

Cost-Benefit Analysis of Establishing a Secondary Bond Market in Bangladesh

Bangladesh Priorities

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Abstract

This paper investigates the costs and benefits of establishing a secondary bond market in Bangladesh. Bangladesh has a primary bond market but a weak secondary one. Like other developing countries, Bangladesh desperately needs financing for its infrastructure projects and industrial expansion. An active secondary market opens an alternative option for financing development projects and attracting investors. Both the public and private sectors require long-term financing facilities to make the right investments in key sectors of the economy. Evidence from our analysis shows significant benefits for the economy from a secondary bond market.

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SECTION 1. Background

A developed bond market opens an additional window for both the government and private investors to accumulate resources for their long-term investments, in addition to existing financial sources such as taxes, banks and stock markets. The absence of well-developed bond markets is a major impediment to efficient public sector resource mobilization and private sector development, particularly for building major infrastructure projects. As a developing country in need of major investments in key sectors of the economy, Bangladesh might benefit from an advanced financial sector - including a bond market – to help mobilize resources.

The bond market in Bangladesh is still in its infancy. There is a primary government debt market, which is characterized by a small number of participants as primary dealers, especially the dominant commercial banks. A rudimentary secondary market does exist with some trading, with only two corporate bonds currently operating in the country. Investors have little idea about how bond market works in the absence of significant number of bonds. High rates offered by the government on some of its non-traded debt instruments, principally the national savings directorate (NSD), divert demand from government bond issues and crowd out corporate bonds. Also, corporates find transactions in the secondary bond market to be time-consuming and expensive compared to borrowing from the commercial banks.

After realizing these issues in the secondary bond market, government authorities, with support from the Asian Development Bank (ADB), are in the process of amending several corporate bond issuance regulations to enhance supply of bonds, including the promotion of alternative sources of bond financing. The new regulations may include, among others, the removal of the 60/40 debt equity ratio ceiling as well as the removal of shareholder approval requirement and replacing it with the approval from the board of directors. These amendments are expected to encourage both the government and corporate bond issuers to participate in the bond market transactions more actively and make the market vibrant. The process may also help bond issuers to come up with a new set of financial instruments such as infrastructure financing facilities, catastrophe and *sukuk* Islamic bonds.

There are already some signs of momentum for a secondary bond market in Bangladesh. A large number of commercial banks that have been struggling to fortify their balance sheets and improve their leverage ratios in line with the regulatory requirements, including the Basel-II banking regulations, plan to issue corporate bonds. Banks find issuance of corporate bonds relatively

advantageous than offering rights or bonus shares.¹ It is also highly likely that the reduction in the interest rate of government NSD certificates will act as a benchmark for the corporate sector to offer return on bond. If successful, this will help companies and investors to participate in the bond market more actively.

For a long time, both the government and firms have been skeptical of participating in the bond market transactions due to high interest rates on NSD, non-interest fees given to dealers and trustees, and interest costs given to the bond buyers. The initiatives to amend regulations will create an opportunity to establish a true secondary bond market in Bangladesh. This cost-benefit analysis (CBA) will compare all necessary additional costs and benefits associated with all agents related to a new bond market, and gauge whether the intervention of establishing a bond market in Bangladesh is economically viable.

SECTION 2. Rationale for the costs and benefits

As Bangladesh's economy continues to grow and moves toward its medium term goal of becoming a middle income country by 2021 under its Seventh Five Year Plan (FY16-FY20), the major development challenge is to address infrastructure shortages, especially in the areas of transport and energy, to enable this continued growth.. Weak revenue mobilization is a key constraint for achieving goals of the Seventh Five Year Plan. The secondary bond market is one of the options through which the government and the private sector can accumulate resources for development purposes. This analysis looks at whether a long-term financing modality like the secondary bond market is really economically viable in Bangladesh.

The corporate sector in Bangladesh mostly relies on internal profits, bank financing and the equity market to accumulate resources for their investments. Corporate bond market provides a secure source of financing to enterprises and allows them to grow and innovate, helping to reduce overreliance on commercial banks whose lending capacity is at times stressed (ICMA, 2013). This allows efficient allocation of investor funds to corporate enterprises, leading them to maximize economic benefits. This CBA will look at the economic viability of developing a secondary bond market in Bangladesh, while considering aspects of bond issuers.

