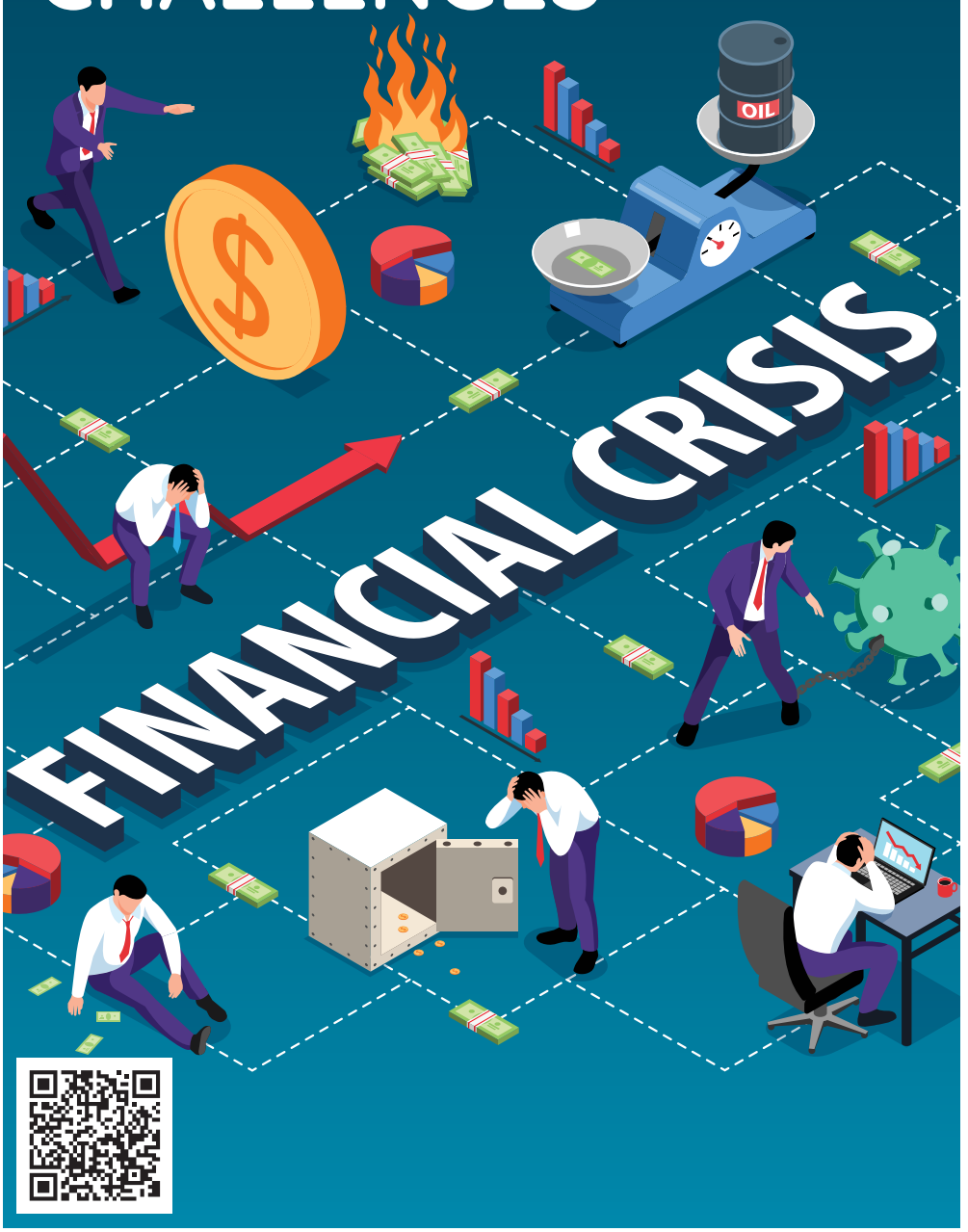
BANGLADESH EXTERNAL SECTOR: COPING WITH THE EMERGENT CHALLENGES



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Table of Contents

Editorial 4

President's Note 5

RESEARCH - ARTICLE

Bangladesh External Sector:
Coping With the Emergent Challenges 7
Mustafizur Rahman

Global Financial Crisis and Developmental Central Banking:
The Bangladesh Experience 13
Atiur Rahman

Universal Pension Scheme:
Challenges in Bangladesh 18
Md. Salah Uddin Rajib, PhD
Lingkon Mondal, FCA
Fuad Hassan, ACA

Managing the Current Economic Headwinds in Bangladesh:
Implications for the Private Sector and Way Forward 28
Dr. M Masrur Reaz

Alt Man's Z score in Predicting Business Success
- A Study on 5 Bangladesh PCBs 34
Dr. Md. Shakawat Hossain

Empowering Poor Women in South Asia:
Unveiling the Impact of Grameen Bank through Micro-finance System 42
Mohona Biswas
Dr. Zahurul Alam
Azizur Rahman

Malaise of Malware Attacks
Wake-up Call for Cybersecurity in Bangladesh 56
M Aminul Islam

The Impact of Institutional Ownership on CEO Compensation among the NBFIs:
Bangladesh Perspective 63
Shahed Bin Sadeque
Anamul Haque
Nusrat Jahan Nishat



Editorial

Mahmudul Hasan Khusru FCA
Chairman - Editorial Board

It gives me immense pleasure that we have been able to publish the July-December 2022 issue of 'Bangladesh Economia', a research-based journal of ICAB, although some time has elapsed from the schedule. However, this issue contains scholarly written articles, in-depth research based articles evolved from the current state of business, finance and economy.

Bangladesh Economia has been brought out biannually under the aegis of the Research Economy, Business and Finance Committee of the Council-ICAB. ICAB always welcomes publications from areas of research in the uncharted field of business, economy, finance and other professional issues. This publication of the Economia covered many interesting & contemporary issues of home and abroad. The manuscripts were written by the prominent writers, researchers and other professionals and the peer-review of these were done by relevant experts. 'Bangladesh Economia' uses double-blind review, which means identities of both the reviewer and authors are concealed throughout the review process.

Bangladesh is steadily maintaining economic progression despite global economic crisis caused by Russia-Ukraine war started from February 2022. The reason of crisis shot the prices of essential commodities spiraling so high across the globe, and the country is not being spared of this, that is of tug of war between Russia and Ukraine which has disrupted the global supply-chain management of food grains. People have been bearing the brunt of this war. To keep the prices of commodities stable, central bank has taken a number initiatives including adjustment of the value of Taka against dollar. In this milieu, the writers, researchers & the scholars have been trying to depict the whole economic scenario and forecast as well as the way forwards to combat the current economic crisis.

With this prelude, the readers will find more details while navigating the writes-up.

Last but not the least, my heartfelt thanks to the authors, researchers and the reviewers who have given their valuable time and efforts to make it a distinctive piece of publication.

With best wishes to all.



President's Note

Md. Shahadat Hossain FCA
President-ICAB

ICAB published an important and compelling research-based Journal that would rightfully encourage our members and students to use their knowledge and skills in important professional research works.

Through continuing support, respect and admiration, ICAB always encourages the researchers, and the potential researchers who would like to contribute to professional development and the economy of the country as a whole. ICAB is working constructively and cooperatively to promote professional research through a variety of means; collaboration with academia, research institute and professionals from home and abroad. Mainly the journal is trying to identify the very intrigue economic issues of the country and the way forward to address those issues.

At present, inflation and dollar crises are very persisting phenomena that are crippling the up-ward trend of the development of the country. In January 2023 Bangladesh Bank unveiled a monetary policy for the next six months for tackling the headwinds passing through the economy.

As part of accommodative monetary policy, Bangladesh Bank has taken a number of moves to contain inflationary and exchange rate pressures, support desired economic growth, and ensure the necessary flow of funds to the economy's productive and employment-generating activities and to prevent the economy from overheating and ward off hyperinflation.

Improvements in these areas will expedite Bangladesh's future economic gains. Otherwise, the dollar and fuel shortages will hinder import of raw materials, capital machinery and fertilizers, if it continues. The expansion of the farm and industrial output will end up fanning inflationary fires, further. However, the Central Bank's move towards a market-based, flexible and unified exchange rate regime by the end of this fiscal year, is appreciable.

In this uncertain/unpredictable state of economy, the journal is brought out which is praise/worthy, I appreciate all those who enriched our Journal through their thoughtful professional research papers and in-depth articles on concurrent issues. I would like to express my gratitude to Mr. Mahmudul Hasan Khusru FCA, Chairman, Editorial Board of Bangladesh Economia who spent his valuable time to bring out this publication successfully.

I also thank the Members of the Editorial Board, the Researchers, the Writers, the Reviewers and the Member-Secretary who have accomplished an outstanding work of this publication.

Finally, I believe, we will be able to stand out and earn respect through this publication, establish the journal as an authoritative one home and abroad.

With profound regards to all.

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RESEARCH - ARTICLE

Bangladesh External Sector: Coping With the Emergent Challenges

Mustafizur Rahman
Distinguished Fellow, Centre for Policy Dialogue (CPD)

The Backdrop

Bangladesh's external sector has been a key pillar of the country's impressive development narrative. This is manifested in robust export performance and increasing amount of remittance flows, comfortable balance of payment position, high foreign exchange reserves, exchange rate stability, and import capacity that serviced both consumer demands and development needs.

However, in very recent times, the country's external sector has come under considerable pressure, and on all counts – depleting reserves with erosion of import payment capacity, significant weakening of the BDT, high rate of imported inflation, and subdued performance of exports earnings and remittance flows. Policymakers appear to have been caught off-guard by the emergent scenario and are having to resort to fire-fighting to deal with the emergent scenario.

Whilst global factors did accentuate the situation, it is argued here that the underlying reasons originate from a number of policy failures which accumulated over time. These concern several areas: exercise of autonomy and independence of the central bank, forex reserves management, exchange rate adjustment, dealing with capital flight, and overall external sector and financial sector management.

The recent challenges facing the country's external sector have been exacerbated by pent up post-covid demand, recent price hike of essential commodities in the global market and the consequent rise in imports payments, depreciation-induced imported inflation, recessionary fear-induced depressed demand for Bangladesh's exports, and capital flight originating from trade mispricing and diversion of a large part of remittance flows to informal channels.

As may be recalled, for some years now, experts and economists have been drawing attention of policymakers to some of the underlying structural and institutional issues that merit urgent attention and demand concrete actions. These related to enforcement of rules and regulations in the financial sector, maintenance of central bank independence and prudent exchange rate management, among others. For example, economists have been urging for aligning the exchange rate of BDT with market fundamentals. They argued that the managed-float exchange rate regime was undermining export competitiveness, disincentivising remittance flows

through formal channels, and encouraging capital flights. Attention was also drawn to the management of forex reserves and lax enforcement of policies against trade mispricing. However, there was a lack of recognition of the gravity of the situation on the part of the policymakers.

Consequently, the external sector, a major mainstay of Bangladesh's robust economic performance, has experienced unprecedented levels of challenges, uncertainties, and volatility in recent period, resulting in the end in Bangladesh being forced to negotiate a USD 4.5 billion balance of payment support from the IMF. Many of the earlier-suggested initiatives are reappearing as stringent conditionalities.

Whilst the challenges faced by Bangladesh's external sector predate the Russia-Ukraine war, the war itself has exposed a number of fault lines and exacerbated the pre-existing weaknesses which characterised the country's external sector management.

This section deals with a number of issues that inform Bangladesh's external sector performance in the early months of FY2022-23. The next sections focus on the followings: (a) sheds light on the decreasing trends in nearly all components of the balance of payments and their impact on the forex reserves; (b) draws attention to the volume-driven nature of Bangladesh's RMG exports and the increased export concentration of recent times; (c) compares the overseas employment trends with incoming remittance flows to show the mismatch between the two indicators; (d) illustrates efforts to rein-in imports and anticipates how declining global prices could ease the pressure on import payments over the coming months; (e) shows the divergence between the Real Effective Exchange Rate (REER) and the Nominal Effective Exchange Rate (NEER), stressing the point that the BDT had remained overvalued in recent years and contributed to stifling the growth of exports and remittances; (f) recommendations as regards ways forward to address emergent challenges facing Bangladesh's external sector.

Balance of Payments

The balance of payments for the first four months of FY2023 (July-October) shows the overall balance coming down from (-) USD 1.34 billion to (-) USD 4.87 billion (Table 1) and the drawdown on gross reserves from USD 46.5 billion to USD35.8 billion which in terms of equivalent months of imports came down from 6.2 months to 5.2 months. The amount of forex reserves that are not readily available to underwrite imports has been estimated to be worth about USD 8.4 billion. Thus, if the IMF definition of reserves is considered, the current forex reserve would be about USD 27.0 billion or equivalent to about four months of import payments. To recall, the reserve in June 2021 was about USD 46.0 billion or equivalent to about nine months of import payment.

In recent months, there has been a notable rise in import payments underpinned by the significant rise in prices of almost all items in the global market; this is also reflected in the very high growth of L/C settlement related payments. If previously the high flow of remittances helped keep the current account balance in a comfortable situation, this was no more the case, since there has been a significant slowdown in the growth of remittance flows.

A caveat though. Import payments for some items such as capital machineries show very high figures, which is also reinforced by L/C settlement figures. This demands a closer scrutiny. This could be only partially explained by the one-time bulk imports of capital machineries for the mega projects. There is a need for an indepth look to check against the likelihood of over-invoicing in this connection. This is particularly because, in general, the customs duties on capital machineries are zero and consequently the

Table 1: Factors Contributing to Drawdown of Forex Reserves

B.o.P. Components	FY2023 VS FY2022, July-October (in billion USD)
Current Account Balance	(-) 0.667
:of which, Trade Balance	(-) 0.427
Capital Account Balance	(+) 0.007
Financial Account Balance	(-) 2.828
Overall Balance	**(-) 3.533**

Source: Based on Bangladesh Bank data

possibility of over-invoicing in case of imports of these items is that much higher. Bangladesh Bank has also unearthed incidences of under-invoicing in case of imports to avoid customs duties; the gap amount is settled through payments abroad by transferring money from Bangladesh via hundi/howla informal channels. The import categorisation for these items made by Bangladesh Bank should also be made in a more transparent manner, and the respective HS codes should be made public to ensure greater scrutiny. On the other hand, the significant fall in L/C opening for capital machineries in Q1 also merit closer investigation particularly since these items are associated with performance of export-oriented and import-substituting industries and, as a result, to production and employment.

It is not enough to stop payments when over- and under-invoicings are detected by Bangladesh Bank, as has been the case in recent years. Legal measures must be taken, relevant laws enforced and violators brought to justice to transmit stern signals and forestall such activities in future.

Export Earnings

Over the July-November period of FY2023 export earnings have registered a decent 10.9 per cent growth over the corresponding period of FY2022. As expected, performance of RMG had led the way while many of the non-RMG items have posted negative growth over the corresponding correlates of the previous fiscal year. This has led to further concentration of exports favouring the apparels.

However, the impressive performance of apparels is informed by some structural factors that need to be looked at more closely.

The estimations presented in Table 2 clearly reveal the primarily volume-driven nature of export earnings as against exclusively price-driven. As is known, the prices of all inputs for production of apparels (cotton, yarn and fabrics) have risen significantly during March-June, 2022 period. However, brands, retailers and buyers have been able to pass on a large part of this on to producers and exporters in Bangladesh. This once again reinforces the argument for taking steps to raise bargaining power of Bangladesh's concerned stakeholders and strengthen the forward linkage of export-oriented RMG industry of the country.

Remittance Flows

The growth of remittance flows during the July-November period of FY2023 was only 2.6 per cent (over the corresponding period of FY2022) which does not match the significantly high number of migrant workers who left for overseas jobs in the recent past months. Bangladesh Bank's supportive policies (higher exchange rate, 2.5 per cent cash incentives, waiver of bank charges, allowing higher forex retention, etc.) did not produce the expected results.

Between January 2021 and October 2022 more than 1.56 million people have left Bangladesh for overseas job markets. There has also been no sign of unusually large number of returnee migrants. Thus, this outflow has no doubt led to an increase in the size of stock of migrant workers in concerned destination countries. A large part of these workers (about 1.3 million or more than four-fifths) went to countries in the Middle-East. Surprisingly, in spite of high migrant flows, remittances came down significantly from some Middle-East countries in the first five months of FY2023 compared to the corresponding period of FY2021-22. For example, although more than a million people have gone to Saudi Arabia over the last 18 months, remittances from the country came down by about USD 462.0 million in the first five months of FY2023 compared to the corresponding period of FY2022. On the other hand, remittance from Kuwait rose by USD 448.7 million over the same period although the corresponding number of migrant workers was only about 17 thousand (Table 3).

Table 2: Volume, Price and Value Changes of RMG Export in the EU: 2021 vs 2022 (July-September)

(in percentages)

HTS Code	Value increase	Volume increase	Per unit price increase
Knitwear (61)	39.11	20.38	23.52
Wovenwear (62)	39.52	21.52	22.94
Overall	39.25	20.74	23.35

Source: Estimation based on EUROSTAT (2022)

Table 3: Flow of Migrants and Remittance Inflows by Major Countries

Country	Number of migrant workers	Remittances inflow (in million USD)		Remittance growth (July-November)	
	January 2021-October 2022	July-November 2021	July-November 2022	Year-on-year change (in million USD)	Year-on-year growth (%)
KSA	10,01,001	2,065.04	1,602.68	-462.36	-22.39
UAE	1,18,310	700.14	661.99	-38.15	-5.45
Kuwait	17,568	694.78	1,143.56	448.78	64.59
Total for all countries	15,65,082	8,608.87	8,793.12	184.25	2.14

Source: Estimation based on BMET and Bangladesh Bank Data

There is a need for a deeper investigation as regards the factors driving the fall in remittance flows from particular countries in the Middle East (e.g. Saudi Arabia, UAE) while this was not the case for other countries in the region (e.g. Kuwait). In all likelihood, the significant difference between formal and informal (hundi/howla) exchange rates may have created an added incentive for the diversion of remittance flows from formal to informal channels which indicates that in certain countries hundi/howla syndicates remain very active and they are taking advantage of the exchange rate differences.

It is to be noted that the recent changes in the exchange rate for remittances (BDT 107 per USD plus the 2.5 per cent cash incentive) have significantly reduced the margin between formal exchange rate and the curb market rate in Bangladesh. To what extent the difference in the rates between the formal and informal hundi/howla market rates still persists remains an issue for speculation, although the margin must have reduced significantly in recent times.

Bangladesh Bank will need to keep the emergent scenario under constant monitoring and vigilance and both exchange rate management and enforcement of relevant laws particularly against hundi/howla syndicates will be critically important in this regard.

Mixed Signals and A Silver Lining

Reduced Import Payments

The recent policy of reining-in imports through various tools, pursued by the GoB and the Bangladesh Bank, appears to be paying off. While L/C settlement during Q1 (July-September) of FY2023 rose by 31.6 per cent (an increase of about USD5.39 billion), compared to the corresponding period of FY2022, L/C opening had come down by (-) 8.6 per cent (a drop of USD1.72 billion) compared to the corresponding period of the previous year. One can infer from this that L/C settlement in Q2 of FY2023 is likely to come down significantly, with lower import payments and consequently an easing of the pressure on forex reserves may be expected. Demand-side impact on imports, induced by higher global price and depreciation-induced price rise, are some of the other reasons. However, lower import will have adverse implications for domestic production and export-oriented activities as a part of this is driven by lack of access to foreign currency to underwrite import L/Cs. On the other hand, exports are likely to be negatively impacted by recessionary trends in major destination countries, although remittances are expected to rise in the backdrop of recent refixation of exchange rate for remittance flows.

Global Price Trends

The silver lining is that the global prices appear to have peaked already, and are now coming down from the high of April-June, 2022 (Figure 1). This is evidenced by global price trends of some of the key commodities such as fuel, fertiliser, edible oil and sugar and important inputs such as cotton for which Bangladesh is highly dependent on imports. It is anticipated that thanks to this the pressure on import payments is likely to ease in the near-term future. The exchange rate depreciation-induced high prices will also have a demand-side impact resulting in lower import payments depending on the nature of the particular item and respective demand elasticity. However, it should also be kept in mind

that import restrictions and lower imports will have adverse implications for production-related activities in the economy and for near-term economic growth prospects.

