data and Methodology

Similar to the studies by Bae (2012) and Eichengreen and Luengnaruemitchai (2004), this paper utilizes secondary data from the Bank for International Settlements (BIS) website. Quarterly data on the Malaysian domestic bond market, for the government and corporate debt segments, were available beginning Q4, 1993. However, as of January 2012, arising from the global financial crisis, the BIS has changed its definition for its categories of domestic debt securities (Gruic and Woodbridge, 2012). This revision to the BIS's debt securities statistics was made following the 2008-09 subprime crisis to facilitate comparability across different markets.

As a result of the changes implemented by the BIS in 2012, the sample period for this paper has been confined to Q4, 1993 to Q4, 2011 so that this paper can utilize data based on the old BIS categorization. This choice was made due to the two important considerations:

(a) Under the new definitions by the BIS, data on Malaysian domestic debt securities are available only from 2005 onwards. Starting with data from 2005 will result in this paper not being able to cover crucial years, i.e. from 1993 to 1997 when Malaysia was running a balanced or surplus government budget, and from 1998 to 2004 when the government initially embarked on expansionary fiscal policies and incurred persistent and growing fiscal deficits.

(b) Before the changes made by the BIS, government or public bonds included both government and central bank issued bonds. This earlier definition was the same as that used to-date in Malaysia for classification of government bonds (Bank Negara Malaysia and Securities Commission, 2009). During the sample period for this paper, there were occasions when Bank Negara Malaysia issued bonds to achieve specific objectives in conjunction with the Malaysian government. Hence, using BIS data series with the new classification, where bonds issued by the central bank are grouped with bonds issued by financial institutions, would have resulted in different and possibly misleading findings for Malaysia's government bond segment.

Other data for the paper are obtained from Bank Negara Malaysia, the IMF, including International Financial Statistics, and CEIC (a provider of economic data). The published data from the BIS and those on Malaysia's banking sector and government debt, which are of quarterly frequency, were deseasonalized.

Identification of independent variables for this paper has been guided by the various studies on bond market development especially in Asian countries. The state of development

of Malaysia's domestic bond market and its domestic corporate bond segment, as measured by market capitalization, is expected to be influenced by the following macroeconomic factors:

(a) Growth of economy, represented by annual GDP growth rate. Growth of an economy may influence domestic bond market development (see, for example, Bae, 2012; Eichengreen and Luengnaruemitchai, 2004; La Porta et al., 1997; Mihaljek et al., 2002).

(b) Openness of economy, represented by trade over nominal GDP. This measure of openness of the economy is expected to have a positive effect on bond market development (Bae, 2012; Eichengreen and Luengnaruemitchai, 2004; Essers et al. 2015; Rajan and Zingales, 2003).

(c) Size of banking sector, represented by bank loans outstanding over nominal GDP. In the case of Malaysia and other Asian economies, banks traditionally dominated their financial systems and have "first-mover advantage" (Bentson, 1994; Burger and Warnock, 2006; Eichengreen and Luengnaruemitchai, 2004). Since the banking sector and bond market would be competing sources for providing external financing to entities needing funds, one can postulate a negative relationship between domestic bond markets and banking sectors (Herring and Chatusripitak, 2000; Essers et al., 2015). Nevertheless, there are complementarities and economies of scale that can be reaped in joint development of the banking sector and domestic bond market (Bae, 2012; Bhattacharyay, 2013; Burger and Warnock, 2006; Eichengreen and Luengnaruemitchai, 2004; Park, 2016).

(d) Concentration of market share in banking sector, represented by bank concentration ratio, which is assets of the largest bank over total assets of all commercial banks in Malaysia. The concentration of power that a big market share endowed the top banks in any country may be utilized by the same banks in making bond issuance difficult or unattractive, including cost-wise for prospective bond issuers (e.g. Bae, 2012; Beck et al., 2003; Bentson, 1994; Eichengreen and Luengnaruemitchai, 2004; Rajan and Zingales, 2003; Schinasi and Smith, 1998).