Section 3. Current Status of Bond Market in Bangladesh

In 1996 – 1997 and again 2010 -2011, the capital market in Bangladesh collapsed. Both episodes were mostly due to weak structures in the capital market that adversely affected the financial structure of

¹ While raising funds by issuing rights or bonus shares directly goes to the Tier-I capital, which swells paid up capital (more paid capital means less capacity to offer dividend), fund raised by issuing bond indirectly adds to the paid up capital.

the economy. In addition, the lack of regulatory oversight and limited resources and capacity of the SEC contributed to both market failures. Since both episodes occurred, however, the government took steps for capital and money market reforms (Debnath, 2014). A number of initiatives have been launched, including one by the government with support from the Asian Development Bank (ADB), which introduced advanced financial instruments such as bonds and capital market. Over the years, ADB and the government have been pursuing two track approaches to address structural deficiencies in the capital market through its intervention: (i) market stabilization, and (ii) sustainable market development. In its most recent program (see Box 1 for details), the broader outcome of the intervention would be enhanced capacity and size of the capital market in a strong legal and regulatory framework (ADB, 2015).

Box 1: Third Capital Market Development Program of the Asian Development Bank

Asian Development Bank (ADB) through this program will provide budget support to the Government of Bangladesh for enhancing the role of capital market in financial intermediation and resource mobilization in the economy. This will be ensured by improving the allocative efficiency between savings and investment through expanding as well as diversifying the investor base.

Impact. The impact of the program will be a well-functioning financial system that supports basic capital and investment needs, as well as Bangladesh's longer-term economic objectives

Outcome. The outcome will be enhanced capacity and size of the capital market in a strong legal and regulatory framework.

Outputs. The program has 26 policy actions under the four outputs: (i) strengthened market stability; (ii) enhanced market facilitation; (iii) enhanced supply measures; and (iv) enhanced demand measures. The first output will promote robust, resilient and stable capital market by enhancing Bangladesh Security and Exchange Commission (BSEC)'s role to develop and monitor the market, strengthen regulatory measures, and develop a clearing and settlement company. The second output will support more efficient mobilization and allocation of resources in the economy by expediting adjudication of enforcement actions, upgrading accounting and auditing standards, and pursuing demutualization of the stock exchanges. The third output will increase the supply of bonds and alternative financial instruments through the capital markets. Measures like removal of the 60:40 debt-to-equity ratio ceiling and a reduction in the IPO lock-in period for licensed private equity investors will be introduced to catalyze the corporate bond market. The fourth and last output will support the mobilization of capital market financing by developing liquid bond markets, enhancing institutional investor demand, and promoting mutual funds.

ADB's program loan size is \$250 million, and financial support addresses the development financing needs. The estimated cost of adjustment across program outputs is (i) \$75 million for market stability (BSEC additional staff, operation and maintenance cost of BSEC ICT equipment, establishment of a clearing and settlement company, and intermediaries' recapitalization costs); (ii) \$20 million for market facilitation and supply measures (costs of demutualization, operationalization of capital market tribunal, and establishment of the financial reporting council); and (iii) \$155 million for demand measures (cost of paying market prices for government securities; IDRA additional staff and training, and insurance capitalization costs).

Source: ADB, (2015).

The corporate bond market in Bangladesh is not well developed. There are only two corporate bonds operating in the country – the IBBL Mudaraba Perpetual Bond and BRAC Bank subordinated bond. From 1987 to 2005, there were only 17 debentures issued through public offerings and as of 2008, only 8 debentures were still outstanding with a mere value of \$2 million (Sophastienphong, 2008).

3.1 Primary market vs secondary market

The primary market is mostly where companies sell shares to the public while a secondary market or the "stock market" is the place where investors trade among themselves. In the secondary market, investors' trade previously issued securities without the involvement of issuing companies. In Bangladesh, a secondary market does exist with some trading in two stock exchanges: (i) Dhaka Stock Exchange; and (ii) Chittagong Stock Exchange. But when the government wants to raise money today in Bangladesh, it mostly issues treasury bills or treasury bonds, which differ by maturity periods.

