

# BOND FINANCING IN PRIVATE INFRASTRUCTURE PROJECTS IN DEVELOPING COUNTRIES

**K.A.K. Devapriya<sup>1</sup>, F.L.Khu**

*Knowledge Centre@ Weimar, Bauhaus-Universität Weimar, Marienstr.7A, D-99423, Weimar, Germany*

The popular application of project finance for private infrastructure projects (PIPs) in developing countries (DCs) has characterized weak conditions for utilizing long term financial instruments. The absence of long-term local currency financing in PIPs has resulted in currency and maturity mismatches and hampers sustainability of PIPs. This underdeveloped financial climate highlights the importance of bond financing as an alternative form of borrowing in PIP finance in DCs. However, inadequate strength and weak liquidity of the capital markets and the risk appetites reveal problems faced by DCs when raising finance through the bond issues. Within this background this paper presents an investigation into bond financing in PIP finance in DCs. While the research focuses primarily on Asian bond markets, country-specific experience is drawn from the Malaysian bond market with the support of a case study on the use of Islamic bonds in PIP finance. Empirical evidence reveals that application of bond financing works to mitigate currency and refinancing risks in PIPs and thus improves stability of PIP finance transactions. Findings highlight also that bond financing in PIPs would function as a financial intermediary transaction to strengthen domestic financial system. Successful evaluation of Malaysian Islamic bond market gives examples for domestic capital market developments in DCs in this background.

Keywords: bonds financing, developing countries, financial intermediation, Islamic bonds, private infrastructure projects.

## INTRODUCTION

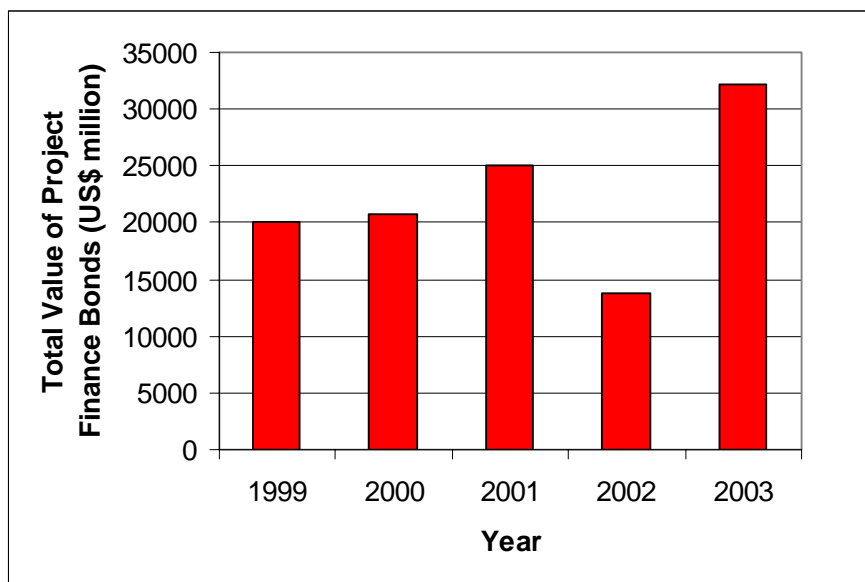
Bonds are a form of financial instruments that are sold to the public and a holder of a bond will receive a specified amount of interest and a specified amount at maturity. Companies use the funds they raise from selling bonds to finance investments in facilities, building infrastructures, research, development, new technology and business expansion. The bonds that they issue are known as Corporate Bonds. Companies that issue bonds include public utilities, transport companies, industrial corporations, financial services companies and conglomerates. Similarly, infrastructure project companies issue project bonds to borrow long-term finance for infrastructure development. Bonds are bought and sold worldwide by a wide range of institutional investors such as pension funds, commercial banks, insurance companies and building societies. Bond issues are becoming an increasingly popular way of raising project finance, particularly in infrastructure project finance. Accordingly, bond financing has become one of the more preferred financial instruments to finance projects such as gas pipelines, power stations and toll roads (Luce, 1999). Figure 1

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<sup>1</sup> devapriya@bauing.uni-weimar.de

shows the amount of project finance bonds issued between 1999-2003. The total value of project finance bonds dipped significantly in 2002. The sharp decline was led by United States following the scandal of Enron, the energy giant which went bankrupt in that year.