(e) Size of equity market, represented by equity market capitalization over nominal GDP. In Malaysia, the equity market can also be said to have "first-mover advantage" as the equity market was developed ahead of the bond market. Additionally, where the equity market is concerned, its size or market capitalization can also be used as a proxy for the level or extent of development in a country's capital market (Bae, 2012; Claessens et al., 2007; Garcia and Lin, 1999; World Bank and IMF, 2001).

(f) Exchange rate, represented by ringgit Malaysia against US dollar. Bae (2012) found that exchange rate movement was negatively related to government and corporate bonds (see also Eichengreen and Luengnaruemitchai, 2004). However, since domestic or local currency bonds are issued for funding purposes, they are, to some extent, substitutes for other types of borrowings, including foreign borrowings or international bond issuance (Turner, 2012).

(g) Government bond market, represented by government bonds over nominal GDP. Developing the government bond market first will provide the needed benchmark yield curve for subsequent pricing of corporate bond issues (Bae, 2012; Schinasi and Smith, 1998; World Bank and IMF, 2001).

(h) Government debt, represented by government debt over nominal GDP. Since government bonds are issued by the government or public sector to finance its expenditure, studies on bond market development have established a positive relationship between government bonds and domestic bond market capitalization with government debt (Bae, 2012; Claessens et al., 2007; Eichengreen and Luengnaruemitchai, 2004; Essers et al., 2015; Park, 2016).

An autoregressive distributed lag (ARDL) model is first employed to determine if a long-run relationship exists between the level variables (Pesaran and Shin, 1999; Pesaran et al., 2001), as below:

$$\Delta y_t = \beta_0 + \beta_1 y_{t-1} + \sum_{i=1}^{m} \beta_{2i} x_{i,t-1} + \sum_{i=1}^{p} \propto_i \Delta y_{t-i} + \sum_{i=0}^{p_1} \gamma_i \Delta x_{1,t-i} + \cdots$$

$$+ \sum_{i=0}^{p_m} \theta_i \Delta x_{m,t-i} + \sum_{i=1}^{4} \varphi_i D_{it} + u_t \qquad (1)$$

where y, the dependent variable is corporate bond over nominal GDP (CB_t). The independent variables $x_1, \ldots, x_m$ are annual GDP growth rate, trade over nominal GDP, bank loans outstanding over nominal GDP, bank concentration ratio, equity market capitalization over nominal GDP, logarithm of exchange rate, government bonds over nominal GDP and government debt. The error term is represented by u_t, and p, p_1, …, p_m are number of lags of the first differenced independent variables.

As the period of this paper covers certain events and developments that need to be taken into consideration, four dummy variables, $D_1, \ldots, D_4$, are included in the model exogenously to account for the break in the trend for Malaysia's fiscal balance, Malaysia's imposition of its currency peg and partial capital controls, and the Asian and global financial crises.

The ARDL F-bound test is used to check for the presence of long-run relationships. If the F-bound test does not find any long-run relationship, the regression model (in Equation 2) will be estimated. The specification is as below:

$$\Delta y_t = \beta_0 + \sum_{i=1}^{p} \propto_i \Delta y_{t-i} + \sum_{i=0}^{p_1} \gamma_i \Delta x_{1,t-i} + \cdots + \sum_{i=0}^{p_m} \theta_i \Delta x_{m,t-i} + \sum_{i=1}^{4} \varphi_i D_{it} + u_t \qquad (2)$$

Studies on bond or debt markets using ordinary least squares approach include Bhattacharyay (2013) that involved identifying major determinants of development of bond markets in Asia.

3. Empirical Findings

The ARDL model (1) was estimated. The ARDL analysis did not establish the existence of level relationships (F statistic is 4.8680). The level variables were dropped from the model. Equation 2 is used to analyze the relationships between the dependent variable and its potential determinants.