3.2 Reasons for weak secondary bond market

There are several reasons why the secondary bond market is not active in Bangladesh, as described in literature review².

- **Absence of yield curve.** Demand for bonds is constrained by the prevalence of fiscal dominance, which prevents competitive auctioning of government securities based on market prices. Consequently, primary dealers hold their portfolio of government securities until maturity to minimize losses, which impedes the development of a secondary government bond market. The corporate bond market, therefore, hardly exists because of the absence of a credible government yield curve.
- **High issue cost.** There is a large amount of cost associated with issuance of new bonds in Bangladesh. The costs are related with Bangladesh Securities and Exchange Commission (BSEC) registration; publication of prospectus; printing of prospectus and application; certificate, post issue, postage; listing fees; issue manager or underwriter; trustee fee; credit rating, bankers, legal and audit; central depository fee. It is estimated that the public issue cost averaged about 8.0%, topping with a recurring annual 1% trustee fee and related listing fees. In a prevailing high interest regime, a high establishment and issue cost base rendered most public issue of corporate debentures unviable.
- **High cost of trading in secondary markets.** As there are no debt trades taking place on the Dhaka Stock Exchange, the present cost structure of trading equities on the DSE has been

² See, for instance, ADB (2015); and Akhtaruzzaman *et al.* (2009)

quite high. It is found that the cost of trading equities goes up to 0.7% of total value of securities traded depending on the volume and the broker.

- **High government borrowing at high interest rates.** The government has traditionally been the major borrower through the various 'national savings schemes' with the highest interest rate. The government instruments crowd out corporate borrowers and bank deposits in comparable tenures.
- **Higher interest rate on savings certificates.** Much of the fraud and abuse in the past has originated from the poor performance of the primary and secondary markets. The institutional investor base is poorly developed. Retail investors are not so familiar bond market operations. While investors can get higher capital gain from investing in NSD certificated, they show little interest in the debt securities.
- **Attractive syndicated loans.** Syndicated loans from commercial banks are cheap as well as flexible and tailor-made, which makes bonds less attractive to the corporate issuers.
- **Absence of alternative financial instruments.** The absence of alternative financial instruments limits the depth and breadth of Bangladesh's capital markets. The lack of a regulatory framework for alternative financial instruments, such as *sukuks* (Sharia-compliant bonds), is a major factor for the absence of such instruments (ADB, 2015).

SECTION 4. Literature Review

Having an empirical paper on bond market development with standard cost-benefit analysis is rare. This paper will attempt to analyze the viability of secondary bond market using technical cost-benefit methodology. This CBA demonstrates that if the secondary bond market becomes active in Bangladesh, it will bring certain level of benefits to the economy through interest rate reduction and reduced transactions costs of bond trading.

Existing empirical studies on bond markets mostly focus on their benefits from the broader perspective of the economy. It is the supply-leading hypothesis, which assumes that the accumulation of financial assets triggers economic development. It began with the work of McKinnon (1973), who argued that for many countries, especially developing ones, inefficient capital allocation leads to lower growth because of what he called "financial repression". This occurs when government interventions in the market distorts prices and leads to misallocation of capital. . Lately, economists have been working 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 the development of the banking sector leads to economic growth.

Studies on financial markets in emerging markets mostly focus on equity markets, with minor focus on bond markets. Data on bond markets is limited and little empirical work exists, compared to the banking or equity markets. But increasingly, bond market development is regarded as critical to the strengthening of the financial system.

Hakansson (1999) explained a number of advantages of a well-developed bond market, including a possibility of creating of an efficient corporate financial structure. The elements that he suggested for developing a secondary bond market include greater transparency of financial reporting system, large and strong community of financial analysts and the existence of efficient mechanism for corporate reorganization and liquidation. These all together will enhance economic welfare of the country.