Exchange Rate Movements

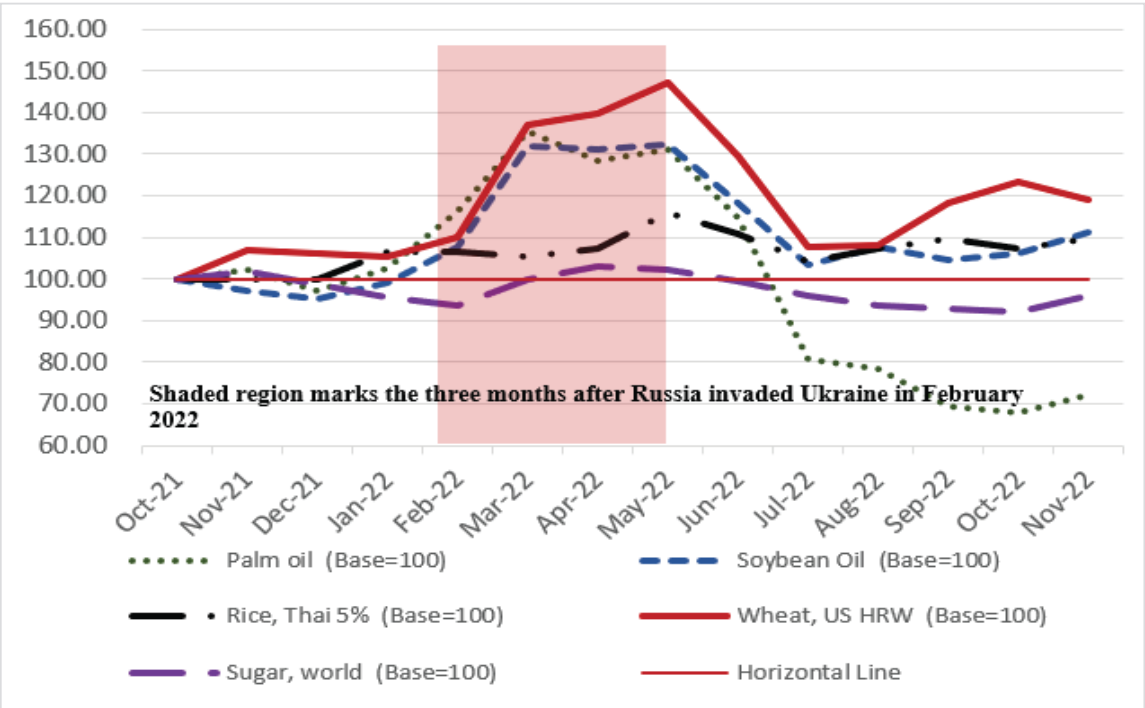
Following the depreciation of the BDT vis-à-vis major currencies, the Real Effective Exchange Rate (REER) and Nominal Effective Exchange Rate (NEER) of the BDT is likely to have changed in recent times. As can be seen from Figure 2, the REER of BDT has appreciated significantly over the past few years, particularly between 2012 and 2021. This resulted in the undermining of Bangladesh's export competitiveness compared to key competitors and had created a disincentive for remittance senders. For example, BDT's REER was significantly higher relative to those of the currencies of India and Vietnam (compared to the base year of 2010).

Thanks to recent significant depreciation of the BDT, the difference between BDT's NEER has come down with some of the competitor countries such as Vietnam and India. The exchange rate movement indicates that the rising and substantial discrepancy between the REER, NEER, and NER of BDT appears to have narrowed down in recent times. It appears that BDT's NER is closing the gap with what the exchange rate would be had it been market-determined (Figure 2).

It is reckoned that time has come for Bangladesh to shift from managed float to a free float regime. This will necessitate dealing with the issue of imported inflation through better coordination of monetary and fiscal policies, strengthening of social safety net programmes, extension of open market operations and, if required, through introduction of targetted rationing.

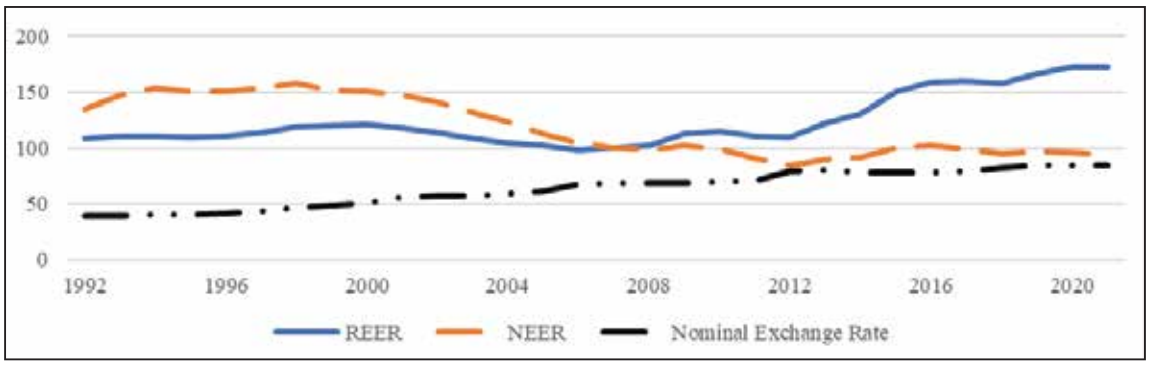
As is known, after more than a decade, Bangladesh has asked for a balance of payment support of USD 4.5 billion from the IMF. As was noted earlier, whilst global factors, particularly rising prices were key reasons driving the current B.o.P. anxieties, these should be seen more of as 'accentuating drivers' and not as much as exclusively 'explanatory factors'. One of the key underlying causes was associated with exchange rate management that ignored calls for gradual depreciation of the BDT which was recommended by experts for the past several years. Bangladesh's policymakers will need to learn from the recent experience and draw necessary lessons for future policymaking.

Figure 1: Food grains (Rice, Sugar, Wheat) and Edible Oil (Soybean and Palm) Price Trends Since October 2021



Source: Estimated based on data from the World Bank Pink Sheet; Prices in October 2021 or the base prices are assumed to be 100 for ease of comparison.

Figure 2: Movements of REER vs NEER vs Nominal Exchange Rate: BDT, Indian Rupee and Vietnamese Dong



Source: For REER and NEER, data from Bruegel was used. For Nominal exchange rate, data from Bangladesh Bank, Reserve Bank of India and World Development Indicators were used.

Going Forward

Bangladesh Bank will need to fully exercise its rights and responsibilities as an institution mandated to oversee management of the monetary sector of the country. The erosion of its autonomy and authority in this regard, seen in recent past years, must be reversed. The demands on the quality of macroeconomic and monetary management will need to be raised considerably over the near-term future.

No doubt, the key to robust external sector performance lies in the efficacy and good governance in overall macroeconomic management. Particularly in view of Bangladesh's upcoming graduation from the Least Developed Country (LDC) status, with consequent significant preference erosion, the transition from preferential market access-induced competitiveness to skills and productivity-induced competitiveness must be given highest importance. Concrete steps towards export and market diversification, greater regional integration and triangulation of trade, investment and transport connectivities and development of value chains and production networks must be given priority in policymaking. The state of the country's external sector performance and B.o.P. position will critically hinge on this.

Middle-income transition and the consequent rise in costs of borrowings should also be an important consideration in view of external sector management. Servicing of foreign debt, till now comfortably managed, could add new dimensions to the emerging challenges in connection with reserves management, particularly in the backdrop of maturing of some of the hard term loans of the recent past. The growing private sector foreign loan, currently standing at about USD 25.0 billion and about 70.0 per cent of which will be maturing in about a year, while not backed by sovereign national guarantee but by the banks, has added a new dimension to the debt discourse. In this backdrop, the demand for foreign currency in the market will rise, with ramifications for exchange rate movements. These newly emerging concerns should be factored into the country's exchange rate management, particularly also because the share of non-concessional loans is set to rise in the loans portfolio of Bangladesh because of the country's middle income graduation.

The depreciation of BDT will also have important implications for debt servicing, both in case of public and private debts, more specifically for loans taken to underwrite projects that generate revenue in local currency (e.g. energy projects). Foreign exchange liabilities as also economic, internal and financial rates of returns should be re-estimated in view of this, and business plans revisited, to ensure proper debt servicing.

As is known, the IMF has come up with a number of suggestions as regards management of exchange rate, forex reserves and overall monetary sector; it has also underscored the need for data transparency. These call for serious attention and urgent decision by policymakers. As was noted, the need for many of these policy initiatives and actions were pointed out by experts for quite some time now. Reforms and measures in view of these must be subject to open and participatory debate and discussion, keeping in the perspective both short-term needs of the economy and the medium to long-term strategic interests of the country, keeping in the perspective the attendant trade-offs.

Global Financial Crisis and Developmental Central Banking: The Bangladesh Experience

Atiur Rahman
Honorary Professor, Department of Development Studies, Dhaka University
Former Governor, Bangladesh Bank

Innovations in Monetary Policy In the Context of Developmental Central Banking

It is now well-established that central banks can make wide-ranging effects on the real economy and society through effective implementation of monetary policies. This depends on how wisely a central bank defines its policy space and interacts with major stakeholders, mostly banks, to motivate and act as desired. Fortunately, Bangladesh Bank (over the last 13-14 years) has been focusing on utilizing its mandates, objectives, targets, and instruments for effective transmission of its monetary policy decisions for desired economic growth with moderate inflation. Since 2008-09, it has prioritized financial inclusion as one of the overarching goal. The focus on financial inclusion served several purposes: it improved monetary transmission, broadened economic base, most importantly it brought the questions of ethics, equity, and environment into central policy focus, well before it became part of the mainstream global central banking trend. Compared to other countries, Bangladesh started this approach earlier. As we all know, monetary transmission in both developing and advanced economies are often incomplete. Hence, in line with the philosophy of developmental central banking, Bangladesh Bank has been trying to innovate market-based but somewhat activist policy design (Rahman, 2022).

The strategy pursued by Bangladesh Bank has been to allow moderate monetary growth proportion to real output growth expectations alongside guidance for lenders in channeling the financial inclusivity into output initiatives in all economic sectors. This strategy of pragmatic monetary policy of Bangladesh Bank, sharply contrasts with post-Global Financial Crisis (2007-08) large scale Quantitative Easing (QE) in advanced countries (by the end of the first decade of twenty-first century) in shoring up flagging global growth. Bangladesh Bank articulated its monetary policy objectives of prioritizing inclusive growth without compromising its core mission of price stability. It has been following the monetary targeting strategy by seeking to control growth of broad money (M2) at a rate it deems consistent with its objectives of output growth and price stability. As done by most central banks, Bangladesh Bank allows M2 being broadly determined by reserve money (RM) through money multiplier and by setting an operational target for RM accordingly. To reach its

RM target, Bangladesh Bank controls liquidity in the market on a day-to-day basis using conventional instruments. Often, it uses targeted refinance strategy to encourage growth in some sectors in the real economy.

To encourage inclusive growth, a blended approach of moral suasion as along with targeted credits for farm, nonfarm MSMEs for rural and urban communities to shore up domestic supply of output and enhance demand through increased employment income has been used. The trade-offs between supply and demand sides have been neatly balanced. In addition, BB has been pursuing targeted refinance lines for providing incentives to the banks to give more credit to priority areas like agriculture, livestock, SMEs, green enterprises etc. in addition to enforcing differential ceilings on loan growth, maximum loan size, debt equity ratios for some sectors for macro-prudential reasons. The final objective is to meet the target of sustainability and inclusivity (ibid.). The emphasis on agriculture and green energy can be linked to increasing supply to reduce inflation, given the large share of food and energy in the consumption basket. Bangladesh Bank also upgraded financial sector infrastructure covering wide-ranging digitization for improving transmission channel. The core goal has been to combine short-term business fluctuation management with long-term sustainability agenda. Simultaneously, Bangladesh Bank has been making attempts at ingraining socially and environmentally responsible financial ethos reflecting local context and global challenges as well.

The main motivation has been to enable the bottom of the pyramid through financing sustainable entrepreneurial innovations. These ideas of central banking were certainly ahead of the curve. But fortunately, the global financial and climate crises have been pushing many experts on central banking to think out of box and go for multiple targets beyond inflation targeting even though it was never less important than others. After more than a decade of Bangladesh Bank's courageous move to go beyond single target and materialize financial inclusion, it was heartening to hear Professor Barry Eichengreen of University of California, Berkeley in the same vein. According to him, "Monetary policy has implications for issues beyond inflation and payments, including climate change and inequality.The best way forward for central bankers is to use monetary policy to target inflation, while directing their regulatory powers at other pressing concerns." (Eichengreen, 2021). This shift in paradigm on monetary policy led us to focus more on the emerging concept of developmental central banking where Bangladesh Bank stood on a higher ground. In short, our innovations in monetary policy should not be viewed in isolation but within the broader context of the work agenda of a developmental central banking.

Why Developmental Central Banking?

Inclusive development has emerged as a global policy priority. While fiscal policy has a dominant role in addressing inequality, the central banks in many countries have broadened their objectives and have deployed several innovative monetary policy tools over time to ensure equitable allocation and distribution of sectoral credit. Although it is widely accepted that the key objective of any central bank should be to achieve price stability, the global financial crisis and most recently, the COVID-19 pandemic have highlighted a wider and complementary role of the central banks in safeguarding the economy against domestic and external shocks.

Central banks primarily contribute to inclusive development by maintaining low and stable inflation and ensuring stability in the financial sector. They also promote inclusive growth by safeguarding customers' interests and ensuring a prudent regulation for the financial sector. As a policymaker, investor (of foreign exchange reserves), issuer (of currency), and regulator (of the financial sector), a central bank can make its monetary policy more effective in addressing inequality while not jeopardizing its core responsibilities. Historically, central banks have pursued multiple developmental goals and tools (Bordo, 2007). Examples are the central banks of Argentina, Bangladesh, China, and India which have used a broad array of tools to manage their economies for developmental purposes.

As mentioned earlier, Central banks can play a broader role to help countries meet key challenges, such as generating productive employment, allocate investment to productivity enhancing activities and tackle the challenges of climate change. The central bank can work effectively with other key institutions, such as development banks, specialized financial institutions and a variety of government ministries

and private actors while, at the same time, ensuring that it is not overwhelmed with tasks better undertaken elsewhere. Developmental central banking works better with a stronger coordination between the central bank and government. In many developing and emerging economies, central banks have begun to place renewed emphasis on the promotion of economic development and structural transformation, looking beyond narrow mandates for macroeconomic stability. For example, the governor of the Reserve Bank of India recently concluded that financial inclusion has empowered monetary policy by strengthening its ability to stabilize inflation and reap welfare gains for the society (Rahman, 2022). And Bangladesh Bank, as already indicated, has been a pioneering central bank in promoting innovative features of financial inclusion with noticeable impacts on both financial stability and broadening the access to finance to the unserved and underserved. And fast adoption of digital technology has provided an edge to Bangladesh in making mobile financial services and agent banking services available to the doorsteps of the disadvantaged.

How Central Banking can Make Banking Better

Governments require the credit flow to create fiscal space to strengthen relief, recovery, and reform. For that, we need to enable spending on nationally produced goods and services. This can have positive impact on containing inflation through the route of supply side. If we direct the money to the many, that is an effective way to generate internal demand within a country which can incentivize more production of the goods domestically. It enables investment in productive capacities and creates more jobs. This is another area where we can inject money to enhance social protection to cover the new poor and vulnerable, and to ensure that excess liquidity does not create inflationary pressure.

We still, certainly, have inflationary pressure in many developing countries, including Bangladesh. The Ukraine-Russia war has made the situation even more complicated as prices are going to go up mainly due to supply chain disruptions and rise in value of USD against our catered from domestic currency devalue ,leading to higher level of imported inflation. These increases will have a significant effect on the inflationary situation in many developing countries.

Given these challenges, we need to talk about a more realistic monetary policy that addresses better than the single target of inflation. But it cannot remain oblivious to it either as inflation more hurts the poor. Hence the need for opting for more innovative monetary policy without creating any financial imbalance. This line of thoughts among the global policymakers got further enrooted upon facing the global financial crisis by the end of the first decade of this century. Former Chief Economist for the IMF-Olivier Blanchard has put this more eloquently, as – "Before the crisis, mainstream economists and policymakers had converged on a beautiful construction for monetary policy. … we had convinced ourselves that there was one target, inflation. There was one instrument, the policy rate. … If there is one lesson to be drawn from this crisis, it is that this construction wasn't right, that beauty is not synonymous with truth. The fact is that there are many targets with many instruments. How you map the instruments onto the targets and how you use these instruments best is a very complicated problem." (Blanchard, 2011).

Bangladesh has done quite well in making the balanced transition to restraining inflation and encouraging inclusive growth. How?

The Bangladesh Experience

Bangladesh has promoted inclusive finance for more than a decade, in the wake of the global financial crisis. We made financial services accessible to one and all, leveraging digital solutions to ensure reliable low-cost services.

As already pointed out, Bangladesh Bank gave attention to underserved segments, such us agriculture or micro and small and medium enterprises, and prioritized women entrepreneurs. Private banks have been particularly motivated to finance SMEs and prioritized women entrepreneurs on the strength of incentives from the Bangladeshi Central Bank. Recently, Bangladesh Bank revamped a number of refinance facilities to bolster agriculture, MSMEs, and export sectors.

Environmentally benign green output processes have also been promoted to ensure sustainable development in Bangladesh. The idea has been to test the ground to change the real economy for people living at the bottom of the social pyramid. The driving force has been a focus on socially responsible finance for more inclusion, which

Bangladesh made the core of its central banking activity. The outcome has been strong macroeconomic performance as a foundation, a strong financial sector, which allowed until recently, increased reserves, controlled inflation, and accelerated investment creating fiscal space (Rahman, 2022).

A balancing act between innovation and maintaining continuity has been a key factor. It was not easy, but innovation and open discussion with government departments and different stakeholders, including the banks were encouraged . The stakeholders' response was very positive. They came forward with innovative ideas about how to make services more user-friendly and we saw changes in people's mindsets. The bankers started to go beyond compliance culture. They went, at grass-roots level, to help the many. Eminent American economist Gerald Epstein has rightly identified the developmental role of Bangladesh Bank during this period to be 'an agent of sustainable economic development' (Epstein, 2013). He points out the specific endeavors of Bangladesh Bank that provided the necessary macroeconomic launchpad for the country to be- 01) broad-based financial inclusion campaign; 02) promotion of agriculture; 03) credit programs for share-croppers; 04) green credit support; 05) SME credit programs; 06) promotion of women entrepreneurs; 07) industrial policy (especially the cluster approach); and 08) guiding green development. However, these entrepreneurs need not only loans but also fairly medium to long-term capital through start-up funding facilities.

Bangladesh's financial system has been highlighted as a model of sustainable economic development. The country has been a role model for financial inclusion and sustainable economic development for its financial inclusion campaign. A credit guarantee scheme from the Bangladesh Central Bank was taken up, providing extra support for SME finance in the country. The central bank also provides liquidity support to the banks through low-cost refinancing facilities to motivate them to give SMEs including women entrepreneurs more loans. The entrepreneurial farmers are also getting such loans.

School banking in Bangladesh has been another fantastic innovation. Between March 2020 and March 2021, the number of these accounts increased from 2.2 million to 2.6 million, which was an 18% increase. At the same time the amount deposited increased by 37%. All of which means many young people are becoming familiar with banking, and money, at an earlier stage so they are better equipped to create more resilient futures for themselves.

Digitization has been key to promote access to finance and reach the many. Immediately after the global financial crisis, the Central Bank of Bangladesh took initiative to pursue integrated supervision systems, encouraging other banks to go digital. During the pandemic, this digitization worked very well. Know your customer processes have been linked to a national database of the Election Commission using national IDs. Digital financial services like online banking, mobile financial service, and agent banking are greatly benefitting from this digital data base. Between 2015 and 2020, access to finance was significantly and positively impacted by the central bank's drive for digitalization. As a result, within this period of time- number of bank branches per 100 thousand adult citizens increased by 4%, whereas number of registered mobile money agents per 1,000 sq. km. has increased 85% (to over 8 thousand). This in turn has resulted in the people relying more on digital financial solutions. For example, between the said period- number of registered mobile money accounts per one thousand persons have increased by 166% (to 825); and the value of mobile money transactions as share of the country's GDP has increased from over 11% to over 20 % (IMF, 2022).