**Fig 1:** Amount of Project Finance Bonds Issued 1999-2003



Adapted from Project Finance International (various issues in 2003)

Power sector projects dominate the project finance market in US, therefore the collapse of Enron severely eroded the credit quality of power project sponsors, which in turn increased their borrowing costs. This reduced the number of power sponsors who were willing to raise finance through the issue of bonds. For the first time in 5 years, amount of bonds issued by the infrastructure sector overtakes the power sector (See Table 1).

**Table 1:** Bonds by sectors in 2002

Sector	US\$m
<b>Infrastructure</b>	<b>6,471</b>
<b>Power</b>	<b>4,315</b>
<b>Oil &amp; Gas</b>	<b>2,632</b>
<b>Industrial</b>	<b>250</b>
<b>Leisure</b>	<b>120</b>
Total	13,788

Source: Project Finance International (January, 2003)

There are some advantages of bond financing over traditional bank lending. Banks, the traditional lenders usually tend to tie up loans with onerous

covenants and want to be involved in every stage of the project. Bonds on the other hand, have fewer covenants and because of the better management of amortization of principle, give the equity investors earlier returns (Klyne, 2003). Finnerty (1996) noted that the bank loan market tends to prefer shorter-term floating-rate loans with relatively tight covenants restrictions while the bond market is willing to accept longer maturities and larger issues with relatively non-restrictive covenants. Bond issues can have maturities of up to 30 years, whereas banks only lend for a shorter period of time depending on the type of project. Bond financings can reach a wider group of investors and therefore can achieve a lower interest cost margin and longer maturity. Also, bonds are attractive to long-term fixed-income investors because they are backed by long-term identifiable cash flows of a project. However, the disadvantages of bond financing are that in projects with long construction periods, the contractors do not need all the money up-front. Also, bond financing does not provide the same degree of flexibility or control of a creditor's interests in the project as does bank lending. Bonds are usually held as bearer instruments, so project sponsors may find it difficult to adjust covenants or financial terms if the project's needs change (IFC, 1996). Markets can be very unpredictable and borrowings can thus be affected due to shifts in sentiments rather than any reasons related to the project (Middelmann, 1996).

There are several reasons for bonds lagging behind loans when financing infrastructure projects. Firstly, bankers have a more sophisticated understanding of the risks involved in long-term projects than the average bond investor. Secondly, the borrowers themselves have yet to be fully educated about the merits of the bond markets (Luce, 1999). Thirdly, capital markets in DCs are either not developed or in the process of developing. Absence of long-term local currency financing such as bond financing hampers PIP finance in DCs. PIP finance relies on an infrastructure project's potential to produce the necessary cash flow to pay for loans and give a return on investment. Therefore, dependence on hard currency financing leads to exchange risk in cross broader investments. Exchange risk may erode domestic investment by currency depreciation. Emerging country currencies are subject to volatility and susceptibility to devaluation. This is critical in PIPs since revenue scheme in PIPs such as toll roads is denominated in local currency. Therefore, it is vital important to develop long-term financial instruments in domestic capital markets. It is in this light that this research explores ways and means of promoting bond financing in arranging the capital structure in PIP finance. In effect, findings would highlight improvements in the financial climate for the utilisation of alternative financial instruments in PIP finance in DCs. The research mainly focuses on the case study methodology to bring in more insights from Islamic bond financing. The paper is structured as follows. First, reasons for the development of bond market are discussed together with problems faced when developing local bond markets in DCs. Then, a case study on bond financing in PIP is presented within the context of Islamic bond finance in Malaysia. This is followed by conclusions.

## **REASONS FOR DEVELOPING LOCAL BOND MARKET TO FINANCE INFRASTRUCTURE PROJECTS**

After the Asian financial crisis, many DCs are looking at other methods of financing to reduce their exposure to currency, interest rate and funding risks. One of the ways

to reduce these exposures is to develop the local bond markets. Developing local bond market provides a country with a more balanced financial infrastructure, reducing over reliance on bank and equity financing and diversifying the risk of financial intermediation across a larger number of financial institutions and market players. This would help to achieve a fine balance and structure between the three different types of financing (debt, bonds, equity). Over reliance on bank financing is one of the reason why many DCs suffered during the Asian financial crisis. The governments of DCs realized that over reliance on bank loans for financing had brought financial strains on the banking sector. Capital inflows have increased rapid credit expansion, which lowered the quality of the credit and led to price inflation. This price inflation led to further capital inflows and lending. The Asian financial crisis started with the floating of the Thai Baht in July 1997, and this led to the depreciation of other currencies in the region. This resulted in massive capital outflows, which brought about a credit crunch and a near collapse of the banking system. Kim (2001) highlighted that over-dependence on banking institutions resulted in a serious term mismatch between short-term bank borrowing and long term investments, inflexibility in financing methods, and high risks at the time when banks are reluctant to lend.