Ndinda (2012) explores the relationship between issuance of Treasury/Government bonds and economic growth in Kenya using data that spans from the year 2003 – 2011, with an aim to establishing the hypothesis of a causal relationship. The results show that the issuance of Government bonds has a positive effect on the level of economic growth in Kenya. Specifically, a 100% point rise in the market capitalization of government bonds raised economic growth by 20.9% points during the period under review. This implies that Kenya could enhance its economic growth by effectively and strategically strengthening the bond market and the uptake of Government bonds. The results from Kenya corroborate the supply-leading hypothesis.

Using the data from China, Hong Kong, Japan, South Korea, and Thailand for the period of 2002 – 2009, Said (2012) attempted to establish the link between the debt market and economic growth. Three categories of debt (public debt, private debt and foreign currency debt) were considered in his analysis. The country specific results (statistically significant only) show that the coefficient of public debt issued to economic growth ranges between 0.033 to 0.251. For private debt issued, results confirm 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, varies according to the category of debt issued.

To establish a secondary bond market, a certain level of advanced financial sector is required. Without proper preparation, a speedy introduction of a bond market may create tensions in the financial sector and affects the overall fiscal discipline.

4.1 Analysis of Interventions

There's currently no functional secondary bond market in Bangladesh. The aim of this CBA is to find out the additional costs and benefits required to make the secondary bond market in Bangladesh functional, and look at whether it is a sound investment or not.

The in-depth CBA will consider several issues related to current credit mechanism in the banking system, its interest rate structure on lending and deposits, and the government strategic decision-making for sourcing its financing for fiscal operations. It is expected that, if efforts of secondary bond market development receives the expected attention from bond issuers and investors, it will accrue a share of total domestic credit that the banking sector provides.

4.2 Additional costs

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

(i) Capital costs

To address the bond market constraints, the government and ADB agreed to build on several measures. The program aims to “deepen and broaden the outreach of the joint reforms program initiated by ADB and the government by (i) extending the government yield curve and, therefore, promoting a more liquid government bond market and eventually corporate bond market; (ii) catalyzing institutional investor demand by broadening, deepening, and diversifying the investor base; and (iii) enhancing the supply of alternative financial instruments” (ADB, 2015). For these reform programs, ADB will provide a total of \$250 million to the government for the period 2015-2017.

As described in ADB (2015), the structural reforms under the program include costly measures, such as a significant enhancement in the regulatory and enforcement capacity of Bangladesh Securities and Exchange Commission (BSEC) and Insurance Development and Regulatory Authority Bangladesh (IDRA), as well as an upward shift in the rates of treasury bills and bonds to be more aligned with market rates. This budget support to the government from ADB is crucial to implement the reform programs..

Thus the government will need to prepare effective regulatory system, which requires capital spending, as well as other expenditures to create easily accessible e-investor data base and e-based trading of bonds. The government will also need to allocate resources on capacity development of primary dealers and related economic agents. In this CBA, for simplicity, the total government borrowing of \$250 million from ADB will be considered as the capital costs for developing a secondary bond market. .

(ii) High issue costs

As described earlier, corporations or bond issuers will have to incur high costs to issue bonds, compared to borrowing from banks. Costs of bond issuance comes from BSEC registration fee, publication and printing of prospectus, printing of certificates, listing fee, annual stock exchange fee, trustee fee etc. Although issue costs are about 8% of total issue value, this CBA assumes a conservative rate of 6.0% of total issue value.

4.3 Additional benefits

Additional benefits associated with the establishment of a secondary bond market come from two possible sources: (i) impact of bond market on economic growth; and (ii) reduced transaction costs associated with more liquid and transparent securities market.

(i) Economic growth impact

A vibrant secondary bond market will create a competitive environment in the money market and put alternative financing options on the table. Both borrowers and investors will receive another window for borrowing and investment. Banks and non-banking financial institutions will face pressure in terms of reducing their higher interest rates for lending, which will lead to more investments. Both the government and commercial banks are required to go for interest rate system determined by the market. Thus it is expected that the market interest rate will decline with the presence of an established bond market. A part of resources that the government allocates for its fiscal operations will also come from secondary bond market operations, which may shrink the current share of NSD certificates and government borrowing from the banking system.

Lower interest rates are closely associated with higher investment, which leads to higher economic growth. Both the government and private corporations will enjoy the benefits of lower interest rates. There is no empirical evidence yet on how establishing a secondary bond market would bring benefits for economic growth in Bangladesh. However, experiences from other countries confirm that³ there are considerable benefits to economic growth associated with bond markets.