Bangladesh banks' green drive has been another very interesting innovation. Green financing funds and Bangladesh Central Bank policy will, I believe, reinforce longer-term climate-friendly initiatives. The Bangladesh government is developing this strategic investment framework, called the Mujib Climate Prosperity Plan, to mobilize finance through international cooperation for renewable energy and climate resilience initiatives. The government has earmarked about 8% of its budget for these green initiatives and the central bank has provided further support. The central bank of Bangladesh has also developed a farsighted Sustainable Finance Policy to guide the banks and other financial institutions to support more green initiatives through directed green financing (Rahman, 2022).

The Role of Central Banks Around the World

Beyond Bangladesh, climate change, pandemics and the destruction of nature are common global threats. They should unite us in working towards a common

solution for a 'cleaner, greener and safer' world (Hasina, 2021).

Central banks and banking, in general, should target climate-friendly development. Let me now summarize some learnings that may be useful for all the central banks and the banks all around the world in the light of the Bangladesh experience:

01) **One size does not fit all.** We need to take national and contextual needs into account while pushing for regulatory innovation.

02) **Specific groups and areas can be targeted to promote financial inclusion,** such as share-croppers or women entrepreneurs.

03) **There is a need to focus on more than just controlling inflation.** We need to focus instead on the broader economy and changing the mindsets of bankers and other stakeholders, and this will yield huge results. To answer how some ideas could be :

- A broader expertise and innovation approach, using new tools such as green technology or digital financial services.
- Developmental targeting, enhanced transparency, and accountability of the developmental approach.
- Coordination with the broader policy framework, and an understanding of the policy thrust of government. Central banks and Ministries of Finance must coordinate their activities and work together.
- Directing credit to productive sectors instead of speculative uses.

There is a need for a trade-off between developmental central banking, financial and economic stability. It needs to take more money out of the traditional fields of investment and put it to work at a grass-roots level. And what central banks should do it if sf the world wants inclusive growth for the many and not for a few.

Towards Hope, Confidence, and Pragmatism in an Uncertain World

No doubt, the current global situation remains highly vulnerable. The tightening of monetary policy throughout the world with several consequences including shift of foreign investment from developing countries may not be avoidable. And this calls for remaining both to continue traditional monetary policy as close to market imperatives and at the same time investing in the real economy to augment more supplies of goods and services. Let's not jump. Let's not be adventurous. Let's touch the ground and remain focused on what has been working better for our economy. If need be, we should also be ready to change our course in the middle of the journey depending on the level of the crisis. However, collaboration and partnership between stakeholders should remain our key strategy. This has worked well in the past. This will also work better in the future.

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Universal Pension Scheme: Challenges in Bangladesh

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ABSTRACT

This study aims to identify the challenges of implementing the Universal Pension Scheme (UPS) in Bangladesh. The study has adopted qualitative research methods to reach the aim. Based on the previous experience in the reformation of public financial management and in-depth interviews of the relevant personnel, the study draws the conclusion. There is a little debate on the necessity of the universal pension scheme (UPS) to ensure the social security of the senior citizen of a country. However, the debate lies in the coverage of the scheme, strength to remain unbiased, financing and others. Based on the experience in other countries and relevant personnel in Bangladesh, the study identifies several challenges in the implementation of UPS. The challenges have been grouped into two categories – 1) Governance and institutional challenges and 2) challenges from participants and recipients. Institutional challenges include public management systems, governance, accountability, transparency, public fund management and integration/introduction of digitization. Challenges from participants arise from the diversity of the population, domination of the informal sector, the attitude of the private enterprises and the perception of the potential participants. This study can be helpful to understand the challenges associated with the implementation of UPS. It can be helpful for the implementation agency of UPS, policy analysts, and policy development in Bangladesh and other developing countries.

KEYWORD

Universal Pension Scheme (UPS); governance; implementation; challenges; Bangladesh

Introduction

The Universal Pension Scheme (UPS) is inevitable in a transitional economy. The increased number of ageing populations, unemployment, decreasing family size and individual independence upheld the necessity of the UPS (Collins, Podger & Dong, 2014). The situation in most of the developing countries makes the UPS more relevant (Willmore, 2007; Kidd, 2009; Ranganathan, 2017, Narayana, 2019). Moreover, the recent pandemic, COVID19 shows the necessity of social protection scheme for the citizens, especially for the senior citizens. However, it has been evident that the implementation of UPS faces challenges in the different regimes of the world (Collins, Podger, & Dong, 2014; Freedman & Yanxia, 2016; Boulhol, 2020). It can increase the liabilities than the assets of a country or can exert pressure on the taxpayers (Collins, Podger& Dong, 2014). Therefore, careful consideration is required to develop and implement the UPS in a country. This study is attempted to identify the challenges associated with the implementation of UPS in Bangladesh.

The economy of Bangladesh is in the transition to graduate from low-income countries to middle-income countries. Promising economic performance is evident in various indexes. The country has shown its commitment to achieve Sustainable Development Goals (SDGs) to a significant extent as well. The mixed economic nature of Bangladesh urges the reformation of the public sector as well as social welfare activities for the citizen. It is argued that market logic is embedded in society. The social structure of Bangladesh states that Bangladesh is in a transition in the demography of citizens. The society consists of more than 40% of the aged population who are more than 65 years old. Statistical projection estimates that by 2051, more than 20% of people will be aged more than 60 (BBS, 2015).But, there is no UPS in Bangladesh. At present two schemes are visible in Bangladesh for the senior citizens. One is 'Old Age Allowance (OAA)' introduced in 1998 for the elderly people in Bangladesh. OAA is a means-tested scheme which pays a very small amount to the beneficiaries. Public sector employee receives guaranteed pension at retirement which can be recognized as another scheme in Bangladesh.

Previous studies in Bangladesh focus on the financial framework as well as the estimation and cost of launching the UPS (Rahman et al., 2021; Khatun & Sadat, 2020; Khondokar & Razzaque, 2018). Depending on the internationally accredited model like the World Bank multi-stage pension model, International Labour Organization's (ILO's) Social Protection Floors Costs calculator, ILO Multi-pillar pension model and others, scholars attempted to predict the cost of launching UPS in Bangladesh. However, it seems that there is a scope to investigate the issues of implementation of UPS, including the risks inherited in different pillars of ILO and World Bank framework and governance regarding the UPS. Therefore, this study attempts to unfold the challenges of implementing the UPS in Bangladesh.

Since the independence in 1971, Bangladesh has experienced several reformation initiatives in the public financial management with the association of donor agencies (Rajib et al., 2017; 2019). Some initiatives for reforming the public financial management have been appreciated, though still very far has to go to achieve the target (Hoque et al., 2020). The digitization of existing public sector

employees' pensions is one of them. The study attempts to show the implementation challenges of UPS through the experience of the current projects' challenges as well.

This study is organized as follows. First, previous studies have been reviewed to get the notion of best practices and the potential challenges. Second, the current state of Bangladesh has been introduced. Third, following the previous section, research methods have been fixed. Fourth, empirical data analysis has been conducted. And finally, a conclusion is drawn.

Literature Review

The UPS is introduced in a large number of countries in various forms. The variations of UPS are visible across the world. As per the report of ILO 2017, 186 countries have adopted at least one pension scheme for elderly citizens (ILO 2017). However, as per ILO (2021), only 46.9% of the people of the world are effectively covered by at least one social benefits scheme. Though average public expenditure on social protection is 12.9% of GDP, Low-income countries are spending only 1.1%, Lower-middle income countries are spending 2.5%, Upper-middle income countries are spending 8%, where High-income countries are spending 16.4% of GDP (ILO, 2021). Therefore, an effective social protection scheme, as well as effective UPS is expected in the developing countries.

Though there are various models, in general, the pension scheme can be categorized into two groups. They are – 1) defined contribution (DC) pension scheme and 2) defined benefit (DB) Scheme.

Various models of UPS have received attention and have been adopted as the framework of UPS in different countries. Two well-known models are –World Bank multi-pillar pension model (three pillars and five pillars) and ILO's multi-pillar pension model (Rahman et al., 2021).

Based on four principles – adequacy, affordability, robustness and sustainability, The World Bank introduces a multi-pillar (three-pillar) pension model in 1994 (WB, 1994). The first pillar of the World Bank model is proposed to manage by the government to alleviate the poverty of the country. The second pillar is proposed to manage by the private sector and will run from the contribution of both the employee and employer. The third pillar is a voluntary scheme that aims to establish a bridge between the income gaps of retirees. Later the model is transformed into a five-pillar model. The new model introduces a 'zero-pillar' which is non-contributory in nature. The five-pillar model introduces two mandatory pillars.

The ILO introduces a multi-pillar pension model in 1980 based on several principles, like universality, social solidarity, adequacy and predictability of the benefits, the responsibility of the state, non-discrimination, financial and economic sustainability, transparent management and stakeholder involvement (ILO, 2018). These pillars are designed to serve the different objectives of a national pension system considering the diverse socio-economic condition of the population.

The floor pillar (pillar zero) is aimed to ensure the least income security for all senior citizens. Therefore, this pillar integrates a non-contributory pension scheme and proposes to finance from the government revenue. As per the ILO report 2017, at least two-thirds of the countries have adopted this pillar through the means-tested schemes.

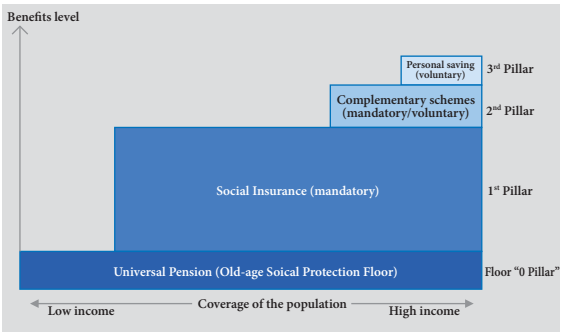


Figure: 1. ILO Multi pillar pension model (Source: ILO 2018, page 3)

The first pillar is aimed to cover the employed population through the contribution both from the employee and employer. This stage is mandatory in the pension scheme and it follows the defined benefit (DB) approach. The second pillar is aimed to complement the previous pillars (pillar zero and one). This pillar is managed privately and financed through the employers' contribution. Like the second pillar, the third pillar is aimed to complement the previous pillars. This pillar is for those who are capable to make additional personal savings. Under the government regulation, the private pension administration can manage this pillar.

Through these frameworks, one can assess the cost required to implement the UPS. However, not only the technical aspects but also the policy deployment and the administrative reforms are associated with the pension systems reforms (Collins, Podger and Dong, 2014). Many issues like interests, institutions, ideas and specificity can determine the success of pension scheme deployment (Collins, Podger and Dong, 2014). Both in the developed (e.g., Valkonen, (2020) and developing countries (e.g., Kidd, 2009; Cai & Cheng, 2014; Long & Pfau, 2009; Nutsubidze and Nutsubidze, 2017; Narayana, 2019), the challenges of implementing the social protection scheme has been investigated. In developing countries, the problem of structuring the framework is found beyond the model of ILO's and the World Bank (Bali, 2014; Singh et al., 2015).

In China, the challenges of demographic transition have been identified as a critical factor in the framework of pension schemes (Chai & Cheng, 2014). Therefore, a hybrid system (between DC and DB) has been proposed in China. Conditional defined benefit (DB) and notional defined-contribution pension systems have been discussed in the context of China (Williamson & Shen, 2004). Moreover, it has been mentioned that the lack of integrated institutional efforts (Freedman & Yanxia, 2016).

In Sub-Saharan African countries, too much generalization has been seen as a problem for an effective pension scheme for the senior citizens. Lack of institutional capacity has been identified as a problem in implementing the effective social security scheme in African countries as well (Thovoethin & Ewalefoh, 2018). Therefore, Thovoethin & Ewalefoh (2018) argue for the social context and existing institutions' compatible social protection schemes for the senior citizen in the Sub-Saharan African countries. They urged for a pluralistic social scheme combining both the contributory and non-contributory approaches considering the context and through various mechanisms, e.g., tax incentives. In African countries, lack of interest among the citizen has been found as a major challenge to implement the UPS as well.

Considering the situation in India, four critical areas have been identified for an effective pension scheme (Narayana, 2019). Narayana (2019) identified adjustment of inflation in the expenditure, economic growth, continuous correction of inclusion and exclusion of errors are the major challenges of the pension scheme in India. Therefore, in literature, it is found that challenges arise from the institutional settings as well as from the potential participants/recipients.

State in Bangladesh

Bangladesh is a developing country which is expected to graduate to middle-income countries by 2026[1]. People of diverse religions are living in the country. Several indigenous communities are living there as well both on plain land and hill track. Therefore, the country is experiencing diverse cultural richness. As per the information of 2020, one of the highest contributions to the Gross Domestic Product (GDP) is coming from the agricultural sector (12.92%), following the industry (29.54%) sector. About 22 million people are involved in farming. Because of fertile land which is blessed by more than 700 rivers, Bangladesh is producing a well amount of crops. However, farmers are struggling with the natural calamity simultaneously. A large number of people have no land or lost land because of river erosion. In the industry sector, more than 5 million people are working where major employees are earning a very small amount of salary compared to other countries.

Bangladesh promised to achieve the Sustainable Development Goals (SDGs) by 2030 for sustainable development and United Nations Development systems reform (UNDS). The UPS is aligned with the at least five SDGs targets (SDGs 1.3, 3.8, 5.4, 8.5 and 10.4). Therefore, to ensure the achievement of SDGs, the effective implementation of UPS is required.

The country is running the social safety net programmes (SSNPS) since its independence in 1971. Since then, 4 major programmes are visible. They are 1) Programmes on employment generation, 2) Programmes to adapt to the natural disasters and other shocks, 3) Incentives for children's education and 4) incentives for health (Barkat-e-Khuda, 2011). In 2015, National Social Security Strategy (NSSS) has been approved in Bangladesh. The NSSS aimed to develop an inclusive scheme for all the deserving citizens of the country addressing poverty prevention, mitigating the inequality, ensuring human development, employment and economic growth (NSSS, 2015). The concept of NSSS was initiated in 2010 and

1. Because of COVID19, the timeline is set to 2026 instead of 2024.

through the subsequent processes, it was approved in 2015.

In NSSS (2015), several ambitious targets are set. Social protection schemes have been proposed considering the consolidating life cycle systems. Therefore, the proposal targeted the schemes for the children, working groups, elderly citizens and people with disabilities.

The initiative of establishing a comprehensive pension system for the elderly was seen in NSSS 2015 as well. It proposed a pension scheme for senior citizens comprised of three tiers. The first tier was proposed to provide the benefit to the senior citizen belonging to the poor and vulnerable group with a minimum income from the public expenditure of the government. The second tier was proposed to provide benefits for the formal sector employees through a contributory pension scheme. The third tier was proposed to provide discretionary benefits to the elderly citizen through the management of the private sector. Though the proposal has been introduced in 2015, little or no achievement has been seen till now.

Recently, the government of Bangladesh has argued for the implementation of UPS. This study is aimed to identify the challenges to implement the UPS based on the interviews with a number of relevant personnel.

Research Methods

To conduct this study several papers have been reviewed to understand the UPS practices in different countries of the world. The proposed framework of the international institutions like The World Bank and the International Labour Organization (ILO) has been reviewed. Apart from this, we have taken 15 in-depth interviews with the relevant personnel to understand the challenges of implementing the UPS in Bangladesh. Most of the interviewees are involved in the recent reformation initiatives of public sector financial management.

The interview duration was 30 minutes to 2 hours. The pattern of the unstructured interview is followed during the interview (see Mir & Rahaman, 2005). In the appendix, interview details are disclosed. During the interview we allow the interviewees to tell their observation freely to get diverse opinions regarding the challenges and implementation of the UPS. However, we highlighted a few issues to focus rarely, Like –

- Socio-Economic Condition of Bangladesh
- Way of Implementation of the UPS
- Sustainability of the Scheme

Insights from the data have been synthesized with the existing literature review. To present the analysis, we followed the approach of narrative analysis (see De Loo, Cooper &Manochin, 2015), a tool of qualitative research.

Empirical Analysis

Several researches have addressed the issues of the framework of the UPS in Bangladesh and have assessed the potential financial costs (e.g., Khatun & Sadat, 2020; Khondker & Razzaque, 2018; Rahman et al. 2021). Based on ILO's social protection floors cost, Khatun & Sadat (2020) and Khondker & Razzaque (2018) estimated the cost of the non-contributory pension scheme in Bangladesh. Rahman et al (2021) followed a comprehensive way to estimate the cost of UPS in Bangladesh based on ILO's multi-pillar pension scheme. To implement the UPS, we interviewed a number of relevant personnel to know the challenges. Two types of challenges have been identified from the interviews. They are - 1) Participants or recipients and 2) Institutional including the governance issues.

Challenges related to Participants/recipients

The interviewees have identified challenges from the point of participants during the interview. A number of challenges can be highlighted here.

An academician stated that

Previous experience shows that there is a lack of the proper registration process and authentic registered beneficiaries in various schemes in Bangladesh. To implement the UPS properly, we have to focus on the issues of confirmation of registered beneficiaries.

Experience of other developing countries (e.g., India and Sub-Saharan African countries) state that lack of education, lower level of income, and preference for immediate cash flows may refrain the citizen from

being registered in the national UPS. Therefore, the authorities have to work on awareness building as well. With time the registration may be made mandatory for the citizen though, primarily, optional framework is accepted worldwide.

The issues of confirmation of registration can be aligned with the informal sector of the country as well. More than 80 per cent of the workforce in Bangladesh is involved in the informal sector. They receive their wages or remuneration on a cash basis. To some extent, they expend their full income on daily basic needs. A policy analyst stated that –

…it will be challenging to include the individuals who are not working in any formal in-stitutions.. the fact is they are large in number.

The challenges are inherent in convincing them to sacrifice a portion of their income to the saving for the UPS fund. The UPS is bound to identify them individually rather than based on where they are working.

Apart from the informal sector, challenges have been seen in the participation of the non-government sector. One official from the Ministry of Finance (MoF) stated that –

The former finance minister started the initiatives in 2014 to introduce the pension scheme in the private sector. He tried to include at least some private enterprises to start the scheme. Unfortunately, we have not seen the interest of the private sector in this aspect since then..

Study shows that most enterprises in the private sector are not interested and are not contributing to their employee's welfare funds or specific contributory funds. They allow paying on a lump sum basis only. Private sector companies may show less interest, but it should be kept in mind that private organizations enjoy various financial and tax benefits from the government. There-fore, to ensure social responsibility, they should be involved in this initiative.

Finally, it has been mentioned that mental changes in mass people on savings are required. Conceptual change is required to incorporate mass people who will feel that they need social security, they need financial security, and they should save for their safety. This mental change among the root level people will be a big challenge for implementing this UPS. In other developing countries, policy suggestion has been already seen in this case (Bao, et al., 2021).To implement the UPS effectively, the policy maker have to understand the population diversity in the country as well.

One policy analyzer stated that -

In Bangladesh, the demographical scenario has to be considered. Our expected average life is higher now than in the previous years. Females expected average life is higher than males. But, a tiny portion of the female is employed compared to man. So, to ensure gender equality in social protection schemes we have to consider this scenario regarding the contributed and non-contributed schemes.

He added that –

Some marginal people have no fixed address as well. Because of river erosion, they lost the land. If we fail to address them in the scheme, the objective of UPS, as well as the aim of attaining the SDGs, will be questionable.

A number of farmers lost the land and are losing the land every year because of natural calamities (e.g., floods, land loss from the river erosion and others). The policy developer should consider these people and ways of incorporating them into the UPS as well. Unifying the social protection scheme with the developed countries will not be fruitful in developing countries (Leisering, 2010). The contexts and diversities should be considered in implementing the UPS. The current institutions of the developing countries and the capabilities of those institutions considering the social context can enhance the benefit in the society. Therefore, social protection policy should be developed that is consistent with the current situation and institutions of the country.

Challenges related to Institutional Arrangements and governance

Since 1990, we have seen the reformation of the public sector including the public financial issues across the world. The issues of poverty reduction, quality life and sustainability have been triggered in the developing countries with the association of donors and international financial institutions (IFIs) since then as well. However, the capabilities of public

administration in developing countries and policy implementation have been highlighted in scholarly writings simultaneously (see Thomas & Grindle, 1990; Thovoethin & Ewalefoh, 2018).The interviewer of this study focused on several issues of institutional arrangements and governance as the challenging issues as well.

One official of Office of the Comptroller and Auditor General (OCAG) stated that –

People have seen bureaucratic complexity in the retirees' pension already. We have to agree that still there are some problems in the distribution of pensions, despite of many initiatives have taken including automation. I think we have to gain the trust; we have to work on the management process of UPS.