In addition to that, an active local bond market supports and strengthen the stability of the local financial system. For example, commercial banks which hold bonds in their investment portfolio can make use of these bonds in securing emergency funding from monetary authorities. An active bond market where bonds can be traded will facilitate commercial banks' access to emergency liquidity assistance through the sale of the bonds or through the use of these bonds as collateral. This mechanism provides a more efficient and transparent process than the use of other types of collateral such as land or title deeds which have less transparent market value and less liquidity. Local bond market also encourages greater transparency, pushing companies to disclose in public markets and forcing them to better understand themselves and in turn improve their management (Harwood, 2000).

Infrastructure development in DCs has created a huge demand for finances which banks often cannot provide. According to the World Bank (1994), DCs spend about \$200 billion a year on infrastructure development. Issuing new equity is also not a viable option, since it is costly and dilute ownership of the infrastructure projects (Harwood, 2000). A developed local bond market would allow issuers to finance long term infrastructure projects at a lower cost and reduce maturity risks. Issuers could benefit from having long term, fixed rate financing for their infrastructure projects. Development of long-term financial instruments such as bonds in domestic capital market is quite important to promote financial sustainability in PIPs. Utilization of long-term local currency financing could avoid maturity and currency mismatches. Similarly, use of long-term local currency financial instruments in combination with the additional financial intermediation works to improve debt capacity in PIPs (Devapriya, 2003). Thus, utilization of bond financing improves financial

intermediation. By seeking ways to fund in local currency; external lenders would contribute to the creation of an efficient and strengthened financial system (Bestani and Sagar, 2004). Therefore, bond financing in PIPs functions as a financial intermediary transaction to strengthen domestic financial system in DCs.

## **PROBLEMS FACED WHEN DEVELOPING LOCAL BOND MARKETS**

However, developing local bond markets require a lot of time and the efforts of relevant parties to make it happen. Many DCs face several problems when developing their bond markets.

### **Market participants and liquidity**

One of the problems facing the DC is the size of the market participants and the resulting low liquidity. The lack of these two factors provides little incentive for both issuers and investors to participate in the market. Basically, a market requires two classes of participants; the issuers and the investors. Potential issuers could include financial institutions, corporations, governments and/or its agencies and in the case of infrastructure projects, the project promoters. According to Endo (2000), financial institutions are often the biggest nongovernmental issuers in the early stage of development of the bond market. Potential investors could include mutual funds, pensions funds, insurance companies, financial institutions and individual investors. With enough market participants, there will be liquidity. The size of the liquidity would depend on the size and the structure of the issuers and investors. A lack of liquidity will lead to investors demanding for a higher liquidity risk premium for the bonds which in turn increases the funding costs of issuers.

### **Legal and regulatory framework**

Another problem faced by the DC is the standard and corporate governance of the legal and regulatory framework. In order for a bond market to function properly, there must be a sound legal and regulatory framework. Unfortunately, the DCs lack these requirements. There are many cases illustrating the apparent lack of corporate governance in many DCs. One study revealed that none of the companies surveyed disclosed information on commitments in support of off-balance sheet financing (Rahman, 1998). Since most infrastructure projects procured on a project finance arrangement is based on off-balance sheet financing, the study showed that even the most basic requirement of accounting practices was not met. Returns on bond are lower than that of equity. As such bonds investors are less tolerant to risks arising from weak legal framework and poor transparency. The standards of transparency and corporate governance need to be raised up to a level where people feel safe to put their money into bonds.

### **Commitment of the government**

The commitment of the government is a vital factor in developing the bond market. The government must take the lead in getting the process underway and getting all the market participants to build a trading system. For example, the government can provide tax incentives to market participants. Policies and initiatives can be improved and implemented to develop the growth of the bond market.