(ii) Benefit from reduced transactions costs

Standard theories of the bid-ask spread (Harris, 2003) decomposes the transaction costs of a security in any market into three parts: (i) liquidity costs; (ii) information asymmetry costs; and (iii) inventory holding costs. Liquidity costs compensate market makers for not being able to unwind positions when they would like to; information asymmetry costs arise when the presence of informed traders forces market makers to adjust prices for the risk of executing unfavorable trades; while inventory holding

³ See, for instance, Said (2012); Ndinda (2009); and Fink *et al.* (2003).

costs represent the direct costs of being a market maker and holding stock ready to trade (e.g natural volatility of the stock, legal fees, commissions etc....). Additionally, Edwards *et al.* (2007) through empirical evidence show that transparent bond markets have lower transaction costs than non-transparent bond markets, and that transaction costs drop when bond markets have greater degree of price transparency. It concludes that public traders benefit significantly from price transparency.

In theory, all of these costs should be greater in an informal, illiquid market such as it exists in Bangladesh today and should be lower in a formal and more liquid market. This is reflected in the bid-ask spread (the buy and sell spread). In markets with low transaction costs, the bid-ask spread is small. The benefit of a bond market will be thus that the bid-ask spread (the transaction costs) will be reduced for corporate and government bonds. Empirical studies confirm that the average spread for retails trades in securities markets range between 0.2% to 1.38%, depending on the retail order size.⁴ In this study we assume a more transparent bond market will allow for a 40 basis point reduction in round-trip transaction costs on average. We also assume a conservative turnover ratio of 0.4, less than other developing bond markets such as those in Thailand, Indonesia, Malaysia and Philippines, which range from 0.5 to 0.8 (ADB, 2015a).

The CBA of this paper will be developed based on the above discussion of possible costs and benefits components.

SECTION 5. Methodology

The standard methodology for CBA will be used for estimating the net benefits of the intervention, followed by estimation of net present value (NPV), benefit cost ratio (BCR) and economic internal rate of return (EIRR). Various discount rates will be applied for checking sensitivity analysis of all results. Specifically, the following methodology will be used for the purpose of the CBA:

5.1 Net Present Value (NPV)

The net present value, defined as the sum of the present value of benefit and cost streams over a period of time, is one measure that will be used to evaluate the contribution of secondary bond market development. This following specification of NPV will be used.

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

⁴ See, for instance, Edwards *et al.* (2007); and Chakrabarty and Sarkar (2003)

where, B_t is additional benefits because of secondary bond market development in year t ; C_t is the additional costs associated with secondary bond market development in year t , and δ is the discount rate.

5.2 Benefit-Cost Ratio (BCR)

BCR is a relative measure of CBA that is used to evaluate the payoff of any investment. This measure is calculated by dividing total discounted benefits by total discounted costs as shown in equation 2.

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

5.3 Economic Internal Rate of Return (EIRR)

The internal rate of return is an alternative measure for evaluating the payoff to investments, which has been widely used in the investment literature. The EIRR is the rate at which discounted benefits are equal to the discounted cost of investment. In other words, the EIRR is the rate of return that would set NPV equals zero, as shown in equation 3.

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

SECTION 6. Estimation and Results

6.1 Data and variables

The study used the secondary data, collected from Bangladesh Bank, Dhaka Stock Exchange and Planning Commission. Variables such as domestic credit, lending interest rate, interest rate on NSD certificate, investment financing from ADB for secondary bond market development has been used for the purpose of the CBA.