Building trust in the Governmental management and governance process is very challenging. It seems that people are not comfortable sacrificing their money from their current income and de-ploying the fund under government management. People have witnessed the bureaucratic com-plication of pension even after government employees' retirement. Therefore, it is very natural that mass people may and will be reluctant to the pension schemes which are going to operate under the same bureaucratic process. Special consideration regarding the new public management is required in this aspect.

The lack of trust among the citizen derives from the issues of the resources distribution process in past as well. Bangladesh has experienced many programs to distribute resources among the citi-zen (e.g., gift to the poor people to celebrate an occasion, Vulnerable Group Feeding (VGF) cards and others) where accountability has been questioned.

An official of Controller General of Accounts (CGA) stated that -

In past, we have seen many complaints have been highlighted in the media on the different programs of government. The complaint includes the unidentified or ineligible person in the list of relief, irregularities in the distribution of relief, corruption at the local level and others. To make the UPS an attractive scheme, we have to work on these issues.

The mentioned types of issues are not unexpected in developing countries. To pursue the case of the unidentified or ineligible person on the list, continuous monitoring and correction have been advocated in India (see Narayana, 2019). The evidence of poor governance and inefficiency of resource distribution will make it very challenging for the total process to ensure good govern-ance and ensuring accountability in UPS. The evidence has been seen in the previous social safety net programs of the government. It has been reported that many people from marginal family have been excluded from the schemes whereas ineligible people have been enlisted in the schemes because of corruption at the local level.

Apart from the accountability and good governance, proper management of the fund has been highlighted by the interviewees. One official of the World Bank stated that –

From the very beginning, we have to focus on efficient fund management. Distributing the income and service benefits from the UPS without hassle to the end-user indicates the suc-cess of this UPS fund. Fortunately, Bangladesh has started the digitization of public finan-cial management which will be beneficial to the UPS. However, the focus should be given to the profitable and efficient fund management of UPS.

Many profitable ventures are successfully experienced with banks in developed countries. Unfor-tunately, there are questions about the governance of Banks in Bangladesh and the capability of banks as well (Uddin et al., 2018). To ensure the proper fund management of UPS, the capability of associate institutions including the bank has to be ensured. Fund management including the investment decision should be profitable as well as beneficial to the people.

It should be reminded that Bangladesh is experiencing digitization in the reformation of public financial management (see Rajib et al. 2017). However, there are some challenges as well (Hoque et al., 2020).

One official related to current digitization project stated that -

..we have done a lot. But still many problems are there. For example; government employ-ees' pension are now distributed through digital platforms. However, some pre-pension works (e.g., approval of

pension) are executed manually till now, which is cumbersome and creating hassles to the pension receiver.

In this world of digitization, the operational procedure of UPS must be in the digital platform. Otherwise, end service benefit holders will suffer from more manual fund releasing procedures. Historically, the environment of Bangladesh's Governmental procedure and management is not supportive to digital platforms and automation. Bureaucratic complexity is evident in many ad-ministrative tasks (see Zafarullah & Huque, 2001). So, it will be very difficult to manage the UPS Fund in digital form.

However, automation along with the transparency in operation have been argued by the inter-viewee. One official staff from OCAG stated that –

… we appreciate the current program of digitization. Along with the digitization, we have to ensure the accountability of funds and transparency regarding the fund accumulation, oper-ational expenditure and distribution. People will prefer to see the use of their savings.

Accountability and transparency have been argued as the premise of public money management always. Investment of the fund, earnings from the fund and distribution to the recipients should be transparent and information should be accessible to all without any requirements. Though there are some initiatives have been in Bangladesh, many problems are still there (see Hoque et al., 2020). Accountability and responsibility should be defined clearly along with continuous monitoring. Automation can play an important role in this context.

Along with the digitization, integration among the reformation initiatives has been argued by the interviewees. One policy analyst stated that –

.. The current reformation status in government organizations is appreciable. But, we have to focus on the integration among the organizations and reformations. The UPS should be compatible with these reformations as well.

In the UPS scheme, diverse organizations will be pooled. Therefore, the diverse management process should be understood in that case and implement the UPS carefully. In other developing countries, integration of institutions has been identified as the challenges for the successful implementation of UPS (Freedman & Yanxia, 2016). Therefore, the pilot study should be conducted carefully as it has been mentioned earlier. In recent studies, pilot study has been specified more (e.g., Zhu & Zhao, 2021). Zhu and Zhao (2021) argue more on new patterns of experiment rather than hierarchical experimentations for the case of pension schemes.

Conclusions

Bangladesh is a developing country, whose economy is in a transition phase. In many indexes, it has been shown its promise and potentiality. Like other transitional economies, the country is facing new challenges e.g., increased number of senior citizens, individual families, employment crisis, change in average life expectancy and others. To ensure the quality life of the population, the role of the social protection scheme is well accepted, especially for the senior citizen.

Fortunately, the government of Bangladesh has taken the initiative to implement the UPS. Some proposals relevant to UPS and assessment have been executed by the international institutions and scholars already. This paper attempts to identify challenges to implement the UPS based on the interviews with the relevant personnel and challenges in the developing world.

The study finds that challenges arise from two areas. In institutional areas challenges lie in the management process, public fund management, accountability, transparency and integration with the existing reformation. In participants and recipients, challenges lie in the diversity of the population, mentality, interest and motivation. Though the pilot study is well accepted to implement the policy, the context and diversity of the study should be considered carefully, especially at the floor level and the first pillar of the model of World Bank and ILO. Through the interviews, it is clear that the context of the country should be considered carefully, even at the marginal level the context can vary in a country (e.g., heavy river erosion in some areas of Bangladesh). The policymaker, as well as the implementation agency, should consider the issues carefully.

Based on our findings, future research can undertake both to address the participants & recipients and

institutional arrangements & governance. Future research can investigate the governance issues of implementing the UPS effectively. Various accepted theoretical lenses (e.g., institutional theory) can be applied to understand the scenario and take corrective action as well. Future research can deals with the motivational process for including the mass people. The accepted theoretical lens can be applied to understand the scenario as well (e.g., theory of planned behavior).

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Appendix

Interviewees' profile

SL	Interviewee Designation	Number of Interviewee	Reason of taking interview
1	Ministry of Finance	2	Deals with public money
2	International Financial Institution	4	Deals with the reformation of public financial management including social protection scheme
3	Controller General of Accounts (CGA)	2	Deals with the accounts of public money
4	Academician	1	Working in the area of public policy
5	Policy Analyzer	2	Working in the area of public policy
6	Staff of Financial Reformation Committee	3	Deals with the reformation of public financial management
7	Office of the Comptroller and Auditor General (OCAG)	1	Deals with the transparency of public money
	Total	**15**	

Managing the Current Economic Headwinds in Bangladesh: Implications for the Private Sector and Way Forward

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The Bangladesh Economy is Facing Challenges from Multiple Fronts

The rise in inflation and dearth in US dollar is making it difficult for people and businesses alike to stay afloat. The recent irregularity in a renowned bank has also added to current climate of gloom in the Bangladesh economy. The article will investigate the impact of the current economic challenges on the private sector. The global downturn and its context will add light to the unique situation faced by the world in the second global downturn in 15 years. Bangladesh, which is a net importing country, is strained by high price of commodities including a dollar crisis which has forced the country to ask for international support. The impact of these growing pains on the private sector are accessed and policy recommendations are provided on the best way forward for the Bangladesh economy.

IMF's Latest Projection on the Global Economy

As the storm clouds gather, policymakers around the world need to keep a steady hand. The global economy is facing a three-pronged challenge: the economic slowdown of China, the ramifications from the Russian invasion of Ukraine and rising inflation pressures. IMF forecasts have projected global growth to remain unchanged at 3.2 percent and to slow to 2.7 percent in 2023. The forecast has fallen by 0.2 percentage points lower than the July forecast. There is a 25 percent probability, the IMF reports that the figure could fall below 2 percent. The severe energy crisis in Europe is continuing to sharply increase costs of living and hampering economic activity. The numbers speak to the depth of the crisis. Energy prices in Europe have increased by more than four times since 2021 as Russia has cut its supply to less than 20 percent of 2021 figures. Globally, food prices have shot up and have caused increasing hardships for low-income households, more so in low-income countries.

Why this Economic Crisis is Different from the One in 2008

This economic downturn is unlike the financial crisis in 2008. The cost-of-living crisis confronting the world is now causing a shift in global economic

policy making. Central Bankers around the world are advocating to raise interest rates further because inflation remains far too high and is likely to stay for an extended period. The U.S and Euro zone have been reduced to raise interest rates so that it becomes more expensive to buy a car or a new mortgage to curb the inflation rate. However, the tools that are used to curb inflation also stalls economic growth. Central Banks are therefore at a dilemma, increasing interest rates would lead to further fall in growth while doing nothing will lead to ever more rising prices of goods. Another paradox which makes this economic downturn unique is that the labour market is quite strong, particularly in the US where unemployment is the lowest it has been in half a century, but companies are struggling to hire workers. **Perhaps, the most striking characteristic is that there is no shortage of money as was the case in 2008.** Banks and capital markets have adequate reserves, but they do not have economic activity to spend it on. The fact of the matter is that there is not a shortage of money globally but a shortage of everything else. The pandemic brought to the fore, the fragility of global supply chains. Factories from Asia to Europe and North America halted production sending the global economy into a freefall. As countries emerged from lockdown, demand for goods and services returned faster than supply. Swelling orders have outstripped availability. Businesses across economies have struggled to hire workers. Food and energy prices are on the rise. Adding to this, China, the world's manufacturing powerhouse has closed shop as lockdowns continue to wreak havoc. The Zero Covid policy aims to isolate individual cases of the virus and strict implementation means regular shutdowns making it difficult for businesses and manufacturing. Additionally, the shortage of one commodity has caused the shortage of another with the lack of supply of semi-conductors have halted car manufacturing across the world. **Adding to the supply chain crisis, Russia's invasion of Ukraine has increased energy prices.** Russia has severely cut its energy supply to Europe. As a result, the Europe needs to reduce energy demand by 10 percent. Ukraine is one the biggest agricultural exporters of the world. Ever since the Russian invasion food prices have been on the rise. For the global economy, the supply shortages and the drastic rise in energy and food prices makes for dire straits. Global inflations are at a high as demand has remained the same in commodity, labour, energy, and food markets while supply has drastically decreased leading to a generalized inflation across all markets. **It is now evident that the large economies of the world are facing a storm, but one area of the world is bucking the trend.** For the first time since 1990, other Asian countries are set to outperform China economically. In this region, growth is still outpacing inflation. ASEAN and India have benefitted from China's Zero Covid policy as the alternate hub of production the near geographic vicinity.

Current Economic Challenges Facing Bangladesh

Closer to home, Bangladesh has been manoeuvring through the headwinds of the current economic challenges. The country is facing pressure from dwindling foreign currency reserves, high import costs and an energy crisis as the economy is dependent on the imports of Liquified Natural Gas (LNG). Bangladesh's economic challenges are on multiple fronts, inflation, weakening taka and energy crisis. These three factors are creating increasing pressures on the private sector. **Bangladesh currency has long remained overvalued as indicated by the real effective exchange rate.** Such excessively managed exchange rate do tend to become volatile when pressure mounts due to broader economic factors. And Bangladesh and its taka also did not have any respite. Please add a couple of lines on resultant challenges due to ineffective response to manage taka's value and stabilize e.g., fragmented and multiple devaluation, multiple dollar ates, difference with kerb market etc.

Drastic Fall in Letter of Credit (LC)

The dollar crisis has made it difficult for banks to make payment of import Letter of Credits (LCs). Banks are also refraining from opening LCs, save for essential products. This has led to delays in the

implementation of projects due to government agencies' lack of capacity in project implementation. Government contractors are also finding it difficult to open LCs. As many banks are failing to make LC payments, those are suffering from reputation crisis abroad. Therefore, foreign banks have started to limit credit line for Bangladesh. Moreover, it has also been the case that some banks are having to turn away food importers leading to a surge in food prices. Bangladesh Bank data shows us that limits have been put on imports as reserves have been falling amid escalated import bills. Reserves stood at US$35.73 billion on November 2, down more than 23 per cent at US$46.48 billion, just the previous year. **The private sector has been hard hit as the commercial banks have imposed strict restrictions on opening all types of LCs, due to the multifaceted initiatives by the central bank amid the dollar crisis.** Local manufacturers are on the brink of a raw material crisis as banks are turning down applications submitted by non-exporting importers for opening LCs due to the shortage of dollars. This can be seen by the Bangladesh Bank reports which show that number of LCs for importing capital machinery decreased by 66 per cent in the period stretching from July to September. The office of the registrar of joint stock companies also indicated a similar picture in terms of investment reporting that 2,815 new companies, partnership firms, and trade organisations were registered between July and September, a fall of about 20 per cent compared to the same period in the last fiscal.

Rapid rise in the Price of Goods

The Asian Development Bank projected that inflation in Bangladesh would average 6.7 percent this fiscal year, up from 6.2 percent in fiscal 2021-22. This reflects strong domestic demand and higher global oil, gas and commodity prices resulting from supply disruptions caused by the Russian invasion of Ukraine. High import costs amid the rising dollar price have led to increased financing costs. This has contributed to increase in private sector credit growth. The interest rate of loans in banks is very low. Customers are getting loans easily due to which the amount of credit is increasing. In addition, prices per dollar rose by about 22 percent in a year which increased debt due to higher cost of consumption. Rising global commodity prices, increases in domestic-administered prices of all types of fuel and an expected upward adjustment in domestic power tariffs are the main factors that will stoke inflation in the coming months in Bangladesh.

Imports of some major food commodities, wheat, and sugar, have slowed over the last few months when the global food price index fell steadily, meaning that consumers in Bangladesh missed out on the benefit expected from falling prices. The period coincides with the restrictions imposed by the central bank on opening letters of credit (LC) after monthly imports almost reached US$9 billion amid a dwindling reserve and falling earnings from exports and remittance. Though the measures were taken to reduce non-essential imports to lessen pressure on foreign currency reserves, opening LCs for essential food items also slowed as banks said they did not have enough dollars in hand.

Weakening Taka

In the financial year 2022, the expenditure on imports increased by 36 percent, compared to 20 percent the previous financial year. The high import cost is due in part to the increased demand for imported goods and in part to the higher import prices on the global market. During 2021-22, the import-price index increased by 5.06 percent, while the export-price index increased by 3.23 percent. The current account balance as well as the terms of trade of Bangladesh have been hurt. In the financial year 2022, the current account balance reported a deficit of US$18.70 billion compared to the previous year's deficit of US$4.58 billion. **The unusual hike in the dollar exchange rate and high prices of raw materials and machineries are hurting the profit margins of well-established manufacturing firms in the country.** The price of motorbikes has increased by 6 to 10 percent in the local market. The reconditioned car market is also having difficulty in opening LCs. Moreover, The Bangladesh Bank has also asked banks to inform it about the opening of

LCs whose value is US$3 million and above so that the import of non-essential items can be checked. The costs of imports and the price of passenger cars increased as the National Board of Revenue hiked the supplementary duty for vehicles with engine capacities of more than 2,000 cc. The eventual result will be that only the big importers will remain in the market leading to a lack of level playing field which will also affect the market and lead to a loss of jobs. **The export market is also in a spot of bother.** The commodity exports decreased by 6.25 per cent and 7.85 per cent respectively in September and October, due to the fall in purchase orders. RMG exports which make up over 80 percent of the country's exports have also seen setbacks as overseas purchase orders are being deferred, in addition to a decline in new orders.

Energy Crisis

The deteriorating electrical supply has caused a major decline in financial transactions and output, as well as a sharp spike in production and operating expenses. The manufacturing industries, including ceramic, steel, textile, and cement, have been under extreme strains as they had to cut production up to 30-50 per cent due to a crunch in gas and electricity supply. Daily gas outages have led to 50 percent drop in output in some factories which produce steel. Some have been requested to stay shut for once a week from the Power Division, often suspending production for a few hours a day, owing to the energy crisis. Other small and medium factories are also going through a similar experience. **The consumption of furnace oil rose as an alternative due to the low pressure of gas.** The production costs, overall, jumped by 15-20 per cent. Production has dipped by 20-30 percent in the ceramic industry. Some 90 per cent of factories in the textile industry are struggling due to the gas crisis. Around 60 percent of the industry's production capacity is lying unused due to the daily closure. The dyeing and washing plants need to be operational for 24 hours but due to the load-shedding the production in these plants is severely disrupted. Depending on the size of the factory, an additional cost of BDT3-4 crore is being incurred per month.

Global Efforts to Tackle the Current Crisis

Germany announced several relief packages to cushion the blow of the current economic crisis. A 65 billion euros inflation relief package was announced where one of the headline measures was one-off 300-euro payment to millions of vulnerable pensioners and a plan to skim off energy firms' windfall profits. Previous relief packages included reduction in the tax on petrol and a popular heavily subsidised public transport ticket. The government will also target students with a smaller one-time transfer of 200 euros, and a heating cost payment for people receiving housing benefits. Germany also mobilised 200 billion euros of economic shield to field the energy crisis. As part of the plan, a given amount of electricity for consumers and companies will be subsidised, a measure will be implemented to limit the impacts of high gas prices, and the value-added tax rate for gas and district heating will remain at 7% until the spring of 2024. **The Federal Government of India announced an excise tax cut of Rs 8 per litre on petrol and Rs 6 per litre on diesel.** The government will bear a shortfall of Rs 1 lakh crore due to the excise duty cut on petrol and diesel. The government also reduced the import duty on key raw materials and inputs for the steel and plastic industry. It has levied export duty on some steel products and raised it on iron ore and concentrates and with the import duty cut, the price of steel will come down. During the current and next financial year, the government has permitted duty-free imports of 20 lakh tonnes of crude soyabean and crude sunflower oil. India has also put a ban on wheat exports to maintain food security and cool prices.