## **A CASE STUDY ON BOND FINANCING IN PRIVATE INFRASTRUCTURE PROJECTS IN MALAYSIA**

The most frequently used definition of the term case study merely repeats the types of topics to which case studies have been applied. Yin (1993) provides a more 'technical' definition that suits better to the purpose of the current research. A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life

context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidences are used (Yin, 1993).

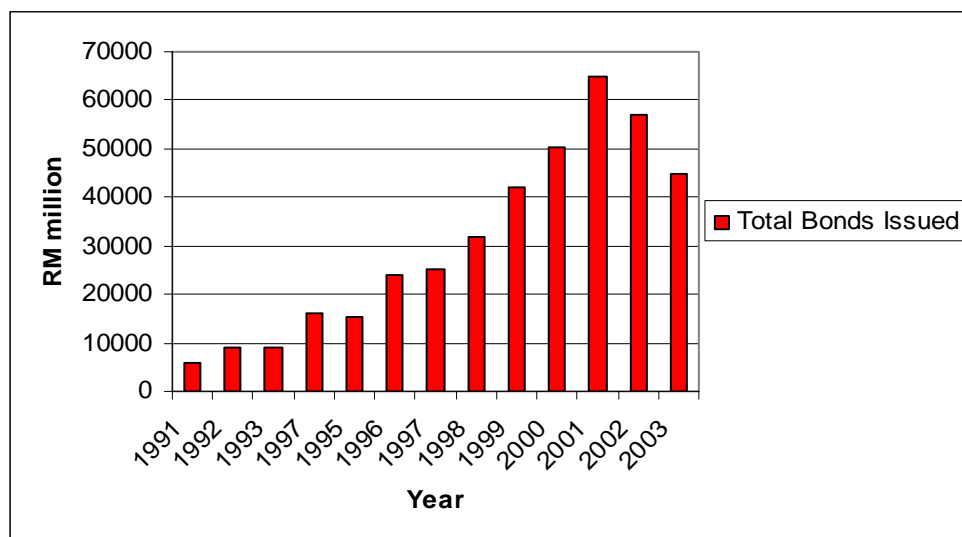
Accordingly, this section reports the context, mainly Islamic bond financing in the Malaysian bond market at the beginning. Then the empirical evidences of application of Islamic bond financing in PIPs are examined in details based on multiple sources of references such as trade journals (Project finance international, for example), proceedings from industry forums (Malaysian Debt Conference 2002, for example) and country-specific reports from development banks (IFC, 1999).

### Malaysian bond market

The Malaysian bond market is one of the most vibrant and successful in the Asia-Pacific region due to the government’s regulatory framework and its conducive environment in Malaysia. In addition to that, the present low interest rate environment and continued activity in the several key sectors, especially in the infrastructure and utility sectors are some of the reasons behind the growth in debt issuance. According to Singh (2000), the development of a corporate bond market is a key strategic priority for capital market development in Malaysia. In general, the Malaysian bond market is divided into two categories: Malaysian Government Securities (MGS) or Government-Backed Bonds and the Private Debt Securities (PDS). Privatized companies across all sectors in Malaysia have all issued bonds. Sectors include telecommunications, highways, power and other utilities boards. The main buyers of bonds are mainly banks, government pension funds, insurance companies, unit trusts and finance companies (Sharma 2000).

Figure 2 shows the net funds rose from the Malaysian Ringgit Bond Market over the last 12 years.

**Fig. 2: Net Funds Raised From the Malaysian Bond Market**



(Source: Bank Negara Malaysia, 2003)

Table 4 shows that there is a strong increase in net funds raised from the bond market. The market witnessed an enormous growth in the last five years (1998-2002).

According to Lee (2003), RM39.9 billion and RM23.8 billion worth of corporate bonds were raised in 2001 and 2002 respectively. The drop in figures in 2002 was due to the one-off bond issuance by Tenaga Nasional, the independent power producers in

2001, who raised about RM7.5 billion alone and two other large issues which amounted to RM6.5 billion. This was in sharp contrast to the amount of net funds raised before 1998, where there was hardly any growth.