All the chosen variables were entered into the model, and the contemporaneous term as well as the lags from one up to four quarters were considered. Variables that are not significant were dropped. A battery of diagnostic checks are performed on the selected models, including serial correlation LM test, recursive residuals, CUSUM test, and CUSUM of squares test. The tests did not indicate any problems. In Table 1, four models are considered. In the first and second models, which are reported as Equations 1A and 1B, the proxy used to investigate the impact of crowding-out is government debt. The other

explanatory variables included in Equation 1A are related to the banking sector, exchange rate and dummy variable for break in the trend of government debt. The second model considered in Equation 1B has added the event dummy variables for the Asian and global financial crises and Malaysia's currency peg. For the third and fourth models, which are presented as Equations 2A and 2B, the only variable change is the size of the government bond market, which replaces government debt, as the proxy for examining the impact of any possible crowding-out.

For Equations 1A and 1B, five explanatory variables are significant. They are first difference of loans outstanding over nominal GDP ($DLOAN_{t-3}$), first difference of bank concentration ratio ($DBANCON_t$), first difference of logarithm of exchange rate ($DLEXR_t$), first difference of government debt over nominal GDP ($DGDEBT_{t-1}$) and the dummy variable, breakpoint in government debt (D_{1t}). The break in the trend in government debt has a positive impact on the corporate bond market. However, as shown in Equation 1B, the three events of Asian financial crisis (D_{2t}), Malaysia ringgit peg (D_{3t}) and global financial crisis (D_{4t}) did not have a significant impact. The estimates for both the equations do not differ much.

In Equations 2A and 2B, the variable, first difference of government debt over nominal GDP, has been replaced with first difference of government bonds over nominal GDP (DGB_t). In addition to investigating any effects of crowding-out from the growth of the government bond market, this proxy can also shed light on the contribution of the domestic government bond market as a foundation for development of the domestic corporate bond market in the case of Malaysia (Bae, 2012; World Bank and IMF, 2001). Here, five explanatory variables are significant ($DLOAN_{t-3}$, $DBANCON_t$, $DLEXR_t$, DGB_t, D_{1t}). Again, the three event dummy variables for Asian financial crisis, ringgit peg and global financial crisis are not significant. This results is not surprising, as the main force of positive impact of DGB_t (and $DGDEBT_t$ as discussed earlier) is that Malaysia lies in a growth process. The results for all the four models are consistent.

The size of the banking sector and its concentration ratio both have a negative impact on the development of the corporate bond segment. The negative coefficients suggest that banks compete with the domestic corporate bond market in terms of providing funds to firms for their business needs (Bank Negara Malaysia and Securities Commission, 2009). The negative coefficient for the bank concentration ratio suggests that banks with large market shares in Malaysia can stifle competition from the domestic corporate bond market (Beck et al., 2003; Eichengreen and Luengnaruemitchai, 2004). The negative relationship between exchange rate and the corporate bond market means that depreciation of the ringgit does not augur well for the development of the bond market. Stability of the exchange rate is needed to promote the development of the bond market. This finding lends support to the developing countries' decision to develop their domestic bond markets to reduce dependence on bank loans and international borrowings in the aftermath of the Asian financial crisis (Bhattacharyay, 2013; Eichengreen and Luengnaruemitchai, 2004; Hale, 2007; Herring and Chatusripitak, 2000; Pettis, 2000).

The significant positive coefficients of $DGDEBT_t$ in Equations 1A and 1B and DGB_t in Equations 2A and 2B indicate that the rise in government debt and issuance of domestic government bonds did not dampen the issuance of domestic corporate bonds. The fiscal deficits faced by the country are not likely to have crowding-out effects on its domestic corporate bond market.