Way Forward

The Bangladesh government needs to undertake multiple reforms to calm the current storm and to position the country so that such a crisis does not occur again in the country's future. Given, the depth of the current crisis, prudent policy making can solve multiple problems that are plaguing the current economy of Bangladesh. **NPLs have been**

recurring ache for the financial sector of Bangladesh. A few proposed ways this can be remedied are: Financial institutions need to strengthen lending discipline and streamline the recovery process to ensure that NPLs do not pile up; A revised bankruptcy act should set timebound procedures to expedite the resolution of cases for settlement; Fair pricing of collaterals through competent accounting firms with international best practices can mitigate loan default risks; The number of state-owned commercial banks can be reduced through consolidation, merger, or divestment; Setting up a public asset management company could be considered to expedite the NPL resolution process. **The government should do away with subsidies from some sectors, such as capacity charges to quick rental power plants, while prioritising subsidies in others, such as agriculture.** The financial sector is in dire need of reforms particularly with the high rate of non-performing loans (NPLs). Additionally, policy effort should be put towards increasing the tax base. The current crisis could have been averted if we had a tax-GDP ratio around 15%. Currently, Bangladesh has one of the lowest tax-GDP ratios among all economies. **Inflation has risen to 9 percent in the past two months according to the official sources.** Two main instruments to contain inflation are to raise interest rates and reduce government deficit. Hence, a synergy between monetary and fiscal policy is required. Real interest rates for lending are now negative, which means that the money is free. This leads to a situation where the demand for loans is high. The interest rate needs to be increased into positive territory to ensure that investment declines. Interest rate needs to be increased even more to have an impact on private sector investment for banks to cover the cost of lending. The interest rates on national saving instruments should be raised and sales should be increased. Additionally, the government should make significant cuts to expenditure to control inflation. However, the social security programmes should not be cut, otherwise poverty rates will increase. **Dozens of power plants run with an energy efficiency of less than 30%, meaning they burn too much fuel and produce too little electricity, putting pressure on import-dependent fuel supplies.** Power plants with low energy efficiency and low plant factor should be shut down. The high price of grid electricity is increasing the cost of producing industrial goods. A clear transmission, distribution, and cost-effective billing policies are much needed to stop captive fuel inefficiency. **The government should rein in illicit capital outflow caused by under-invoicing and over-invoicing at both the import and export stages.** Great efforts should be taken by the National Board of Revenue (NBR) to increase the tax base of the economy. The tax-GDP ratio of Bangladesh is a measly 7.7 percent, as per 2021 figures, one of the lowest in the world. The government should look to increase its revenue base as well as cutting its expenditure. Other reforms include improving domestic resource mobilisation, deepening the financial market, and enhancing competitiveness to promote the creation of productive jobs in the private sector. Interest rate and exchange rate flexibility is very important given the current rate of depletion foreign reserves. The Bangladesh Bank should work to minimise the spread rate between the lending and deposit rates as it is often very high. **A global economy without the U.S. dollar—or some unlikely alternative—as the currency lingua franca also would be a global economy in which large, persistent trade and savings imbalances are impossible.** This is probably a good thing for the global economy overall, but with so many major economies locked into structural domestic demand deficiencies, any policy that forces an elimination or sharp reduction of global trade imbalances also would force deep institutional changes in the global economy—changes which also would likely be politically disruptive for many countries. This is especially the case for countries whose economies have grown around persistent trade surpluses. **For the long term, it is important to recognize proper exchange rate management as economic management strategy.** The current exchange rate volatility is detrimental for business and for the individuals as the foreign exchange market has major impact on inflation. Several steps can be taken to stabilize the foreign exchange market such as reducing the Export Retention Quota (ERQ) to 5-10 percent of repatriated proceeds for the exporters for

the next six months. They need to repatriate the maximum amount possible other than back-to-back import payments for the next six months. Bangladesh taka should be devalued closer to the interbank rate in order to cool the market down and restore stability. **There has been much talk about giving up the US dollar for the Yuan as the currency for trade.** This would be very difficult given the high demand of dollar as a store of value and would require major economic adjustments, albeit it would solve some short-term challenges plaguing economies in this point in time. A global economy without the U.S. dollar—or some unlikely alternative—as the currency lingua franca also would be a global economy in which large, persistent trade and savings imbalances are impossible. This is probably a good thing for the global economy overall, but with so many major economies locked into structural domestic demand deficiencies, any policy that forces an elimination or sharp reduction of global trade imbalances also would force deep institutional changes in the global economy—changes which also would likely be politically disruptive for many countries. This is especially the case for countries whose economies have grown around persistent trade surpluses. Bangladesh does not have enough Yuan inflow as exports to China are only USD 1 billion a year. Therefore, it would not be possible to move to an exchange rate system which hedges on another currency other than the US dollar. **Remittances inflow had been stifled through the banking channel even after the incentives provided to the remitters such interest payments on the remittance inflow.** Hundi is seeming more attractive to remitters as it offers higher rates compared to the formal banking channel. Improvement of the remittance flow and monitoring is crucial as a large proportion of the forex reserve is dependents on this. Bangladesh must scale up its trading capacity to operate in the international commodities market. The Country should gradually establish links with the future commodities market to ensure a long-term supply contract with global suppliers, including energy. All the while, foreign reserves should be used more sensibly given the current situation.

Alt man's Z score in Predicting Business Success - A Study on 5 Bangladesh PCBs

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ABSTRACT

Commercial banks in Bangladesh play a vital role in our economic advancement. The Objectives of the study are to measure the financial solvency of the sample banks compared to Altman's Z score. The study follows mainly secondary data for testing the hypotheses. Findings are that sample banks have variation in Z score indicating their liquidity, long term solvency, earning capacity & business growth etc. The interrelationship of the variables is also different among the sample banks. Management authorities need to control the non performing loan, cost of funds, effective project appraisal and measuring the credit worthiness of the clients before sanctioning the advances. This requires prudent use of financial planning & control mechanism based on Basel 1, 2 & 3 considering the market forces in global challenges.

Introduction

Business failures have been natural phenomena in the world with firms entering and existing as a function of overall business activity and expectations (Altman & Loris, 1976). Nevertheless, Prediction of business failure is one of the challenging tasks for every business organization in the world (Hossain& Ali 2014). Banking sector is the lifeblood of the economy of a country. The financial crisis of banking sector would lead to generate economic crises in the country as the banking sector of a country is related with other sectors of the economy (Demigue and Detraigaiache-1997). Volume of non-performing loan (NPL) amounted to Tk.107.6 billion in 2010 as against Tk.428.50 billion of State-Owned Commercial Banks. In case of PCBs, (Private Commercial Banks) it was Tk.64.3 billion in 2010 as against Tk.389.8 billion in 2018. It is observed that NPL has pressure on liquidity crises, high cost of fund and low productivity to name a few only.

Statement of the Problem

Recently Bangladesh bank has taken various initiatives for maintaining good stability in financial system of Bangladesh. As per BRPD circular No.03 date 21-4-2019 any loan remaining due for a period of a month or beyond but less than 9 months, the whole loan will be taken as sub-standard loan category. Loan amount remaining due for a period of 9 months or beyond but less than 12 months that will be taken in doubtful category. Loan remaining due for more than 12 months is considered in bad category loan. As per BRPD circular No.4, 16-5-2019, a borrower is taken as good borrower if the loan status remains unclassified during last 12 months. As per BRPD circular No. 08-12-2019, banks & financial institutions are to follow the 9% lending rates.

Objectives of the Study

1. To analyze the major and Tools techniques of Alt man's Model used in prediction of business success /failure.
2. To apply the model in predicting the business success/failure of selected private commercial bank in Bangladesh during last 10 years.
3. To find out the nature of financial performance of sample banks & their major determinants during the period of the study.
4. To explore the ways & techniques for minimizing the challenges towards developing financial performance through using the Alt man's Model.

Hypotheses:

Based on extensive review of relevant research studies, the following hypotheses are formulated for statistical interpretations:

1. Variations in Z score among the sample banks are statistically significant.
2. There is a positive co-relation between selected variable of sample banks & value of Z score.

Justification of the Study

Financial distress refers to a situation where sufficient funds generation may not be possible making repayment of financial obligations more difficult. This is because of high fixed cost, more illiquid assets, lack of break-even points, negative cash inflow and erosion of equity. Edward Altman uses five ratios for prediction of the same. Altman found Z score accuracy between 82 to 94%. Cost of

financial distress is practically the bankruptcy cost. This study may be helpful for policy makers.

Review of the Relevant Studies-

Various studies have been done in the field of banking sector in Bangladesh. Relevant research studies have been referred to & few reviewed to arrive at a conclusion from the present study.

Afroja Parvin et al (2017) had a study on "A Comparative Analysis of Financial Soundness between

State-owned and private Commercial Banks: An Emphasis on Altman's Z score" They found that State Owned Commercial Banks had better financial health compared to their counterparts. There is no significant relation between ROE & Z score ratios.

Saha and Navila in its (2018) article "Bankruptcy Risk Prediction using Altman Z Score Model: An Empirical Study on Public Commercial Banks of Bangladesh". They studied 21 banks listed in DSE & found that Conventional Banks were in better position in Z score during 2009-16.

Niaz Mohammad & Nahar Oni (2015) found that Credit risk develops due to borrowers failing to timely repay loan. We need good analysis of financial data & non-financial variables to control the risk factors in disbursing of loan by commercial banks in Bangladesh.

Habibur Rahman & Shohel Rana (2018) found that unethical practices, unhealthy competition among the commercial banks, undue intervention in loan management, and non-cooperation of entrepreneur & absence of suitable investment climate etc are the major reasons for present crisis of Commercial Banks in Bangladesh.

Mizan et al (2013) had a study on "Determinants of Commercial Banks profitability in Bangladesh: An Internal Factor Analysis". The study is limited to 11 commercial banks covering the period 2001 & 2010.They found that equity to asset ratio had significant influence on their earnings. Higher volume of assets may not develop, more earnings due to diseconomies of scale, poor asset quality & inefficiency uses.

Abedin, et al (2018) had a significant study on "Bankruptcy and its Determinants: Evidence from Listed Commercial Banks in Bangladesh". They studied 29 listed commercial banks covering data of 2005 to 2015. Findings are that increase in capital adequacy ratio & efficiency in the banking sector prevents the probability of bankruptcy while increase in nonperforming loans & age of the banks have adverse effect.

KawsarJahan (2018) prepared an article on "Determinants of Financial Distress: Evidence from the State-owned Commercial Banks in Bangladesh". It investigated the determinants of financial distress in State Owned Commercial Banks (SOCBs) of Bangladesh covering five State owned banks from the period of 2009-2016.The study observed that SOCBs in Bangladesh are financially distressed and are characterized by low capital adequacy ratio, high loan loss provision, liquidity problem, poor earnings quality and management inefficiency.

Ahmed & Alam (2015) authored an article on "Prediction of Financial Distress in Banking Companies of Bangladesh and Need for Regulation by FRC". They found that most of the sample banks were in distress zone (Z< 1.81). Very few banks were in grey Zone (1.81<2.99) while negligible number of banks were in safe zone. Using the multiple regression analysis, they established significant contribution of the selected ratio indicators except the book value of equity to total liability.

Methodology of the Study

It comprises sample Mix, Nature & sources of data, techniques of analysis and testing of hypotheses etc.

Sample mix: It covers five private commercial banks selected on the basis of convenience in data collection, Period of study covers 2010-11 to 2018 i.e., 10 years on the basis of availability of the same.

Nature & sources of data: The study is based mainly on secondary data i.e., the annual reports & other operational records of the sample banks covering a decade.

Techniques of analysis followed:

1. Firstly, for testing the Altman Model, values of Z scores of individual bank & sample banks are located.
2. Classification of 3 zones is shown based on standard norms.
3. For testing the two hypotheses, multiple correlation & variance tests have been used.
4. Values of x1, x2, x3, x4& x5 are measured as per the model procedures of Altman.
5. Levene's test, t- test for equality of means, 95% confidence interval of the differences are shown.

The followings are the definitions of the Altman Z-Score model:

Name of Variables	Definition
x_1	WC/TA
x_2	RE/TA
x_3	EBIT/TA
x_4	MVE/BVTL
x_5	SV/TA

Where, Z=Discriminant Score; WC=Working Capital, TA=Total Assets, RE=Retained Earnings, EBIT=Earnings before Interest and Taxes; MVE=Market Value of Equity; BVTL=Book Valueof Total Liabilities; SV=Sales Value.

Finding & Observations

Again, the first hypotheses we find that since the average value of Altman's Z-score of Bank2 and $Bank_3$ is higher (3.65) than the average score of $bank_1$, $bank_4$, and $bank_5$ (0.70). We may suggest that the three banks might have to increase their Altman's score to achieve their target.

Table 1: Liquidity Scenario of sample commercial banks during 2010-2020

Year	Name of Banks				
	UCBL	**DBBL**	**NB**	**IFIC**	**PREMIER**
2010-2011	0.06	0.11	1.03	1.03	0.39
2011-2012	0.08	0.12	0.90	0.72	0.72
2012-2013	0.09	0.13	0.91	1.09	0.58
2013-2014	0.08	1.09	1.09	1.22	0.69
2014-2015	0.07	1.38	0.81	1.24	0.64
2015-2016	0.09	1.32	2.13	1.58	0.63
2016-2017	0.08	0.11	2.03	0.69	0.55
2017-2018	0.07	0.12	1.67	0.65	0.56
1918-2019	0.06	0.10	1.33	0.61	0.54
2019-2020	0.08	0.01	1.39	0.69	0.58
Average	0.08	0.45	1.33	0.95	0.59
SD	0.01	0.57	0.47	0.33	0.09
CV (%)	14.14	126.26	35.72	34.55	15.64
AGR (%)	4.20	53.81	9.75	0.65	6.21
Max Lev.	0.09	1.38	2.13	1.58	0.72
Min Lev.	0.06	0.01	0.81	0.61	0.39

It shows that average of X_1variables during 2011-2019 NB had the highest position followed by IFIC, Premier Bank, DBBL & UCBL respectively. In standard deviation, DBBL had the highest position followed respectively by NB, IFIC, Premier Bank & UCB. AGR% shows that highest position is in DBL followed by NB, Premier Bank, UCBL, IFIC. Practically X_1 variable shows the measure of liquidity situation of the sample banks during 2011-2019.Virtually liquidity level of NB was more satisfactory i.e., but repaying capacity of the bank was up to the mark but the situation of other 4 banks was questionable.

Table 2: Long Term Solvency of the Sample Banks during the period

Year	Name of Banks				
	UCBL	**DBBL**	**NB**	**IFIC**	**PREMIERPB)**
2010-2011	4.11	1.04	3.91	4.19	1.71
2011-2012	4.61	1.13	4.39	3.35	1.30
2012-2013	5.11	1.71	5.71	4.61	1.90
2013-2014	4.03	2.09	4.81	3.70	1.01
2014-2015	5.29	1.68	5.81	3.71	0.50
2015-2016	4.61	0.02	5.38	3.65	1.02
2016-2017	4.40	0.04	4.75	3.54	1.11
2017-2018	4.80	2.66	4.48	3.08	1.14
1918-2019	4.75	2.71	4.28	3.11	1.39
2019-2020	4.86	1.39	5.10	3.72	1.69
Average	4.66	1.45	4.86	3.67	1.28
SD	0.40	0.94	0.63	0.46	0.41
CV (%)	8.59	64.67	12.96	12.67	32.47
AGR (%)	2.37	595.35	3.39	0.10	7.63
Max Lev.	5.29	2.71	5.81	4.61	1.90
Min Lev.	4.03	0.02	3.91	3.08	0.50

Average value was highest in NB & lowest was in PB. SD was highest i.e. .94 in DBL but lowest in UCBL i.e. .40. AGR was highest in DBBL followed NB, UCBL & IFIC respectively. We know that X_2 variable is the symbol of leverage condition i.e. the long term solvency of the sample banks during the period under study. Here it is evident that NB had the most satisfactory position while it was least in Premier Bank followed by DBBL & IFIC, UCBL had also nice leverage atmosphere among the sample banks.

Table 3: Earning capacity of the sample Banks

Year	Name of Banks				
	UCBL	**DBBL**	**NB**	**IFIC**	**PREMIER**
2010-2011	1.32	1.39	2.81	1.24	1.50
2011-2012	2.11	2.11	3.14	1.61	1.66
2012-2013	1.70	1.70	2.40	1.65	1.82
2013-2014	1.19	1.90	2.31	0.98	1.31
2014-2015	2.47	2.56	2.94	0.90	1.30
2015-2016	1.57	1.22	3.52	1.05	1.50
2016-2017	1.50	1.70	2.92	0.94	1.75
2017-2018	1.21	1.95	2.26	1.00	1.74
1918-2019	1.10	1.90	1.89	1.31	1.57
2019-2020	1.39	1.98	1.72	1.38	1.62
Average	1.56	1.84	2.59	1.21	1.58
SD	0.44	0.37	0.57	0.28	0.18
CV (%)	28.02	20.29	21.97	22.87	11.27
AGR (%)	6.82	7.47	-3.05	2.95	1.49
Max Lev.	2.47	2.56	3.52	1.65	1.82
Min Lev.	1.10	1.22	1.72	0.90	1.30

Average value was highest in NB followed by Premier Bank, DBBL & UCBL respectively. SD was highest in NB followed by UCBL, DBBL, IFIC & Premier Bank respectively. AGR was highest in DBBL followed by UCBL, IFIC & Premier Bank. In reality X_3 reflects the productivity trends of the sample business based on time series data. It is found that NB had the highest productivity level followed by DBBL, PB, and UCBL & IFIC respectively.

Table 4: Equity growth of the Sample Banks

Year	Name of Banks				
	UCBL	**DBBL**	**NB**	**IFIC**	**PREMIER**
2010-2011	4.11	1.31	5.19	5.01	0.08
2011-2012	6.39	1.82	6.12	6.32	0.09
2012-2013	4.85	1.63	7.81	4.55	0.08
2013-2014	6.11	1.71	7.24	7.11	0.07
2014-2015	7.98	1.72	6.50	6.40	0.08
2015-2016	7.37	1.82	7.47	6.39	0.08
2016-2017	7.40	1.98	11.07	9.24	0.07
2017-2018	4.97	1.93	8.40	5.60	0.08
1918-2019	3.72	1.54	7.68	4.97	0.08
2019-2020	4.45	1.54	8.11	4.72	0.09
Average	5.74	1.70	7.56	6.03	0.08
SD	1.52	0.20	1.58	1.42	0.01
CV (%)	26.49	11.91	20.84	23.50	8.17
AGR (%)	3.85	2.35	5.82	3.02	1.57
Max Lev.	7.98	1.98	11.07	9.24	0.09
Min Lev.	3.72	1.31	5.19	4.55	0.07

Equity growth shows that on average variable NB had the highest position followed by IFIC, Premier Bank, DBBL & UCBL respectively. In standard deviation same sample bank had the highest position followed by IFIC, Premier Bank & UCBL respectively. AGR% shows that highest position is in NB followed by Premier Bank, DBBL, UCBL, IFIC, respectively.X4indicates the effects of decline in market value showing the relation between market value of equity & total liabilities. Here it is distinct that NB did have the most satisfactory situation while PB had the worst situation. IFIC & UCBL had satisfactory level compared to others.

Table 5: Business growth of the sample Banks

Year	Name of Banks				
	UCBL	DBBL	NB	IFIC	PREMIER
2010-2011	0.09	0.07	0.09	0.07	0.04
2011-2012	0.19	0.09	0.10	0.06	0.06
2012-2013	0.08	0.07	0.11	0.08	0.05
2013-2014	0.07	0.08	0.08	0.07	0.06
2014-2015	0.10	0.08	0.09	0.07	0.04
2015-2016	0.08	0.08	0.09	0.06	0.50
2016-2017	0.08	0.08	0.10	0.06	0.40
2017-2018	0.08	0.08	0.09	0.07	0.05
1918-2019	0.09	0.09	0.09	0.07	.05.
2019-2020	0.08	0.08	0.01	0.09	0.06
Average	0.09	0.08	0.08	0.07	0.14
SD	0.03	0.01	0.03	0.01	0.18
CV (%)	36.92	8.33	31.76	13.47	126.92
AGR (%)	5.91	2.00	-7.55	3.41	1.26
Max Lev.	0.19	0.09	0.11	0.09	0.50

Exhibits that in average variable of such, Premier Bank had the highest position followed by IFIC, NB, DBBL & UCBL respectively. In standard deviation sample Premier Bank had the highest position followed by IFIC, NB & UCBL respectively. AGR% shows that highest position is in UCBL followed by Premier Bank, DBBL, NB, IFIC, respectively. X5is the reflection of the measure of assets efficiency i.e., the relation between total loans & advances and total assets volume. In this context there prevailed similar situation among the 4 sample banks although PB had the different situation.

Table 6: t-test for equality of means

	Levene's test		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F-value	p-value	t-value	df	p-value	Mean Difference	SE	Lower	Upper
Equal variances assumed	0.12	0.753	5.96	3	<0.01	2.95	0.50	1.37	4.52

We compared mean differences of Altman's Z-score by positional zones. We applied two-independent sample t-test. The results of t-test are shown in Table 1. The results indicate that the Levene's test for equality of variances are not significant (p-value = 0.753) meaning that variances of Altman's Z-score of two zones (safe zone and distress zone) assumed equal. According to t-test, means of safe and distress zones on are significantly different (t = 5.96, p-value < 0.01). Therefore, we conclude that means of Altman's Z-score score of positional zones are different.

Table 7: Correlation matrix

	Z-score	X1	X2	X3	X4	X5
Z-score	1	0.639	0.043	0.825*	0.210	-0.401
X1	0.639	1	0.275	0.514	0.445	-0.265
X2	0.043	0.275	1	0.290	0.960**	-0.546
X3	0.825*	0.514	0.290	1	0.307	-0.123
X4	0.210	0.445	0.960**	0.307	1	-0.714
X5	-0.401	-0.265	-0.546	-0.123	-0.714	1

*p<0.10, **p<0.01

The correlation among X_1, X_2, X_3, X_4, X_5 with $Z-score$ showed positive correlation among themselves. As per the second hypotheses it is clear that the statistically significant association is observed only in X_3 with Z-score $r = 0.825$, $P-value$ 0.085 (at 10% $level$ .The other association did not find any significant relationship with Z-score. Additionally, the correlation between X_2 and X_4 is positively associated ($r = 0.96$, $p-value$ 0.01). However, the correlation between X_5 and Z-score is negatively associated ($r = -0.401$) but the relationship is not statistically significant (Table 7).