### **Islamic Bond Financing**

Islamic banking (financing) has seen impressive growth since its introduction more than two decades ago. As at end-February 2004, 77% of M30.7bn of the outstanding M\$39.8bn of Rating Agency Malaysia Berhad (RAM)-rated Islamic bond issues in the market stemmed from project financed transactions in Malaysia (Ismail, 2004). According to Ismail (2004) the infrastructure and utilities sector accounted for a substantial RAM 28.5bn of these. This shows that the bond market is well suited for infrastructure and utilities project which require vast capital outlays with long gestation period (Ismail, 2004). Islamic finance has also gained widespread global acceptance. Perhaps the most distinctive feature of Islamic banking is that it is interest-free. In other words, interest (or Riba) on loans is not allowed. The main characteristics of Islamic banking are as follows:

- Any predetermined payment over and above the actual amount of principal is prohibited. This means that any amount interest or additional amount charged over the money lent is not allowed.
- The lender must share in the profits or losses arising out of the
- enterprise for which the money was lent. Instead of charging interest on loans, the lender gets to share in the profits or losses arising out of any projects. The lender and the borrower should share risks equally on any business ventures.
- Making money from money is not acceptable. Making money out of money e.g. via interest payments by putting the money in a bank or lending to someone else is not allowed. Money represents purchasing power which is considered to be the only proper use of money. The purchasing power (money) cannot be used to make more purchasing power (money) without undergoing the intermediate step of it being used for the purchase of goods and services.
- Gharar (uncertainty, risk or speculation) is prohibited. Under this characteristic, any deals utilizing Islamic financing must be free of risks, certainties and speculations. Parties involved in a deal should understand the values to be exchanged as a result of the transaction. The rationale behind this is that weaker parties will be exploited when uncertainty, risk or speculation is encountered.

With respect to PIP finance, there are two Islamic concepts that can be applied to PIP finance. These are Istisna' and Ijarah. Istisna' is a contract whereby a party undertakes to produce a specific thing according to determined specifications at a determined price and fixed date of delivery. This type of contract is suitable for engineering and construction contracts awarded by governments or corporations. The contract provides medium-term financing to meet the funding requirements of the construction company/contractor in terms of paying the salaries of the staff and building materials. Ijarah is a contract of hire whereby a particular property is transferred to another party in exchange for a rent. The collection of rent will go towards the payment of the Ijarah financing over a period of time. This type of contract is suitable for projects where the collection of rent (for example, collection from toll roads) can be used to pay off the financing. Due to the large initial investment in infrastructure projects, the two types of contracts are often financed through the issue of bonds on Islamic principles. The

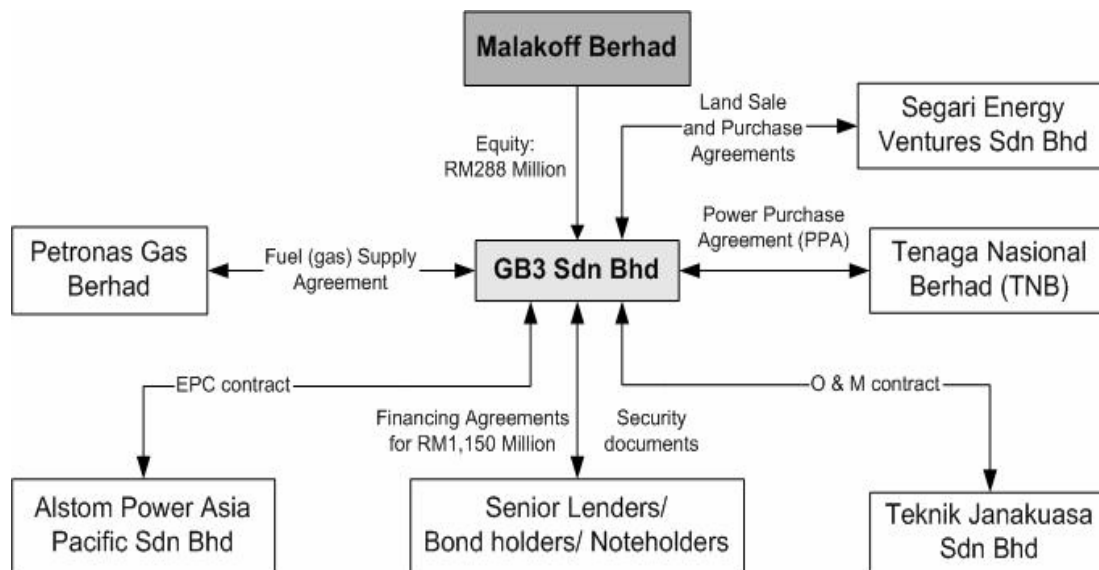
monitoring of the project and the status of the project are crucial to ensure full settlement of the financing.

