Economic Benefits of Secondary Bond Market Interventions

By

M. G. Mortaza, Asian Development Bank

Mohammed Mahinur Alam, Bangladesh Bank

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Background

- Bond market is an indispensable part of an advanced financial sector.
- Benefits of bond market:
  - Bond market provides an additional window for private investors to accumulate resources for their investments, in addition to other financial sources including banks and stock market,

Status of bond market in Bangladesh

- There is a functional primary bond market for government bonds.
- However, the secondary bond market of Bangladesh is still in its infancy with some trading.
- Problem with current secondary bond market:
  - The artificially high rates offered by the government on the national savings certificate diverts demand from government bond issues
  - The existence of high interest offering NSC crowds out corporate bonds.

Reasons for weak secondary bond market

- Absence of yield curve
- High issue cost
- High cost of trading in secondary markets
- High government borrowing at high interest rates
- Higher interest rate on savings certificates
- Attractive syndicated loans
- Absence of alternative financial instruments

Literature Review

- McKinnon (1973): accumulation of financial assets triggers economic development, while financial repression distorts financial prices such as interest rates and FX rates that in turn inhibit financial sector growth.
- King and Levine (1993): in a cross-country analysis of 80 countries that bank development (or, financial sector development) lead to economic growth.
- Studies on financial market in emerging market mostly focus on equity markets, with minor focus on bond markets.
- Few papers really mention the ‘cost’ of having bond market.
- Hakansson (1999) spells out ‘advantages’ of developed bond market including a possibility of creating of an efficient corporate financial structure.

Analysis of Intervention

- Two types of additional costs associated with secondary bond market development in Bangladesh are assumed in this CBA.
- (i) capital costs associated with establishment of secondary bond market, and
- (ii) higher issue cost borne by the bond issuers.

Capital Costs

- **Capital costs**. To address the bond market constraints, the government and ADB agreed to build on several measures.

- The program will deepen and broaden the outreach of the joint reforms program initiated by ADB and the government by
  - extending the government yield curve and, thereby promoting a more liquid government bond market and eventually corporate bond market;
  - catalyzing institutional investor demand by broadening, deepening, and diversifying the investor base; and
  - enhancing the supply of alternative financial instruments.

- For these reform programs, ADB will provide a total of $250 million to the government for the period 2015-2017.

Methodology

- **Net Present Value (NPV)**

$$NPV = \sum_{t=0}^{T} \frac{B_t - C_t}{(1+\delta)^t} \qquad (1)$$

- **Benefit-Cost Ratio (BCR)**

$$CR = \frac{\left(\sum_{t=0}^{T} \frac{B_t}{(1+\delta)^t}\right)}{\sum_{t=0}^{T} \frac{C_t}{(1+\delta)^t}} \qquad (2)$$

- **Economic Internal Rate of Return (EIRR)**

$$0 = \sum_{t=0}^{T} \frac{B_t - C_t}{(1+EIRR)^t} + \frac{B_{T+1}}{EIRR}\left(\frac{1}{(1+EIRR)^{T+1}}\right) \qquad (3)$$

Data and Variables

- Data: Secondary data collected from Bangladesh Bank, and Dhaka Stock Exchange.
- Variables: Domestic credit, lending interest rate, interest rate on NSD certificate, investment financing from ADB.

Underlying Assumptions…

- The capital costs of this CBA are the borrowing of the government from ADB which is about $250 million or equivalent Taka amount.
- Economic prices of additional costs is estimated by converting the financial prices with respective shadow prices.
- Issue cost is assumed as 3.5% of total bond value.

… **Underlying Assumptions**

- A conservative 0.04 coefficient of bond market capitalization to economic growth will be used for estimating the benefits of secondary bond market to GDP growth.
- A 10% economic discount rate is assumed for the base line scenario.
- The economic life of the intervention is assumed at 20 years (2015-2034).

Estimation and Results…

Table 1: Cost-Benefit Analysis for Secondary Bond Market Development (Tk. in Million)

	Aggregate Costs			Aggregate Benefits				NPV
Year	ADB Financing	cost for bond issuance	Total Cost	Growth benefit	Benefit from reduced transaction cost	Total benefit	Net Benefit	At 10%
2015	6,475	0	6,475	0	0	0	-6,475	-5,886
2016	6,475	2,771	9,246	3,166	237	3,404	-5,842	-4,828
2017	6,475	6,253	12,728	7,146	536	7,682	-5,046	-3,791
2018	0	10,583	10,583	12,095	907	13,002	2,419	1,652
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
2031	0	169,617	169,617	193,848	14,539	208,386	38,770	7,670
2032	0	191,394	191,394	218,736	16,405	235,141	43,747	7,868
2033	0	215,967	215,967	246,820	18,511	265,331	49,364	8,071
2034	0	243,696	243,696	278,510	20,888	299,398	55,702	8,280
							NPV	**84,945**
							IRR	**33.4%**

Source: Author's calculation

The base case results in an IRR of 33.4%, along with an NPV of Tk.84,945 million.

…Estimation and Results

Table 2: Results with Sensitivity Analysis (Tk. in Million)

Intervention	3% discount rate			5% discount rate			10% discount rate		
	Benefit	**Cost**	**BCR**	**Benefit**	**Cost**	**BCR**	**Benefit**	**Cost**	**BCR**
Secondary bond market development	1139258	137715 9	1.209	864278	1040163	1.204	458184	543129	1.185

- A sensitivity analysis as shown in Table 2 indicates that there are significant benefit involves with secondary bond market development.

- The benefit cost ratio has been greater than one in all cases, meaning for every Taka spending for secondary bond market development will bring more than one Taka benefit.

Conclusion and Policy Suggestions…

- Government should step up efforts to further develop the secondary bond for both government bond and corporate bond markets to widen the financing options for both bond issuers and investors.
- Having a secondary bond market will open an efficient source of financing for its long-term investment with lower cost and reduced future fiscal burden.

…Conclusion and Policy Suggestions

- A vibrant bond market will lead to lower credit and investment risks through more options for diversification.

- However, there are also potential risks associated with a bond market, particularly, those that originate from weak capital market governance, poor transparency in business transactions, and dubious quality of rating agencies.