Table 8: Bank Wise Z Score of sample Banks

Sample Bank	Z score value	$\overline{X}$	Standard Norms	Zone (As per Z Score)
DBBL	3.22	3.65	Z > 2.99 (Safe Zone)	Safe
NB	4.075			Safe
IFIC	1.150	.70	Z < 2.99 (Grey Zone)	Distress
UCBL	0.15			Distress
PREMIER	0.080		Z < 1.81 (Distress Zone)	Distress

The first hypotheses we find that since the average value of Altman's Z-score of $Bank_2$ and $Bank_3$ is higher (3.65) than the average score of $bank_1$, $bank_4$, and $bank_5$ (0.70). We may suggest that the three banks might have to increase their Altman's score to achieve the target.

Conclusions

Consequent to the statistical analysis of the study it can be concluded that there are variations in Z score performance of the sample banks. Also, some banks are above the standard norms while 3 of the banks are behind the standard position. Interdependence of the related variables like x1 to x5 has also variations among the sample banks. This requires careful attention of authorities for managing & control of NP Loans, cost of funds and deposit mobilization. Moreover, good use of project appraisals in assessing the credit worthiness of the clients along with corporate governance are to be cognized. Again proper & consistent compliance with regulatory frame work of Bangladesh Bank, Bangladesh Securities & Exchange Commission & Financial Reporting Council need to be ensured.

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Empowering Poor Women in South Asia: Unveiling the Impact of Grameen Bank through Micro-finance System

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ABSTRACT

The goal of the current inquiry is to determine how Bangladeshi rural women's empowerment has been impacted by the Grameen Bank's microcredit program. To collect information from respondents who apply for a microcredit loan using a standardized questionnaire, a straightforward random sample approach was used. After acknowledging 270 viable responses, descriptive statistics, a t-test, and a linear regression analysis were used to further explore them. We have made an effort to evaluate the impact of Grameen Bank using a variety of variables, including solvency, female child education, entrepreneurship creation, social standing, decision-making capacity, and gender discrimination protest. The findings showed that the Grameen Bank microcredit program has a considerable impact on women's empowerment and that all of the components have a significant impact on this. Additionally, regression analysis demonstrated Grameen Bank's microcredit loan program.

KEYWORDS

Microfinance; Solvency; Female Children Education; Women Empowerment; Women Entrepreneurship; Gender Discrimination

Introduction

Women represent half of the world's population, and in many emerging nations, their influence is greatly heightened in all spheres of life. South Asian women are particularly burdened by having to perform both the traditional role of homemaker and the contemporary role of earner (Nandy & Biswas, 2022). Pre-existing prejudice and indeed the social injustices that fuel it are especially harsh on women in Bangladesh (Nandy & Biswas, 2022). According to Chowdhury and Somani (2020), women have contributed 40% of all economic progress in Bangladesh, which is one of the most prospering nations in Asia, through creating income, employment, and innovation (Svery vital ajjad, Kaleem, Chani, & Ahmed, 2020). Women in remote areas have an especially difficult situation because they lack access to basic resources. Although Bangladesh as a country, met the requirements to move from least developed to developing status, gender inequality regrettably persists both within and outside the home, which tends to drag down the economy throughout the country (Chowdhury & Somani, 2020). Therefore, it is imperative to promote women's empowerment (WE) through the development of female business owners in order to reduce if not eliminate extreme poverty and enhance their quality of life.

The Grameen Bank (GB) serves as one of the biggest NGOs in Bangladesh that work to accelerate the socioeconomic development of the underprivileged, particularly such women in society, through the use of microfinance. By creating chances and ending the abuse of the moneylenders, GB has been making a special contribution to the sufferings of women in business in rural areas. Unfortunately, not enough researches have been done on rural women globally to understand their current situation and how GB's microfinance program can ensure their empowerment in terms of their economic stability, female children's education, creating women entrepreneurs, socioeconomic status, decision-making ability, and protest against gender inequality.

By revealing the effects of GB's microcredit program on WE, the current investigations will advance the research. This research will also look into the challenges faced by low-income women who are trying to start their businesses using GB's microscale credit-led strategy. The researchers also attempted to explain how disadvantaged women's socioeconomic standing and capacity for decision-making have improved after the introduction of microlending in Bangladesh. This study will also contribute to our understanding of how GB helps the underprivileged educate their children, especially female youngsters, by offering scholarships. Similarly, this study will investigate how micro-credit programs empower rural women to combat gender discrimination in quest for women's rights. Accordingly, this assessment will afterward contribute to the growth and progress of many financial organizations in Bangladesh.

Little research has been performed globally to examine the influence of micro-credit systems on WE, notably in Bangladesh, according to an analysis of the existing literature. Therefore, this investigation clarifies the challenges faced by disadvantaged Bangladeshi women as they work to establish and grow their small businesses using Grameen Bank's microscales credit-led strategy

(GB). Therefore, the principal research question under inquiry is:

How does the Grameen Bank's microcredit lending program influence the empowerment of women?

Research Purpose and Objectives

The analysis looked at the impact of Bangladesh's microlending loan program offered by GB on women's empowerment. The accompanying objectives are drawn to reveal the impact.

1. To examine GB's contribution to the socioeconomic advancement of its female clientele in terms of solvency, female child education, social status, capacity for decision-making, and protest against gender discrimination.

2. To investigate GB's contribution to the socioeconomic advancement of its female clientele in aspects of solvency, female children's education, social status, capacity for decision-making, and protest against discrimination based on gender.

3. To determine whether participation in microcredit programs aids in the growth of female entrepreneurship and the creation of jobs for others.

Literature Review

Women Empowerment (WE)

Women business owners in Bangladesh are a number of Bangladeshi women who own enterprises and defied all conventions to open up new chances and advance the nation's economy (Khanum, Akter, Deep, Nayeem, & Akter, 2020). Bangladesh has a total population of 66,265,577 people, with a male-to-female ratio of 102.25 to 100 (Worldometers, 2022), and a labor force participation rate of roughly 36.4% for women compared to men in 2020 (Mujeri, 2022). The world's fastest-growing businesses are those run by women (Amrita & Biswas, 2022). Women suffer disproportionately from societal prejudice, low educational achievement, a lack of political participation, economic isolation, and other factors, and the rural population bears a disproportionate share of these burdens (Moudud-Ul-huq, 2013, Mujeri, 2022). In all spheres of public life, women and men in Bangladesh are given equal rights under the constitution (Articles 28(1) and 28). (3). Article 10 of the constitution mandates that the state ensures women's full and active participation in all aspects of public life (Nandy & Biswas, 2022). According to BWCCI (Bangladesh Women Chamber of Commerce and Industry), Bangladeshi women entrepreneurs are dynamic, eager to learn, inventive, diligent, and willing to take risks (Amrita & Biswas, 2022). Making the shift from micro- to small- and medium-sized business owners is greatly aided by a little assistance. Amrita and Biswas (2022) conducted research on the resilience of Bangladeshi women business owners during the COVID-19 pandemic. Only 20% of women-led enterprises in Bangladesh, according to their research, have faced substantial obstacles, despite the fact that 90% of the nation's female entrepreneurs have dealt with severe emotional, social, and financial hardship. Women's empowerment is a worldwide issue. In the thirty years after GB first opened up its doors, women's status and power have been significantly improved.

Microcredit

In Bangladesh, the first microcredit program was created. The English word credit is a derivation of the Latin term credo, which means "I believe or to trust." As a result, "credit" requires the lenders to believe or have faith in the part of one party. Microcredit refers to small loans with terms of six months to a year, with interest, that is intended to encourage entrepreneurship. According to Mohammad Yunus, this is a fundamental human right that may instantly empower people and generate revenue, breaking the cycle of poverty. GB runs its branches at the union, district, and sub-district levels.

Development of Research Hypotheses

In Bangladesh, GB promotes female empowerment, social, and political equality through its microcredit-driven strategy. By performing a survey in Bangladesh's Tangail regions, Hasan, Shetu, Chakraborty, and Khan (2019) evaluated the impact of microfinance on WE and found that these programs have a beneficial impact on empowering women in rural areas. Similarly, to this, women who used the microcredit option eventually experienced socioeconomic empowerment, according to Akhter, Kun, Chukwunonso, and Weise (2018).

GB's role in WE through improved Solvency and Decision-making Ability

By improving rural women's financial stability, decision-making skills, and purchasing power, GB's microcredit has promoted WE in Bangladesh (Tabassum & Singh, 2018). Akhter et al. (2018) collected information from 324 rural women debtors to analyze the effect of microcredit programs on WE. They confirmed that the microlending program had a substantial impact on WE by allowing women to participate in decision-making by helping them build their self-esteem, solvency, and business competence.

Table-4.1. Disbursement of Loans (BDT in Millions)

Year	2014	2015	2016	2017	2018
Total Loan Amount	133296.7	149221.7	187534.5	234048.4	245965.5
Male	4536.1	4841.4	5012.1	7814.1	8252.9
Percentage of Loans	3.4	3.2	2.7	3.3	3.4
Growth Rate	2.9 %	6.7 %	3.5 %	5.9 %	5.6 %
Female	128760.6	144380.2	182522.4	226234.3	237712.6
Percentage of Loans	96.6	96.8	97.3	96.7	96.6
Growth Rate	5.9 %	12.1 %	26.4 %	23.9 %	5.1 %

Source: Annual Report, 2014-2018, Grameen Bank

Table 4.1 depicts that compared to male clients; women clients received more than 94% of all loans. Male and female consumers' loan disbursement rates showed positive development between 2014 and 2018. In particular, the increased rate of granting loans to female consumers reached 5.1% in 2018. As a result, GB significantly contributed to WE by improving their ability to resolve problems and make decisions.

The Role of GB in Empowering Women through the Promotion of Female Child Education

GB promotes women's entrepreneurship and works to improve the education of children, especially girls (Pitt, Shahidur, & Jennifer, 2006).

Table 4.2. Percentage of scholarshipsgiven to male and female children of GB clients

Year	Percentage of total scholarship given to female children	Percentage of total scholarship given to male children
2011	57.8%	42.2%
2012	58.0%	42.0%
2013	58.4%	41.6%
2014	58.7%	41.3%
2015	58.9%	41.1%
2016	59.3%	40.7%
2017	59.6%	40.4%
2018	59.7%	40.3%

Source: Annual Report, 2010-2018, Grameen Bank.

According to Table 4.2, 50% of the scholarships were awarded to the children of GB clients who were female. From 2010 to 2018, the number of scholarships awarded to female children increased while those provided to male children of GB clients decreased on an annual basis. Table 4.2 further demonstrates how GB empowers its female customers by providing scholarships to their children, particularly female children, to enable their clients to pursue higher education.

Role of GB in WE through Promoting Female Entrepreneurs and Boosting Social Status

GB works to elevate social standing and support female entrepreneurs (Pitt, Shahidur, & Jennifer, 2006). Furthermore, Chowdhury and Somani (2020) demonstrated that GB has greater potential for development in the future, supporting the social status and financial situation of rural women. The social business model employed by Grameen Bank in Indonesia, as demonstrated by Faza (2022), can end poverty. In a similar vein, Choudhury, Das, and Rahman (2017) noted that microcredit was a strong mechanism for developing WE by raising their socioeconomic position. Additionally, GB launched a unique program called "Village Phone Ladies" that aids in raising the social standing and income of their female clientele. The number of rural ladies and the number of loans issued to them are shown in Table 4.3.

Table 4.3 shows that between 2014 and 2018, both the number of rural ladies and the money distributed to them rose annually. This rise in figures demonstrates how Great Britain encouraged rural women to launch their small businesses, giving them hope for the future.

GB's Role in Empowering Women Against Gender Discrimination

GB supports the fight against gender discrimination and domestic abuse by encouraging women to participate in credit facilities (Kim et al., 2007). According to Karim and Rabiul (2013) women's engagement in microcredit helped to lessen the gender-based disparity that exists between husbands and wives.

Referring to the growth pattern in table 4.4, it can be concluded that over 96% of the GB members are

Table 4.3. Loan disbursement to the village ladies

Year	Number of Villages Ladies (in Millions)	Growth %	Amount of loan taken by the Village Phone Ladies (in Billions)	Growth %
2014	1.43	11.72%	2.71	0.37%
2015	1.63	13.99%	2.72	0.37%
2016	1.69	3.68%	2.73	0.37%
2017	1.80	6.51%	2.75	0.73%
2018	1.94	7.78%	2.76	0.36%

Source: Annual Report, 2014-2018, Grameen Bank

Table 4.4. Number of Women Clientsin GB

Year	Female Clients	Percentage of Female Clients	Growth% of Female Clients	Male Clients	Percentage of Male Clients	Growth% of Male Clients
2010	8039408	96.4%	4.21%	301215	3.6%	17.77%
2011	8046561	96.1%	0.09%	324437	3.9%	7.71%
2012	8054534	96.2%	0.10%	319359	3.8%	-1.57%
2013	8220330	96.2%	2.06%	323647	3.8%	1.34%
2014	8316986	96.3%	1.18%	323239	3.7%	-0.13%
2015	8499007	96.5%	2.19%	307772	3.5%	-4.79%
2016	8593877	96.5%	1.12%	307733	3.5%	-0.01%
2017	8635961	96.7%	0.49%	298913	3.3%	-2.87%
2018	8781372	96.7%	1.68%	303131	3.3%	1.41%

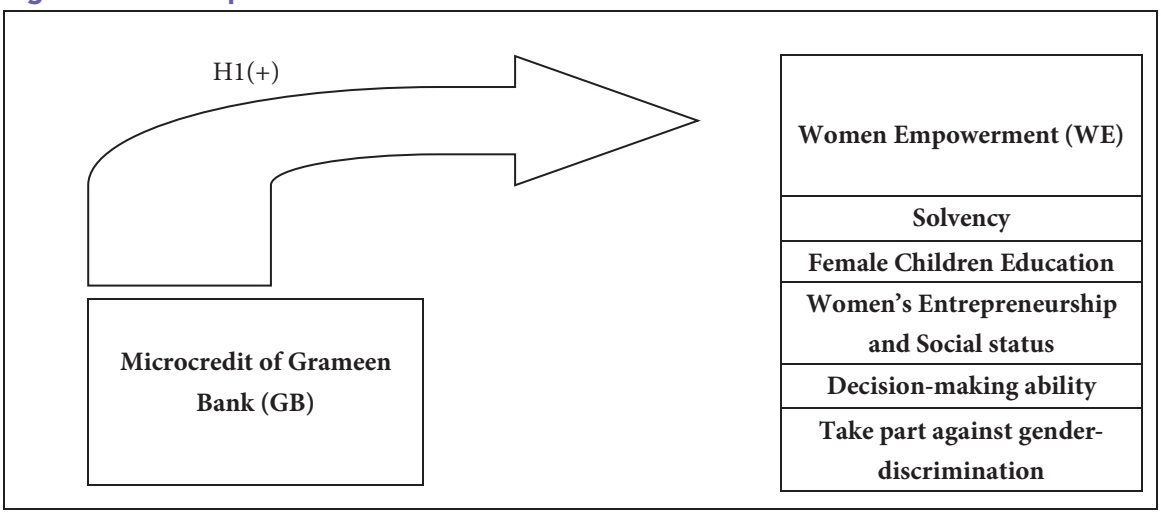
Source: Annual Report, 2010-2018, Grameen Bank.

female, with only 3-4% being male. This indicates that the majority of GB's clients are female. The table shows that the percentage of female members growing each year is rising. Therefore, GB concentrates on advancing WE and gender equality.

Hashmi (2012) however, strongly refuted the notion that microcredit gives women in Bangladesh more authority. He (2012, p. 55) thought that one of these myths was the Dr. Yunus-initiated practice of microcredit lending. Following the discussion above, the following assumptions can be developed:

H1: The microcredit system of GB has a positive influence on the empowerment of their women clients in terms of solvency, female children's education, social status, decision-making ability, and protest against gender discrimination.

Figure 4.1: Conceptual Research Framework



Authors' contribution, 2022

Research Methods

The current study is an empirical investigation, and both qualitative and quantitative methods were used in its design. The study used Focus Group Discussions (FGD), Participatory Rapid Appraisal (PRA), and individual interviews.

Participants

The population of the study consists of women who have joined Grameen Bank and have been participating in microfinance operations for at least a year and who solely live in the Chittagong region of Bangladesh. Port City was deliberately chosen because of its proximity to the area, good access to public transportation, and large concentration of bank branches within a manageable radius.

Sampling Design

The current study adopted a quantitative method to accumulate responses from the women beneficiaries of Grameen Bank within Chittagong city. Simple random sampling has been used for drawing responses by visiting different branches of Grameen Bank located in Chattogram. Similarly, the following sample branches were selected from the population by using the simple random sampling method. The sample branches are as follows:

Name of Grameen Bank's Branches	Number of Respondents
1. Chambal, Banskhali Branch	09
2. Jaldi, Banshali Branch	10
3. Saral, Banskhali Branch	09
4. Puichari, Banskhali Branch	09
5. Harvang, Chakaria Branch	08
6. Pekua, Chakaria Branch	10
7. Boroitali, Chakari Branch	09
8. Chiringga, Chakaria Branch	10
9. Charamba, Satkania Branch	10
10. Demsha, Satkania Branch	10
11. Doadari, Chandanaish Branch	10
12. Shatbaria, Chandanaish Branch	10
13. Bottali, Anoara Branch	09

Name of Grameen Bank's Branches	Number of Respondents
14. Chatari Chowmohoni, Anoara Branch	09
15. Shakpura, Boalkhali Branch	10
16. Kanogopara, Boalkhali Branch	09
17. Charlokha, Karnafuli Branch	08
18. Shikolbaha, Karnafuli Branch	09
19. Jobra, Hatazari Branch	10
20. Madarsha, Hatazari Branch	08
21. Bashbaria, Shitakunda Branch	09
22. Vujpur, Fotikchari Branch	09
23. Narayonhat, Fotikchari Branch	10
24. Shuvpur chagolnaya, Feni Branch	08
25. Mohamaya, Feni Branch	09
26. Begumgonj, Noakhali Branch	08
27. Noakhali Branch, Noakhali	08
28. Sultanpur, Raujan Branch	08
29. Hydegaon, Patiya Branch	09
30. Habilajdip, Patiya Branch	10
Total Respondents	20

Sample Size

The desired sample size was obtained by using the Cochran formula:

$$n > \frac{z^2\ p\ 1-p}{d^2}$$

Where,

p= 0.5 (Proportion is unknown in our case; thus, we take it as 0.5)

z=Tabulated value on the significance level (α=0.05)

d=Margin of error (0.06)

$$\text{So, } n > \frac{(1.96)^2 * 0.5^2 1-0.5^2}{(0.06)^2} = 267$$

Survey Instruments

The survey questionnaire comprised questions about demographic information such as gender, age, education, number of family members and questions related to WE. The same context of the question was given to all interviewees and they received the same interview stimulus. The questionnaire was composed of both open and close-ended questions. The items for the said scale are gathered from the relevant research studies (Tabassum & Singh, 2018; Choudhury, Das, & Rahman, 2017; and Akhter, Kun, Chukwunonso, & Weisen, 2018).

Data collection procedure

To get a better understanding of the impact of Grameen Bank on WE data were gathered from the respondents through structured interviews along with the questionnaire. In addition, several books, journals, and dissertations as well as online sources Google Scholar, JSTOR, etc. were also used to gather data. In the questionnaire, we tried to combine numerical as well as some non-numerical questions. Five options were given to the respondents on the scale of 5-point Likert rating scale for the questionnaire. Thus, the result of the research depends on numerical and non-numerical analysis.

Data Analysis

Printed questionnaires were sent to 320 microcredit beneficiaries to draw responses. Out of 320 distributed questionnaires, the researchers received 270 (84.37%) filled-up responses. The first step in performing such an analysis required the development of a method for reviewing and organizing the data. Once again, a Microsoft Excel spreadsheet was used to record the numerical answer. Then, the gathered data are put into and screened through Statistical Package for Social Sciences (SPSS) for hypothesis testing. Finally, a simple regression analysis was performed to determine the effect of GB's microcredit program on WE.

Reliability and validity

In this study, Cronbach's alpha was assessed. The widely used method for evaluating the dependability of the scale is Cronbach's alpha (Malhotra, 2002; Cronbach, 1951). The value of this scale ranges from 0 to 1; however, for the scale to be reliable, a satisfactory value must be greater than 0.60 (Malhotra, 2002; Cronbach, 1951; Biwas & Rahman, 2015; 2017; 2019; 2021). It is found that Cronbach's alpha(ɑ) score for WE are 0.79. Hence, the research instruments used in this study are reliable.