Table 1: The Results of Estimated Regression Models

	Equation 1A	Equation 1B	Equation 2A	Equation 2B
Constant	0.0026* (0.0014)	0.0041** (0.0017)	0.0024* (0.0014)	0.0040** (0.0016)
First Difference of Loans Outstanding over Nominal GDP, $DLOAN_{t-3}$	-0.0662*** (0.0230)	-0.0645** (0.0243)	-0.0688*** (0.0220)	-0.0665*** (0.0228)
First Difference of Bank Concentration Ratio, $DBANCON_t$	-0.5962** (0.2548)	-0.5371** (0.2581)	-0.5421** (0.2438)	-0.4407* (0.2472)
First Difference of Logarithm of Exchange Rate, $DLEXR_t$	-0.1109*** (0.0304)	-0.1224*** (0.0301)	-0.0638** (0.0253)	-0.0741*** (0.0256)
First Difference of Government Debt over Nominal GDP, $DGDEBT_{t-1}$	0.4944** (0.1867)	0.4473** (0.1832)		
First Difference of Government Bonds over Nominal GDP, DGB_t	-	-	0.1774*** (0.0664)	0.1884*** (0.0637)
Breakpoint in Government Debt, D_{1t}	0.0234*** (0.0039)	0.0161** (0.0062)	0.0185*** (0.0041)	0.0107** (0.0052)
Asian Financial Crisis, D_{2t}	-	0.0047 (0.0050)	-	0.0040 (0.0038)
Ringgit Peg, D_{3t}	-	-0.0036 (0.0029)	-	-0.0043 (0.0029)
Global Financial Crisis, D_{4t}	-	-0.0014 (0.0046)	-	0.0011 (0.0050)
R-squared	0.3433	0.3654	0.3582	0.3890
Adjusted R-squared	0.2912	0.2808	0.3072	0.3076
Number of observations	69	69	69	69
Breusch-Godfrey Serial Correlation LM Test – Chi-squared statistic [p-value]	0.8090[0.9372]	2.7314[0.6037]	1.1845[0.8806]	1.9088[0.7525]

Note:

The dependent variable is first difference of corporate bonds over nominal GDP (DCB_t).

Figures in parentheses are White heteroscedasticity-consistent standard errors.

***, **, * indicate significance at 1 percent, 5 percent and 10 percent level, respectively.

D_{1t} (1 for Q1, 1998, and 0 otherwise) is the dummy variable for breakpoint in government debt when fiscal surpluses first changed to fiscal deficits. D_{2t} (1 from Q3, 1997 to Q3, 1999, and 0 otherwise) is the dummy variable for the Asian financial crisis. D_{3t} (1 from Q3, 1998 to Q3, 2005, and 0 otherwise) is the dummy variable for Malaysia's currency peg and partial capital controls. D_{4t} (1 from Q1, 2008 to Q3, 2009, and 0 otherwise) is the dummy variable for the global financial crisis.

4. Conclusion

No long-run relationships are found for the corporate bond market in Malaysia. This outcome could be due to the significant reduction in Malaysian government's borrowings between 1988 and 1997. These developments would have affected the level of government debt and fiscal balance as well as domestic government bonds (Bank Negara Malaysia, 1999, p. 341).

Size of the local banking sector and its concentration ratio both have a significant and negative impact on growth of the domestic corporate bond market. This negative impact seems to indicate that there is competition between the local banking sector and domestic corporate bond market. It should be noted that the Malaysian government promoted the issuance of domestic corporate bonds as a cheaper alternative for raising funds compared to bank loans amongst big corporates when it established the country's first rating agency (Bank Negara Malaysia and Securities Commission, 2009; National Economic Action Council, 1998).

The negative impact of the local currency means that when the ringgit weakens, issuance of domestic corporate bonds is negatively affected. This finding points to the importance of exchange rate stability for the development of the bond market (Eichengreen and Luengnaruemitchai, 2004; Pettis, 2000).

The size of government debt, domestic government bond market and break in the trend in the country's public debt all have a positive impact on the growth of the domestic corporate bond market. That is, any increase in government debt or government bond issuance is associated with a bigger domestic corporate bond market. It appears that for Malaysia, during the period covered by this paper, the growth of domestic government bond issuance, as a result of persistent fiscal deficits beginning 1998, did not lead to any crowding-out effect on the issuance of domestic corporate bonds. Rather, it seemed to be the reverse for Malaysia since an increase in government bonds coincided with the growth in corporate bonds.