6.2 Assumptions

The following assumptions are considered for the aforementioned CBA analysis:

- a) The secondary bond market through issuance of government and corporate bonds will be able to accrue a certain portion of total domestic credit market⁵;

⁵ It is assumed that bond market capitalization will constitute approximately 1.0% of total domestic credit in the second year (2016) of intervention period. While domestic credit will grow at 5.5% p.a. (which is average growth of FY2011-FY2015) in each year, the bond market will accrue 2% of the market capitalization in third year, 3% in the fourth year, 4% in the fifth year, 5% in the sixth year, 6% in the seventh year, 7% in the eighth year, 8% in the ninth year, and 9% in the 10th year. It is

- b) All prices will be valued in million (Taka) in current prices;
- c) Economic prices of additional costs will be estimated by converting the financial prices with respective shadow prices, if needed;
- d) The capital costs of this CBA are the borrowing of the government from ADB which is about \$250 million or equivalent Taka amount.
- e) Currently, the total public bond issue costs averaged about 8.0% of total amount raised; whereas there is only maximum 2.0% service charge for borrowing from the banking system, and thus there is 6.0% additional costs associated with bond issuance, and thus this study also considers this as one of the additional costs for secondary bond market.
- f) A conservative 0.3 coefficient of government bond market capitalization to economic growth and 0.1 coefficient of private bond market capitalization to economic growth will be used for estimating the benefits of secondary bond market to GDP growth.⁶
- g) Benefit from reduced transaction costs is estimated through calculating bond market capitalization multiplied by a fraction of the difference between transaction costs without secondary bond market and transaction costs with secondary bond market. For simplicity, the fraction (difference between transaction costs without secondary bond market and transaction costs with secondary bond market) is assumed to be 0.004. We assume a turnover ratio of 0.4.
- h) A 10% economic discount rate will be used as the base line analysis; however the sensitivity tests will be employed using 5% and 3% economic discounts rates;
- i) The economic life of the intervention is assumed at 20 years (2015-2034).

6.3 Results

The economic cost-benefit analysis as shown in Table 1 indicates that the base case results in an ERR of 95.7%, along with an NPV of Tk. 336,383 million. The intervention is economically viable in the base case.

Table 1: Cost-benefit analysis for Secondary bond market development

also assumed that bond market will accrue 10% of total market capitalization from 11th to 20th year of the intervention period under review.

⁶ In literature, as found in Said (2012); Ndinda (2009); and Fink *et al.* (2003), the coefficient of government bonds to growth varies from 0.03 to 1.105, and the coefficient of private bonds to economic growth varies from 0.02 to 0.382. As secondary bond market development in Bangladesh is new, and it will take time to realize the actual benefit of bond market development. However, at the same time, it has a high potential of further growth as the economy of Bangladesh has been growing fast and both the public and private corporate sector require substantial resources for long-term investment. Taking these factors into consideration, this study considers a conservative coefficient of 0.3 for government bonds and a conservative coefficient of 0.1 for private bonds.

(Tk. in million)

Year	Aggregate Costs			Aggregate Benefits			Net Benefit	NPV At 10%
	ADB Financing	Costs for bond issuance	Total Costs	Growth benefits	Reduced transaction costs	Total benefits		
2015	6,475	0	6,475	0	0	0	-6,475	-5,886
2016	6,475	1,677	8,152	6001	27	6028	-2,124	-1,755
2017	6,475	3,622	10,097	14071	56	14128	4,030	3,028
2018	0	5,867	5,868	22270	89	22360	16,492	11,264
2019	0	8,448	8,449	31331	125	31457	23,008	14,286
2020	0	11,405	11,405	41323	165	41489	30,084	16,982
2021	0	14,780	14,781	52323	209	52532	37,752	19,373
2022	0	18,622	18,623	64409	258	64667	46,044	21,480
2023	0	22,984	22,984	77669	311	77980	54,996	23,324
2024	0	27,924	27,925	92196	369	92565	64,640	24,922
2025	0	33,508	33,508	108088	432	108521	75,013	26,292
2026	0	36,186	36,187	114048	456	114504	78,318	24,954
2027	0	39,079	39,080	120336	481	120818	81,738	23,677
2028	0	42,204	42,204	126971	508	127480	85,276	22,456
2029	0	45,578	45,578	133972	536	134509	88,931	21,289
2030	0	49,221	49,222	141360	565	141925	92,704	20,175
2031	0	53,156	53,157	149154	597	149751	96,594	19,111
2032	0	57,406	57,407	157378	630	158008	100,602	18,094
2033	0	61,996	61,996	166056	664	166720	104,724	17,123
2034	0	66,952	66,952	175212	701	175913	108,961	16,196

NPV 336,383
IRR 95.7%

Source: Author's calculation

A sensitivity analysis as shown in Table 2 indicates that there are significant benefits with a secondary bond market development. The benefit cost ratio has been greater than one in all cases, meaning for every Taka spent on secondary bond market development, there will be more than one Taka in benefits.