The degree to which a measure correctly estimates its intended meaning is known as validity (Hair, Black, Babin, Anderson, and Tatham, 2007; Biswas, 2018). The complete set of instruments was translated into Bangla, and the authors guaranteed the validity of the criteria. Later, the translated versions' validity was confirmed by comparing them to the actual version (Kaur, Sambasivan, and Kumar, 2013; Biswas, Ferdausy, & Rahman, 2018; Nandy, Biswas, & Akhter, 2021; Nandy & Biswas, 2022a; 2022b).

Findings

Frequency Distribution

A demographic picture of the GB member's life is shown in the following table through frequency distribution:

Table 6.1 Frequency distribution of the Demographic Characteristics

Demographic Characteristics	Category	Frequency	Percentage (%)
Gender	Male	00	00
	Female	270	100
Marital Status	Married	240	88.9
	Widow	29	10.7
	Separated	1	0.4
Age	20-25	47	17.4
	26-30	43	15.9
	31-35	48	17.8
	36-40	42	15.6
	41-Above	90	33.3
Education Level	Primary	71	26.4
	Secondary	56	20.7
	Higher Secondary	7	2.6
	Degree (Pass)	4	1.5
	No Formal Education	131	48.7
Occupation	Fishing	2	0.7
	Farmer	6	2.2
	Housewife	236	87.4
	Others	26	9.6
Husband's Occupation	Fishing	1	.4
	Farmer	80	29.6
	Daily labor	19	7.0
	Others	165	61.1
Religion	Muslim	133	49.3
	Hindu	135	50
	Christian	2	0.7
Monthly Income	5000-10000	98	36.3
	10001-15000	77	28.5
	15001-20000	26	9.6
	20001-25000	29	10.7
	25000+	40	14.8

Note. N = 270; Authors' Contribution, 2022

Some other numerical demographic characteristics have been presented in the following table through descriptive statistics like mean and standard deviation:

Table 6.2 Descriptive Statistics of the Demographic Characteristics

Demographic Characteristics	Mean	Standard Deviation
No. of Family Members	3.50	1.771
No. of Children	1.41	0.803
No. of Earnable Member in the family	1.41	0.803
For How long been a Member of Grameen Bank	8.15	5.79

Source: Authors' Contribution, 2022; Note: N=270

Table 6.2 indicates that the mean number of family members of the respondents is 3.50±1.771, where the mean number of children is 1.41±0.803. Also, the mean number of earnable members in the family is 1.41±0.803. It has also been found that on an average for 8.15±5.79 years they have been members of Grameen Bank.

Table 6.3 The Satisfaction Level of GB's Women Clients about their Empowerment

Types of Response	Strongly Disagree		Disagree		Undecided		Agree		Strongly Agree	
	Freq.	**%**	**Freq.**	**%**	**Freq**	**%**	**Freq.**	**%**	**Freq.**	**%**
Capital provider	2	0.7	37	13.7	16	5.9	69	25.5	146	54.1
Educating their female child	3	1.1	119	44.1	90	33.3	86	31.8	169	62.5
Starting own business and attaining social status	00	00	23	8.5	26	9.6	64	23.7	157	58.1
Participate in decision making	00	00	4	1.5	13	4.8	48	17.8	205	75.9
Can protest against gender discrimination	31	11.5	11	41.1	7	2.6	90	33.3	131	48.5

Source: Authors' Contribution, 2022

Descriptive Statistics

Descriptive statistics of the aforementioned indices are exhibited in the following table:

Table 6.4 Means and Standard Deviations of WE

Index	Mean	Std. Deviation
WE	3.241	0.56

Source: Authors' Contribution, 2022; Note: N=270; WE= Women Empowerment (measured in terms of solvency, female children education, creating women entrepreneurs and social status, decision-making ability, and protest against gender discrimination)

From table 6.4, by examining the score of mean and standard deviation, it can be said that GB's microcredit program facilitated and strengthened the survival strategy of the women clients with their empowerment (Mean = 3.241).

T-test

The results of the one Sample T-test are shown in the following table:

Table 6.5: One-Sample t-Test

Hypothesis testing on Variables	Test Value = 3					
	T-test	Degrees of Freedom	p-value	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
WE	39.54	269	.000	1.613	1.46	1.53

Source: Authors' Contribution, 2022; Note: WE= Women Empowerment (measured in terms of solvency, female children education, creating women entrepreneurs and social status, decision-making ability, and protest against gender discrimination)

From Table 6.5, it is observed that the null hypothesis is rejected at a 5% level of significance since all the p-values are significantly low (less than 0.05). Thus, we may conclude that GB's microcredit loan program has a positive and significant impact on WE.

Regression Analysis

The output of simple linear regression analysis in respect of GB's microcredit loan program and WE are shown below:

Table 6.6: Simple Linear Regression Model Output

Model	Coefficient (β)	Standard Error	Test statistic (t)	Sig. value (p)
Constant	2.01	.27	7.5	.000
Microcredit Loan Score	0.33	.071	4.67	.000
ANOVA (F Statistic)	21.72		**P value:**	.000
R^2	0.176			
Adjusted R^2	0.174			

Source: Authors' Contributions, 2022 (Note: N= 270; Dependent Variable=WE; Correlation is significant at the 0.05)

From Table 6.6 it is observed that the unstandardized B coefficient is positive numbers (0.33) which indicate that if there is an increase in GB's microcredit loan program, it is associated with an increase in WE score. The P value (.000) is less than 0.05, thus the independent variable, GB's microcredit loan program has a significant impact on the WE score. The F-statistic value (21.72) is less than the p-value (0.000) which refers to the significance of the model i.e. our fitted model can significantly predict the dependent variable WE. In our model, the value of R^2 is 0.176 i.e. GB's microcredit loan program explains 18% of the total variation in the dependent variable, WE, which denotes a weak effect size (Evan's, 1996). The value of adjusted 〖R〗^2suggests a lack of fit of the data to the model.

Discussion and Implications

The inherent goal of this research is to reflect on the prevailing situation and whether GB's micro-finance system can improve the socio-economic condition of poor women. Quantitative outcomes revealed that GB's microcredit facility significantly increased the solvency (54.1%), female children's education (62.5%), social status (58.1%), and decision-making ability (76%) of their women clients. Results also demonstrated that GB's microcredit facility enables women clients to protest against discrimination and violence (48.5%) thereby empowering them. Similarly, linear regression analysis demonstrated that GB's loan program clarifies 18% of the total variation in WE. In addition, the t-test shows that GB's microcredit loan program is a vital factor for anticipating WE. According to the research, rural women who take out microcredit loans from GB become more independent by improving their financial stability and taking part in decision-making at the individual, household, social, and governmental levels. Participating in the GB credit program has helped the recipients launch a variety of financial ventures and become prosperous business people by fostering their empowerment. In addition, the GB credit program has given them the ability to change their way of life and speak out against violence and discrimination. The current study will add to the body of knowledge on Bangladeshi women's entrepreneurship, empowerment, education, and gender equality. However, the Bangladeshi government must take into account how the GB has helped WE in Bangladesh to reduce poverty. The outcomes will assist in creating entrepreneurs and strengthening WE in Bangladesh. Subsequently, this inquiry will inspire GB and other financial organizations to grow in the future which will support the social and economic status of rural women. Furthermore, the diversified socio-demographic profile of rural women will satisfy the prerequisite of investigation of the South Asian environment.

Limitations and Future Research Direction

It would have been better to use data from a larger sample than what was employed in this study. The use of straightforward random sampling for sample collection was one restriction. For a precise estimate, however, a more advanced sampling technique like stratified sampling could be utilized. Additionally, the study's results primarily focus on the GB grantees in the Chittagong division and only display their photographs, not those of the entire nation. The study's findings can be compared to those of other studies of a similar nature to reduce poverty and promote women's entrepreneurship nationwide. The establishment of their enterprises has allowed them to sustain their involvement in economic and trade activities, which has greatly aided women's economic empowerment (WE). This has benefited women's access to school, their percentage of total assets, and their ability to obtain respectable jobs, all of which improve living conditions, dietary quality, and overall growth and development. Although the microcredit program may not have helped women become more entrepreneurial or aware of their rights, it did help underprivileged women feel more empowered (Huque, 2017).

Conclusions

This research confirms that the enhanced economic independence of low-income women and the lessening of discrimination they experience are the two most important advantages of microfinance programs. The investigation's findings also revealed that the GB's microfinance system activates WE for all of its indicators, including solvency, the education of female children, social status, decision-making, and participation in efforts to abolish gender discrimination. Second, GB's microcredit strategy may inspire female entrepreneurship and help improve the Bangladesh's poverty levels. Additionally, the Linear regression study showed that GB's microcredit loan program anticipates 18% of the variability in WE. Furthermore, the t-test demonstrated that GB's microlending program is the key element for predicting WE. It means in other words that GB's microcredit loan programs significantly improve the lives of their participants. The study found that GB's microlending program was significantly and favorably affecting the lives of its participants.

Conflict of Interests

We declare that we do not have any potential conflict of interest.

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Malaise of Malware Attacks Wake-up call for cybersecurity in Bangladesh

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ABSTRACT

Bangladesh had been on the battleground for nine bloody months during the 1971 liberation war against Pakistan to protect its sovereignty. The same country has been on the front line in the 21st century, but this time it is not at war with any particular country like that real pitched battle. It has been on the battlefield with global cyber-criminals and their attacks umpteen times. We read reports of cyber-threats and attacks almost daily in our country and beyond its territory. Bangladesh often comes under virus warfare launched by hackers, hacktivists, info thieves and wire frauds in cyberspace or in the virtual world, making the real world unstable through breaking the ranks of security and the heist of important data, documents, information and money. Cyber-attacks have snatched away night's sleep of IT advisers, managers and administrators of governments across borders. Bangladesh is no exception to this dire global phenomenon as hackers or unidentified people frequently haunt and hack websites through breaking into security firewalls. Cyber-threats have thus posed a big challenge to Bangladesh that has exposed its vulnerabilities to such attacks in recent years. Its banking system has always been at risk. Cellular companies and network operators seem doomed to suffer at the hands of cyber-criminals, attackers or hackers. Businesses are not immune too. The attacks have become a routine on the monthly phishing calendar of cyber-ogres. This paper tries to shed light on recurrent cyber-threats to, attacks on and challenges for Bangladesh. It suggests how this highly vulnerable country responds to such attacks and goes forward along with these challenges and uncertainties.

KEYWORDS

Cybercrime, cyber-attack, cyberwar, Bangladesh, vulnerability, cybersecurity

Introduction

Bangladesh and the world entered the cyber age in the late 20th century and they now live with the ubiquitous culture of computers, information technology and virtual reality. We are also used to seeing the enslavement of man by technology. Technologies have made our life easier and smoother on one hand, but enslaved us completely on the other. Hardly a day goes by without our use of technologies–be it smartphone, computer or internet. But this very technology has two faces–virtue and vice. The good thing is the entire world has become a single global village. We are cosmopolitans now and communication is at our fingertips. But this very technology is damaging our relations, making us cry and ashamed, and rendering us losers. In this day and age, we are witnessing the perpetration of periodic cyber-attacks by hackers with intent to damage or destroy a computer network or system by using malicious software or malware. Are we aware of the negative side of technology and its far-reaching impact? We should. IT specialists, analysts and experts have argued that the threat to cybersecurity has been inflated across the world. Alarmists have already sounded premonitions that another Cold War has begun. The mightier are taxing the brains of the weaker. Many have gone a degree further and asserted that World War III is ongoing! This time the battlefield is cyberspace, the new domain of warfare. This article tries to exert the ins and outs of the issues for the avid readers of the Bangladesh Economia.

Cyber World vs Real World

The world has become more cyber than real in the age of the super-speed fifth-generation digital and internet technology. We harbour twin identities now–citizens of a nation and netizens of a cyber world. As we become netizens, we get hooked to various internet-enabled gadgets and devices, the internet world and other virtual social or professional networks rather than real-world social gatherings and get-togethers. In the era of the rapid march of the cyber world characterised by technological advances and innovations, we are alarmed by phishing and spamming time and again. Our real world is tormented by cut-throat geopolitics in cyberspace where nations are engaged in the conflict of interest, with the barracudas out to grab the minnows. It is a high-stakes, dog-eat-dog world of cyber-power brokers. But what is happening in cyberspace, in Marshall McLuhan's global village? Are we really happily living in the cyber age, in the age of information overload, in the age of social networks? The answer is not so far to seek.

The netizens are not staying unstressed in cyberspace. Smart devices have become an addition for us for their easy availability everywhere. The overuse of these gadgets is making us addicted. This has become more dangerous than drug addiction. The problem is acute among teenagers. Their academic results are in a downtrend for internet addiction. It is true that half of the telecoms customer spending goes wasted on Facebook, YouTube, TikTok, online games or pornography at night. It is because of the compulsive use of the internet rather than concentrating on their reading tables. Socialisation has hit rock-bottom over the years. The digital boom and bust, the free flow of information in this rat race world and the strong communication technology have made our life easier but tougher to survive amid

cyber-uncertainties. Our relationship is becoming cyber and we are becoming motionless and emotionless with the bane of smartphones in the age of infobahn. It is as if science has given us speed but snatched away our emotion.

Hacking and Cyber-attacks Sans Borders

Hacking and cyber-attacks are the daily dose of life in the digital world today. Just an earth-shattering piece of cyber-hacking news stunned all the Bangladeshis six years back on a balmy afternoon in February 2016. Have you forgotten the world's largest reserve heist in Bangladesh Bank? That swindle shocked the emerging economy awhile in its onward march in progress. Anonymous, a hacktivist collective, broke into the bank's SWIFT messaging network and plundered $81 million from its account with the New York Federal Reserve. This is only the tip of the iceberg of such financial fiddles globally. Then again a global pandemonium on 12 May 2017 is still a nightmare as the world awoke to a wave of cyber-attacks on tens of thousands of targets like businesses, corporate behemoths and state entities in 150 countries. The cadre of hackers forced British hospitals to turn away patients, affected Spanish firms like Telefonica and threw other state entities into chaos. We have since seen a spike in the attacks in cyberspace across physical territorial borders.

The World in Full-scale Cyberwar, Then?

Ransomware was the key culprit behind the May 12 unprecedented global bedlam. That was not the beginning of the end. Cyberwar drags on as hacking has grown massively over the years, with new nations and companies getting targeted daily. Frantic acts hold businesses hostage for ransom through encrypting critical data or shutting down public or utility services. Hacking is no more a skilled coder's hobby, for it is now a full-fledged profession! Hacking has grown into full-fledged cyberwar. Formidable as it is really! Cyberwar is the use of computer technology to disrupt activities of a state or an organisation, especially a deliberate attack on information systems for strategic or military purposes. Cyberwar benefits military goliaths much through exposing military might and weaknesses of a particular country. Since the beginning of the Russia-Ukraine war in February 2022, cyberwar and hacking between the two rivals have started, putting the world at stake. When real war using military hardware fails to bring any fruition, rival groups launch cyberwar against each other to incapacitate the enemy country's data infrastructure. This is a serious crime against humanity. After World War I and II began the Cold War. Now comes the cyberwar. What's next?

Internet World and Cyber-terrorism

The entire internet world was in dread of a cyber-attack at the turn of 2022 as a vulnerability involving Java-dependent web server Apache Log4j was found on December 14. Cybersecurity experts spent days attempting to patch up things as hundreds of thousands of devices online were at risk of being attacked. This could allow attackers to craft malicious input data using a look-up pattern resulting in a denial-of-service attack. However, the cyber-threat research team of the Bangladesh Computer Council's e-Government Computer Incident Response Team (BGD e-Gov CIRT) sent out a warning against the use of Log4j as it was marked as a critical vulnerability. But threats do not stop here. In its latest 2022 threat report, the state-backed agency has alerted Bangladesh against botnet and malware infections of and strikes on important data infrastructure, including in financial institutions, to forestall cyber-attacks on the sidelines of the Russia-Ukraine war.

Hundreds of major government organisations, including ministries and agencies, along with commercial banks in Bangladesh have already come under coordinated cyber-attacks in recent months. The CIRT reports that big organisations often undergo 'distributed denial-of-service' attacks. In their parlance, technologists say incoming traffic originates from many different sources during a DDoS attack, making it impossible to stop the attack by blocking a single source. DDoS is a type of cyber-attack from a wide botnet controlled by a cyber-criminal to target some specific IT infrastructure to disrupt regular service delivery. Such attacks can cost an organisation both time and money while its resources and services become inaccessible. In a sophisticated cyber-hack, 10-million customers of Australia's number-two telecoms carrier Optus lost personal details in September 2022. Earlier, Intercontinental Hotel Group, the operator of hotel chains such as Crowne Plaza, Holiday Inn, Intercontinental and Kimpton, was targeted by an as-yet unknown threat actor in a

cyber-attack. Cybersecurity leader Sophos warns cyber-terrorism in the coming days as cyber-attacks globally have risen in frequency and severity in recent years.

Why this Havoc? How Hackers Make Money?

The cyber world is devastated by the demerits of this otherwise digital boom today. A young internet demographic is involved in cybercrime globally. Instead of harnessing the potential of this digital dividend, errant techies use cyberspace as the most amenable platform for outrageous activities like hacking and crime. Millions of youths are being lured into the shadowy world of cyber-terrorism. Ransomware, the eponymous malware, blackmails corporate biggies through dysfunctioning their computer systems for money as it infects a machine and then encrypts or scrambles files so they can no longer be used or read. The files are only decrypted when a victim pays a ransom through cryptocurrency. As hacking grows, like-minded hackers join hands to work in alliance. Some arrest the world's attention for good deeds like divulging any potential conspiracy or corruption. There are whistleblowers who leak classified documents of governments or high officials immersed in corruption. Such leaks are good for society. But most attract attention for their notoriety.

In the past couple of years, hackers have stolen sensitive and classified information from powerful countries and rammed home military strategies, judicial matters, major research findings, clinical trials, banking transactions and more. Ransomware is used with a worm, meaning that the infection of one computer can automatically affect an entire network. Ransomware is very infectious. Although ransomware is usually aimed at individuals, it now targets businesses for monetary gains. This virus quickly spreads to computers and then disables system applications for ransom. It locks up computers and holds a user's files for ransom. The cyber-extortion worm damages, disables or even blocks access to computer systems until a sum of money is paid to the hacker(s). Media reports say the May 12 hack was perpetrated by an international cybercrime gang Black Shadow. That hacking is a serious crime that has attested to the loss of more than $6.0 trillion as damage so far.

How Bangladesh Suffers in Cyberspace

We know the entire world is currently awash with strings of cyber thefts, with Bangladesh being one of the worst victims of the digital Armageddon. Many such cybercrimes and scams, information stealing, credit card frauds are going unreported in any corner of the world almost daily counting heavy financial losses. In 2021, more than 150 public and private organisations came under attack, showing their utter vulnerabilities, according to the BGD e-Gov CIRT. Of the attacks, vulnerability accounts for 63.2%, intrusion or hackings 5.7%, malicious code 22.5% and abusive content 4.5%. The rest comprise fraudulence, intrusion attempts, service requests and information security. In an unstable global situation, Bangladesh is atop the list of countries at the highest risk of powerful Trojan attacks on state entities, banks and telecoms, according to a recent survey by anti-virus expert Kaspersky. It shows 3.69% of Kaspersky users in Bangladesh suffer Trojan attacks.

Cybercrime Trends: Who are Vulnerable?

Bangladesh has experienced a chain of back-to-back cyber-attacks by hackers and adversaries frequently in public and private organisations, be it government ministries, industries, businesses, banks, non-bank financial institutions, cardholders, insurance houses or telecoms carriers, and even individuals in recent times. The number of cybercrimes is also escalating as the country gained substantially in its 'Digital Bangladesh' journey in the era of digital transformation, fourth industrial revolution and artificial intelligence. But things still tell a different tale. This article endeavours to include some of the attacks that are a chilling reminder of how vulnerable we are to the merciless hackers and cyber-frauds. At the same time, such attacks forewarn us not to sit idle and safeguard national data resources and infrastructure from their filthy long arms.

Banks: A good number of public and private banks are currently in peril of unprecedented cyber-attacks, thanks to their indulgence and enforced idleness. Experts say a large percentage of digitally fragile banks are not taking precautionary measures to fend off the possible large-scale attacks and avert bigger financial loss. The malicious actors

behind such transborder invasion include not only increasingly daring criminals like the Carbanak group, which targeted financial institutions to steal more than $1.0 billion during 2013-18 period, but also states and state-sponsored criminal gangland, according to a 2021 IMF report. In June 2022, a banking institute here surveyed the situation of the banking sector as of 2020 and found nearly 52 per cent of banks at grave risk of cyber-attacks.