However, Bank Negara Malaysia has reiterated that, except for 1998 when liquidity was tight in the banking system, there has been ample liquidity in the banking system since 1999 (see also Ariff and Shawtari, 2019: Table 1). Domestic interest rates have also been low, thus enabling the private sector to have adequate access to affordable credit. Furthermore, the central bank has also highlighted Malaysia's high savings as reflected in the Gross National Savings, which ranged between 35 to over 40 percent of GDP, for the years 1998 to 2011. According to Bank Negara Malaysia, these were factors that ensured that the growing government debt and expanding domestic government bond market have not led to any crowding-out effect on the private sector (Bank Negara Malaysia, various issues).

Furthermore, based on his study, Bae (2012) stressed that a "deep" government bond market was necessary for developing the domestic corporate bond market. According to the study on government bond markets by the World Bank and IMF (2001), the reasons that well-functioning government bond markets can boost development of corporate bond markets included benefits such as a government benchmark yield curve to aid in the pricing and trading of corporate bonds, ensuring adequate infrastructure as well as a sufficient number of market participants including dealers and investors, for the corporate bond market.

More importantly, this paper finds no evidence of crowding-out effects on Malaysia's domestic corporate bond market from the country's growing government debt. In fact, the findings strongly suggest that the Malaysian government has been successful in developing a well-functioning government bond market that has served as a strong foundation for the growth of the domestic corporate bond market. These findings pave the way for more embracive government policy design and measures for joint development of both public and private bond markets in Malaysia.

References

Ariff, M. and Shawtari, F.A. (2019) "Efficiency, Asset Quality and Stability of the Banking Sector in Malaysia" *Malaysian Journal of Economic Studies* **56(1)**, 107-137.

Bae, K.H. (2012) "Determinants of Local Currency Bonds and Foreign Holdings: Implications for Bond Market Development in the People's Republic of China" ADB working paper number 97.

Bank Negara Malaysia (1999) *The Central Bank and the Financial System in Malaysia: A Decade of Change, 1989-99,* Bank Negara Malaysia: Kuala Lumpur.

Bank Negara Malaysia Various issues. *Annual Report,* Bank Negara Malaysia: Kuala Lumpur.

Bank Negara Malaysia and Securities Commission (2009) *Malaysian Debt Securities and Sukuk Market,* Bank Negara Malaysia and Securities Commission: Kuala Lumpur.

Beck, T., Demirguc-Kunt, A. and Levine, R. (2003) "Law, Endowments, and Finance" NBER working paper number 9089.

Bentson, G.J. (1994) "Universal Banking" *Journal of Economic Perspectives* **8(3)**, 121-143.

Bhattacharyay, B.N. (2013) "Determinants of Bond Market Development in Asia" *Journal of Asian Economics* **24**, 124-137.

Borio, C., Lombardi, M. and Zampolli, F. (2016) "Fiscal Sustainability and the Financial Cycle" BIS working paper number 552.

Burger, J.D. and Warnock, F.E. (2006) "Local Currency Bond Markets" *IMF Staff Papers* **53**(Special Issue), 133-146.

Claessens, S., Klingebiel, D. and Schmukler, S.L. (2007) "Government Bonds in Domestic and Foreign Currency: The Role of Institutional and Macroeconomic Factors" *Review of International Economics* **15**(2), 370-413.

Eichengreen, B. and Luengnaruemitchai, P. (2004) "Why doesn't Asia have Bigger Bond Markets?" NBER working paper number 10576.

Essers, D., Blommestein, H., Cassimon, D. and Flores, P.I. (2015) "Local Currency Bond Market Development in Sub-Saharan Africa: A Stock-taking Exercise and Analysis of Key Drivers" MPRA paper number 65320.