Table 2: Results with sensitivity analysis (Tk. In million)

Intervention	3% discount rate			5% discount rate			10% discount rate		
	Benefits	Costs	Benefit Cost Ratio	Benefits	Costs	Benefit Cost Ratio	Benefits	Costs	Benefit Cost Ratio
Secondary bond market development	1,198,693	412,712	2.90	928,526	320,378	2.90	517,333	180,950	2.86

Source: Author's calculation

SECTION 7. Policy Suggestions

As the net benefits from the secondary bond market development are well established based on global experiences, it is expected that further secondary bond market development establishing a true corporate bond market will widen the financing options for both bond issuers and investors. The empirical evidence provided earlier also confirms it.

There are also some unquantifiable benefits which may further strengthen the argument, such as the government having another source of financing for its long-term investments at lower costs, and the diversification of credit and investment risks. This will reduce future fiscal burden of the government.

However, risks are also associated with overall governance of the capital market, transparency in business transactions, and the quality of independent rating agencies.

References

- ADB, (2015). *Report and Recommendations of the President to the Board of Directors on Proposed Policy-based Loans and Administrations of Technical Assistance Grant to the People's Republic of Bangladesh for the Third Capital Market Development Program*. Manila.
- ADB (2015a), Asian bonds online, https://asianbondsonline.adb.org/regional/data/bondmarket.php?code=Bond_turn_ratio, accessed 4 March 2016
- Akhtaruzzaman, M, Rahman, M.H., and Rahman, M.H., (2009). *Prospects and Challenges of Bond Market Development in Bangladesh*, Policy Note Series PN0901, Bangladesh Bank: Policy Analysis Unit.
- Chakravarty, S., and A. Sarkar (2003), 'Trading costs in three US bond markets', *Journal of Fixed Income*, pp. 39-48.
- Edward, A.K., Harris, L.E., and Piwowar, M.S. (2007). 'Corporate bond market transaction costs and transparency,' *The Journal of Finance*, Vol. 62, No. 3, pp. 1421-1451.
- Fink, G., Haiss, P., and Hristoforova, S. (2003). *Bond markets and economic growth*, IEF Working Paper Nr. 49, University of Economic and Business Administration, Vienna: Research Institute for European Affairs.
- Hakansson, Nils H., (1999). "The Role of A Corporate Bond Market in an Economy—and in Avoiding Crises", *China Accounting and Finance Review*, Volume 1, No. 1.
- Herring, Richard J., and Nathporn Chatusripitak, (2000) *The Case of the Missing Market: the Bond Market and Why It Matters for Financial Development*, Paper prepared for the Asian Development Bank Institute/Wharton Seminar on Financial Structure for Sustainable Development in Post-Crisis Asia, Tokyo.
- King, R. G. and R. Levine, (1993). Finance and Growth: Schumpeter Might Be Right, *Quarterly Journal of Economics*, **108**: 717-38.
- Mckinnon R.I., (1973). *Money and Capital in Economic Development*, Washington D.C., The Brookings Institution.
- Ndinda, Koka Diana (2012). *The relationship between the government bond issues and economic growth in Kenya*, A Management Research Project submitted in partial fulfilment of the requirement for the award of Master of Business Administration, University of Nairobi: School of Business.
- Said, Residah Mohd (2012). *East Asian bond markets and economic growth*, DOI: 10.773/International Proceedings of Economics Development and Research, V57.14.
- International Capital Market Association (2013). *Economic Importance of Corporate Bond Markets*. Zurich, Switzerland

Debnath, Ripan Kumar (2014). *Opportunities and Impediments of Bond Market Development in Bangladesh*. Institute of Governance Studies (BRAC University), Dhaka, Bangladesh.

Sophastienphong, K; Mu, Y; Saporito (2008). *South Asian bond markets: developing long-term finance*