**Application of Islamic Bond Financing in GB3 Project in Malaysia**

The GB3 project, located in Segari, Perak Malaysia, is a fast-track independent power project owned by a special purpose company called GB3 Sdn Bhd. Under the terms of the concession, GB3 Sdn Bhd is to build, construct, operate and maintain a gas-fired generating block adjacent to the existing Lumut Power Plant (1303MW) owned by Segari Energy Ventures Sdn Bhd. The new block will operate initially on open cycle mode with 430MW capacity, to be

converted to combined cycle after 12 months of open cycle operations. With the conversions, the capacity of the new block will be 640MW. The structure of the project is illustrated in Figure 3. The main purchaser of the electricity output would be Tenaga Nasional Berhad (TNB), the national utility company, which has signed a 21-year Power Purchase Agreement (PPA) to purchase all the electricity produced by the plant at a pre-agreed rate. In addition to that, TNB also owns a 20% interest in the plant. The PPA agreement signed between GB3 and TNB was important from the sponsor’s point of view since this effectively eliminated the risk of demand and provided a steady stream of revenue.

**Fig. 3:** Structure of GB3 Project



(Source: Yong , 2002)

**Capital structure of the GB3 project**

The total cost of the GB3 project is RM1, 438 million. The financing of the project is based on a debt-equity ratio of 80:20 (RM1150 million in debt and RM288 million in equity). Malakoff Berhad, the parent company of GB3, provided the equity. The rest of the amount is financed by bonds. There was the option of issuing conventional bonds. Funds raised from the bond issue would be deposited into the project account and be paid to the contractor progressively. The advantage of issuing bonds this way was that it reduced interest rate risk and refinancing risk. However, the bond would



have a very high negative carry (a transaction where the cost of finance exceeds the return from it). Also, it would not be able to take advantage of an improved rating from credit rating agencies when the power plant was completed. In October 2001, GB3 tapped the Malaysian bond market with a RM\$850 million issue of Islamic bonds and RM300 million issue of Commercial Paper (CP)/Medium Term Note Programme (MTN). Due to the nature of the cash flow, it is difficult to launch the bonds simultaneously. Therefore the bond deal was split into 7 tranches with an average size of RM\$120 million with maturities ranging from seven to thirteen years. RM\$600 million worth of bonds in the 7-12 year tranches are underwritten and placed to the market while the remaining RM\$250 million bonds are put in private placement.

By the time the bonds were issued, approximately RM800 million has been funded via the shareholders' loan and bridging loan. Proceeds from the bonds are then used to repay the shareholder's loan and bridging loan. As it is an Islamic bond offering, no official coupon was set because interest payments are prohibited under Islamic law. Instead, bond investors get to share in the profits from the deal. There was also no negative carry on the bonds as a result of the Islamic issue. The CP/MTN was catered to future drawdown. The transaction was rated AA2 by the Rating Agency Malaysia (RAM), one notch higher than the typical rating for Malaysian power projects. The reason for the higher rating was the provision of about RM200 million of credit supports to cover potential completion delays and any shortfalls in cash flow that might arise from that. The bond issue was voted as the best project finance loan in the project finance market in 2001.

## **CONCLUSIONS**

This research conducted an investigation into the current development of bond financing as an alternative financial instrument for financing infrastructure projects. There is a need for DCs to develop their local bond markets for local currency financing of large scale investment projects such as PIPs. The neglect of the development of bond market and over reliance on hard currency financing hampers sustainability of PIPs, and gives little room for financial adjustment in an emergency situation. On the other hand, developing local bond markets require huge effort and time, both from the government and market participants. Availability of long-term financial instruments such as bonds in domestic capital market is important to achieve financial sustainability in PIPs. Utilization of bond financing could avoid maturity and currency mismatches. Successful evaluation of Malaysian Islamic bond market gives examples for domestic capital market development in DCs. Malaysian bond market is one of the first countries to promote the development of local bond market to provide a more balanced and an alternative financial intermediation system in the financing of infrastructure projects.

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