Garcia, V.F. and Lin, L. (1999) "Macroeconomic Determinants of Stock Market Development" *Journal of Applied Economics* **II**(1), 29-59.

Gruic, B. and Wooldridge, P. (2012) "Enhancements to the BIS Debt Securities Statistics" *BIS Quarterly Review*, December**.**

Hale, G. (2007) "Bonds or Loans? The Effect of Macroeconomic Fundamentals" *The Economic Journal* **117**, January, 196-215.

Harwood, A. (Ed.). (2000). *Building Local Currency Bond Markets: An Asian Perspective,* International Finance Corporation: Washington, DC.

Hauner, D. (2009) "Public Debt and Financial Development" *Journal of Development Economics* **88**, 171-183.

Herring, R.J. and Chatusripitak, N. (2000) "The Case of the Missing Market: The Bond Market and Why it Matters for Financial Development" ADBI working paper number 11.

Kaminsky, G.L. and Reinhart, C.M. (2001) "Bank Lending and Contagion: Evidence from the Asian Crisis" in *Regional and Global Capital Flows: Macroeconomic Causes and Consequences* by T. Ito and A. Krueger, Eds., University of Chicago Press: US, 73-79.

La Porta, R., Lopez-de-Silances, F., Shleifer, A. and Vishny, R. (1997) "Legal Determinants of External Finance" *The Journal of Finance* **LII**(3), 1131-1150.

McCauley, R. and Remolona, E. (2000) "Size and Liquidity of Government Bond Markets" *BIS Quarterly Review*, November.

McLeod, R. H. and Garnaut, R. (Eds.) (1998) *East Asia in Crisis: From being a Miracle to Needing One?* Routledge: New York.

Mihaljek, D., Scatigna, M. and Villar, A. (2002) "Recent Trends in Bond Markets" In *The Development of Bond Markets in Emerging Economies*, BIS paper number 11, Bank for International Settlements: Basel, 13-41.

Ministry of Finance (1998) *Economic Report 1998*, Ministry of Finance: Kuala Lumpur.

National Economic Action Council (1998) *National Economic Recovery Plan: Agenda for Action,* Prime Minister's Department: Kuala Lumpur.

Park, C.Y. (2016) "Developing Local Currency Bond Markets in Asia" ADB economics working paper number 495.

Pesaran, M.H. and Shin, Y. (1999) "An Autoregressive Distributed Lag Modelling Approach to Cointegration Analysis" in *Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium* by S. Strom, Ed., Cambridge University Press: Cambridge, 371-413.

Pesaran, M.H., Shin, Y. and Smith, R.J. (2001) "Bounds Testing Approaches to the Analysis of Level Relationships" *Journal of Applied Econometrics* **16**, 289-326.

Pettis, M. (2000) "The Risk Management Benefits of Bonds" in *Building Local Currency Bond Markets: An Asian Perspective* by A. Harwood, Ed., International Finance Corporation: Washington, DC, 47-58.

Rajan, R.G. and Zingales, L. (2003) "The Great Reversals: The Politics of Financial Development in the Twentieth Century" *Journal of Financial Economics* **69**(1), 5-50.

Reinhart, C. and Rogoff, K. (2013) "Banking Crises: An Equal Opportunity Menace" *Journal of Banking and Finance* **37**, 4557-4573.

Schinasi, G.J. and Smith, R.T. (1998) "Fixed Income Markets in the United States, Europe and Japan: Some Lessons for Emerging Markets" IMF working paper number 98/173.

Turner, P. (2012) "Weathering Financial Crisis: Domestic Bond Markets in EMEs" BIS papers number 63: Weathering Financial Crises: Bond Markets in Asia and the Pacific.

Woo, W.T., Sachs, J.D. and Schwab, K. (Eds.) (2000) *The Asian Financial Crisis: Lessons for a Resilient Asia,* MIT Press: London.

World Bank and International Monetary Fund (2001) *Developing Government Bond Markets: A Handbook,* The International Bank for Reconstruction and Development: Washington, DC.