Plastic cards: Bank cardholders are losing credentials to cyber-criminals amid outrageous attacks on the banking system, causing experts to cite the situation as too alarming and sensitive, as frauds have been making forays to steal card-users' credentials and rob them. In its recent report, the BGD e-Gov CIRT said no debit/credit card is immune from cyber-attacks. Clients' precious data is being stolen for infected bandwidth of mobile operators. According to an estimate, 300-400 cardholders lose financially to cyber-attackers per month for contaminated bandwidth–the blood of network communication.

Telcos: Telecoms carriers Grameenphone, Robi, Banglalink and Teletalk in Bangladesh come under coordinated cyber-attacks almost every month, indicating their diluted network communications and showing their utter vulnerabilities to such malware infections. The end users—the gullible subscribers—are the ultimate sufferers. Network operators have had a significant rate of infections of malware like 'android.hummer', 'avalanche-andromeda', 'android.rootnik' and 'android.backdoor.prizmes'. State agencies concerned routinely call for telcos to maintain cybersecurity collectively through fortifying their network systems.

Cyber-trafficking: What worries Bangladesh and the world these days is cyber-trafficking. Trafficking in persons is being done in cyberspace aggressively. It so happens that human traffickers take to the digital boom of cyberspace and entice their gullible targets with so many promises before they are being smuggled abroad. Trafficking has witnessed a rise in popular social media networks like Facebook and TikTok in recent times.

Cyberbullying: The touch of communications technology has changed our life everywhere. Yet we see cyberbullying that takes place on social media, messaging platforms, gaming platforms and smartphones. Women are more victims of harassment and pornography in social media and men of mobile banking and ATM card hacking. Even more women are deceived during online shopping than men. Women and adolescents are increasingly falling prey to bullying, hacking, phishing, online violence and digital harassment. Their dignity, privacy and security are at stake. Trolling, abusing, threatening, stalking, voyeurism, body-shaming, defacing images, defaming, revenge porn and other forms of indecent representation of women are rampant in cyberspace.

Cybersecurity: What to do?

Bangladesh has achieved good progress in the era of digitisation. Due to a leap in the number of digital and IT-related crimes, the issue of cybersecurity has become a headache for government and private entities to stay protected against the criminal or unauthorised use of electronic data and make cyberspace safe. Cybersecurity is in an uproar as the volume, velocity and aggressiveness of cyber-attackers continue to grow. Bangladesh has been very vocal about digital security. It must include cyber-safety issues in academic curriculum and launch a mass campaign against cybercrime so that people get prepared to protect their identities in cyberspace and prevent such crimes.

Role of CIRT: The BGD e-Gov CIRT, which was born after the central bank's reserve heist to fight any fatal intrusions further, has been vigilant in monitoring the country's threat landscape and has played a critical role in sensitising stakeholders to the importance of cybersecurity. It routinely writes to all the key organisations, including important data infrastructure, requesting appropriate action to prevent such attacks in the coming days. It urges all to follow the 'Digital Security Protection Guidelines for Critical Information Infrastructure' and install/update anti-DDoS hardware and software, and set proper protection thresholds to keep all critical information infrastructure safe.

Be wary of phishing: Netizens must remain alert to stay safe online before falling prey to a phishing trap on the internet almost every day. They should be cautious about preserving any sensitive information and pictures regarding debit/credit card, ATM PIN, NID number, other passwords and important

documents. The netizens should give a second thought as to whether it is safe to store them in browse-worthy, internet-enabled handsets or emails.

User awareness: Information technology and cybersecurity have become an inseparable bedfellow amid an alarming rise of cybercrime over the years. Experts are investing time and energy in ensuring security from crimes like cyberbullying, blackmailing, fraudulence or phishing or slurs for character assassination. Security measures include network security, app security, internet security, information security, operational security, cloud security, endpoint security or data security. Netizens should be smart in using the internet for their cyber safety and protection, and be wary if an email directs them to enter any kind of credentials.

Locking digital doors: As part of increased cybersecurity precautions, Joe Biden has wittily asked private companies and organisations to "lock their digital doors", claiming that intelligence suggests its rivals are planning a cyber-attack on the United States. The UK cyber-authorities are also taking similar steps to stay safe. Experts suggest four essential steps or tips for netizens to follow in order to stay safe online. These are multi-factor authentication, strong password, regular software update and ways to identify phishing.

Cyber-insurance: Cyber-insurance can be introduced for virtual security as there is a direct relationship between cybersecurity and cyber-insurance in the wake of increased sophisticated cyber-attacks over the years globally. According to a Sophos report, 66% of global organisations surveyed were hit with ransomware in 2021. This challenge continues to grow. Optimising cybersecurity has become imperative for organisations.

Hotline against cyberbullies: Bangladesh Police have opened a dedicated hotline (+8801730336431) to help report online violence against, cyberbullying of and digital harassment of women. Victims can take action against obscene or abusive posts or pictures they receive on their social-media timeline, private message inbox or comments. They need to take screenshots of any indecent post or comment, gather links to the respective post and the profile of the abuser, and then report to their nearest police station.

Robot for women's cyber-safety: Another major breakthrough is a special robot of the police cyber support for women that will ring an alarm in case of any emergency to protect female victims of cybercrime. An artificial intelligence (AI) tool or bot will take complaints from victims 24/7. Accordingly, the police will take protective action. Any victim can use this AI-controlled bot with a special code to lodge complaints.

What Experts Suggest?

Cybersecurity expert Tanvir Hassan Zoha suggests installing the ISO 27001 and the Payment Card Industry Data Security Standard to thwart the rampant cyber-threats, and help organisations manage and keep their information assets safe and secure. Experts suggest developing a well-built monitoring system as most banks have yet to build it properly. They also propose the introduction of a central cybersecurity alert system to protect key-point installations from cyber-attacks.

About cardholders' information piracy, they suggest that all the customers use verified and certified sites by different certified companies like Verisign while receiving their services that would help reduce such card fraud. Dr Md Mahbubul Alam Joarder, a professor at a technology institute, suggests stakeholders related to the banking ecosystem remain cautious to end such frequent card forgeries and protect the interests of their clients with the latest systems and solutions. The regulators concerned must play their appropriate roles in stemming such crimes. IT administrators of different public and private organisations can easily scuttle such attacks through writing six line commands in their systems.

Conclusion

As the use of internet technologies is increasing, so is cybercrime alarmingly. So, cybersecurity awareness is much more important today than any time before. It is time to curb cybercrime like phishing or ransomware attack, information piracy, cyberbullying, fraudulence, blackmailing and stealing of money online. It is high time to bring social networks under strict surveillance. The telecoms regulator BTRC's cybersecurity cell must act rightly to protect privacy and ensure security of all netizens. Skilled manpower and professionals should be in place for stronger cybersecurity

systems. Netizens should follow some netiquette while using the internet. They should dump those digital devices that pose security and privacy risks, and should not transact on public Wi-Fi or at cyber cafes and store any sensitive information on websites. IT professionals and cybersecurity analysts ask netizens to have strong passwords in order to protect their privacy and security as they come up with a rallying cry for caution to keep passwords of any type within the user. Each personal computer should have a strong firewall to block any unauthorised access while permitting outward communications. Based on intelligence reports, experts call on private companies and organisations to "lock their digital doors" as part of increased cybersecurity precautions. Bangladesh needs to explore the best possible ways to ensure digital security of the country through making people aware of its importance as the world is becoming more complex with the advent of newer technologies. The world is going through a very critical time. Well-thought-out plans can only tackle well-orchestrated cyber-threats and attacks. The faster the better for Bangladesh to stay cyber-smart.

Sources of Information and Acknowledgement

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(Facts and figures have also been garnered from a handful of news outlets, and anti-virus and cybersecurity agencies to make this article more analytical, informative and resourceful.)

The Impact of Institutional ownership on CEO compensation among the NBFIs: Bangladesh Perspective

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ABSTRACT

The connection between institutional ownership and CEO compensation has been studied in this paper. In this context, the authors use the data of the non-bank financial institutions (NBFIs) working in Bangladesh from 2010-2019. The research finds that NBFIs with a higher institutional ownership concentration pay substantially higher CEO compensation than comparable NBFIs. The results are robust to the multifaceted fixed effects regression and alternative measurement models. The results further show that pay premiums are attributable to the ownership concentration and agency theory. Institutional owners prefer to avoid agency problems through rewarding higher CEO compensation.

KEYWORDS

Institutional Investors, CEO Compensation

JEL CODE

G32, G39

Introduction

Considering different theoretical and empirical perspectives, institutional ownership as one of the important determinants of CEO compensation has been frequently examined with varied results in both developed and developing markets (Davis & Thompson, 1994; Core, Holthausen & Larcker, 1999; Chhaochharia & Grinstein, 2009; Sheikh, Shah & Akbar, 2018 and Ullah, Jiang, Shahab, Li & Xu, 2020). Unlike individual investors, institutions investors have a legitimate fiduciary authority to take preventative action as they invest "other people's money", e.g. influencing CEO pay to gain economy of scale & safeguard their investments from potential devaluation (David et al, 1998). Shareholder's advocacy, voting rights, capacity to influence management and election of board members are some of the formal and informal mechanism used by large institutional investors to protect their investment (Dong & Ozkan, 2008). Additionally the study of (Lin & Fu, 2017) illustrated that, the term "institutional investor" refers to a diverse set of companies which includes mutual funds, private & public pension funds, banks etc. with varying degrees of power to supervise management and influence CEO compensation. In several studies e.g. (Heard & Sherman, 1987), (Ferreira & Matos, 2008), (Maranho, Bortolon & Leal, 2020) it appears that two-dimensional relationship between institutional ownership and firm, that is an investor and business, may exert countervailing pressures on institutional investors in the context of determining CEO compensation.

The literature prior mid-1980s (Davis & Thompson, 1994) illustrated that in the era of dominant individual ownership, shareholders had no control over deciding executive pay. However, relative to 1965, institutional owners and their representatives have become more vocal regarding executive compensation, both in terms of levels and forms when institutional ownership started to replace individual ownership (Coffee, 1991). In addition, "institutional owners" are viewed as the most effective tool to influence corporate governance (Khan, Dharwadkar & Brandes, 2005). The potential effect of increased institutional ownership on various corporate policies have examined in several studies. Several studies have examined the potential influence of increased institutional ownership on various corporate practices e.g. (Holderness, 2003), (Yan & Zhang, 2009), (Becker, Cronqvist & Fahlenbrach, 2011), (Chichernea, Petkevich & Zykaj, 2013), (Knyazeva, Knyazeva & Kostovetsky, 2018) (Ward, Yin & Zeng, 2019). By recent literature e.g. (Firth, Fung & Rui, 2007), (Chen, Ezzamel & Cai, 2011), (Dasgupta, Fos & Sautner, 2020) institutional ownership has received considerable attention as a factor affecting CEO pay.

Although, In the context of developing countries, there is minimal literature on the ownership structure and CEO compensation to reflect how first-world theories and concepts should expand on their empirical findings because developing economies vary from other markets because of their complex legal, financial, social, and institutional environments (Jiang & Kim, 2015). In Bangladesh, CEO pay in financial institutions becomes a profitable investment for the shareholders (The Business Standard, 2020) that shows the ever-growing importance of CEO compensation. However, compensation and incentive mechanisms are not well explained in Bangladeshi financial

institutions. Therefore, the goal of this study is to add to the existing empirical literature by examining the impacts of institutional ownership on CEO pay.

This study investigates the CEO compensation with the theoretical insights drawn from the agency theory where Jensen & Meckling (1976) emphasizes in protecting the interest of shareholders by controlling company management efficiently and effectively where corporate governance structures (including institutional ownership) plays a significant role. "Institutional owners" who carry a large amount of money from other individuals are expert and proficient in company dynamics and can effectively control executive's pay (Jensen & Meckling, 1976). Previous research in developed countries (e.g., Fernandes et al. 2012; Croci, Gonenc & Ozkan 2012) show that increased institutional ownership affect CEO compensation, improves the quality of firm monitoring, and ties CEO compensation to company performance (Hartzell & Starks 2003). Studies (e.g., Jiang & Kim, 2015) in the sense of developing countries, however, do not disclose any role of institutional ownership in reducing agency issues due to minor shareholders stake and short-term interest. Further widening this discussion, this study intended to determine the intensity of impact institutional ownership have on Bangladesh's CEO payout, taking into account the empirical disparities between developed and developing countries.

The scope of this study are the non-bank financial institutions (NBFIs) working in Bangladesh. NBFIs start their journey in 1981, ten years after the independence. Industrial Promotion and Development Company (IPDC) is the pioneer in the sector. Following that, the number of non-bank financial institutions grows as more private, joint-venture, and state-owned firms join the sector. Due to the development of new fields of business operations such as leasing, term loan, housing and real estate finance, merchant banking, factoring, and so on, the importance of the non-banking sector is growing substantially (Ahmed & Chowdhury 2007). But the research on NBFI regarding ownership concentration remains entirely unexplored (Datta 2014). Against this backdrop, another relevant fact is that most NBFIs have institutional owners in Bangladesh (mostly other banks and business conglomerates). NBFIs operating in Bangladesh have a specific ownership structure where effective control is exercised by institutional owners. Together, the authors hope to analyze whether the type of owner has an impact on the CEO's use and scope of performance-related pay. This study contributes to extend the theoretical findings and tried to find out the magnitude of the relationship between institutional ownership & CEO compensation in a developing country context.

The research takes into account of NBFIs operating in Bangladesh, covering annual data between 2010 and 2019. The company-level dataset is combined with macroeconomic data (inflation and GDP growth). This study sample does not consider the NBFIs who suffer from some financial and other image crises spotting the daily newspapers (The Daily Prothemo Alo and The Financial Express). The method of data analysis starts with several data cleaning rounds that remove any possible errors and outliers. Consisting with recent studies the authors find positive and significant impact of institutional ownership on CEO compensation (e.g., Ullah et al., 2020). This impact not only statistically significant but also economically meaningful. Even after adjusting for time effects and alternate definitions of institutional ownership, the finding remains true. This review refers in the following distinct ways to the current literature. First, this study's empirical results indicate that institutional ownership has a significant positive impact on the compensation of CEOs. Alternatively, the report supports future research to conduct the ownership impact of the channel on CEO pay.

The paper has definite structure. Section two addresses the theoretical and literature review. Section three focused on methods and data. The empirical findings are given in section four, while the analysis concludes in section five.

Theoretical and Literature Review

Agency theory enunciates that as a tool of minimizing agency conflict institutional ownership plays a key role by becoming a monitoring device (Jensen & Meckling, 1976). As per the Agency theory CEOs are the shareholders' agents and their primary responsibility is to optimize and protect the interests of the shareholders ((Jensen & Meckling, 1976). However, when CEO wants to maximize their interest rather than the wealth of shareholders, conflict of interest occurs (Donaldson & Davis, 1991). It becomes difficult for the institutional owners to sell shares at the time of firm's bad

performance due to future stock price depreciation, as institutional owners hold the substantial aggregate ownership of the company (Cornett et al, 2007). Due to the difficulty in identifying credible alternative investments and departing from them, institutional investors have been given an incentive to work for the greater interest of the investors influencing the level and mix of CEO compensation packages (Gillan & Starks, 1998). According to power perspective e.g. (Bathala, 1996), (Beatty & Zajac, 1994), (John & Senbet, 1998), institutional investor engagement allows experienced experts to monitor assets, minimizes top management's control on boards and allows more effective remuneration than fragmented individual owners. Prior theoretical and empirical studies; (e.g. (Shleifer & W. Vishny, 1986), (Shleifer & W.Vishny, 1997), (Chizema, Lio, Lu & Gao, 2015), (Ullah, Jiang, Shahab, Li & Xu, 2020) suggested that best corporate governance practices should be followed to minimize the agency problems and optimize the shareholders' wealth. In this regard, a large spectrum of previous studies, e.g. (Burkart & Panunzi, 2006) consider that institutional investors (also known as block shareholdings) can be a tool to mitigate the free-rider issue with minimal potential agency costs and make sure that management behaves for the greater interests of shareholders. Institutional investors can also provide effective management oversight, which can have an impact on key corporate strategies by deciding best CEO compensation packages (Gillan & Starks, 2000). Some of the theories e.g. (Shin & Seo, 2011), (Janakiraman, Radhakrishnan & Tsang, 2010), (Gallagher, Smith & Swan, 2006), predict that the fiduciary responsibilities, conflicts of interest and asymmetric information that institutional investors face may limit institutional investors' ability to supervise CEO pay. For example, mutual funds and public pension funds have different monitoring objectives and capacities which results in different CEO pay policies in their portfolio companies (Shin & Seo, 2011).

The role of institutional investors in deciding CEO compensation has been studied from two perspectives. Some researchers found homogenous impact of institutional investors on CEO pay structure. According to (Hartzell & Starks, 2003), institutional investors could motivate the companies to pay their CEOs more performance-based compensation by creating a substantial and constructive relationship between the CEO performance and the level of CEO pay. As per the report on US firms, (Fernandes, Ferreira, Matos & Murphy, 2012) reported a positive relationship between CEO pay & institutional ownership with the fact that institutional investors, both in the US and around the world, are advocating for a greater fraction of equity-based compensation. Similarly, the influence of institutional ownership on CEO compensation in continental Europe was examined (Croci, Gonenc & Ozkan, 2012), where institutional ownership and CEO pay show a positive and substantial relationship. On the other hand, some researcher argued that the level of CEO compensation has a negative relationship with institutional investor concentration. e.g. (Hoskisson, Castleton & Withers, 2009), (Hadani, Goranova & Khan, 2011), that is, after adjusting for business size, industry, investment possibilities, and recent performance, firms with larger institutional investors concentration had lower management remuneration. Furthermore, institutional ownership and CEO pay will be expected to be connected negatively, that is, large owners or institutional block holders may support higher behavior-based compensation and minimize results-based compensation (Eisenhardt, 1989). Although, the increasing participation of institutional investors in the continental European capital market shows few indications of their role in deciding the compensation of CEOs (Elston & Goldberg, 2003).

Though there are mixed literature regarding influence of institutional ownership on CEO compensation determination, a recent study by (Gallagher, Smith & Swan, 2006) found that increased institutional influence increase compensation level of CEO while reducing total pay-for-performance sensitivity. Accoring to (Gillan & Starks, 2003), large institutional investors have a direct or indirect effect on the firm by owning or trading shares in the investee company. The stock price may fall because of these investors' heavy selling or it might be misinterpreted as negative news, causing additional investors to sell, leading to a drop in the stock price and increase in cost of capital (Parrino, Sias & Starks, 2003; Baysinger, Kosnik & Turk, 1991; Hutchinson, Seamer & Chapple, 2015). Thus, large institutional ownership leads into less CEO compensation packages. While some researchers e.g. (Shin & Seo, 2011), (Johnson et al, 2010), classified institutional investors into two categories- pressure resistant institutional investors & pressure sensitive institutional investors– and

argued that the contribution of institutional investors are not equal for monitoring CEO pay structure. In research on block ownership & CEO compensation, this categorization of (Brickley et al, 1988) has been widely used. In (Brickley et al, 1988), (Rubach & Sebora, 2009) and many more literature, banks, nonbank financial institutions & insurance companies considered as pressure-sensitive institutional investors (they have an impact on the portfolios of companies with whom they deal business) and mutual funds, pension funds, endowments, and foundations (they are less likely to have a business relationship with firms) considered as pressure resistant institutional investors. Pressure-sensitive institutional investors may be better able to form commercial relationships with their investee companies and that is why less prone to confront management in fear of going out of business (Hutchinson, Seamer & Chapple, 2015). Additionally, other findings indicated that block ownership does not generate adequate supervision since most European organizations are family members owned (Gillan & Starks, 2003). According to theoretical and empirical evidence, Hill and Snell (1989) imply that institutional investors are advantageous to smaller and less sophisticated investors in a way that includes active oversight at a competitive cost, voting control, shareholder activism, the appointment of board members, and their ability to influence individual stakeholder management decisions.

Finally, (Cubbin & Leech, 1983); (Carleton, Nelson & Weisbach, 1998) suggested that in comparison to other major individual investors, large institutional shareholders have individual and collective expertise to influence the management in a manner to neutralize the interests. However, researchers revelation from power perspective is that institutional investor concentration decreases the influence of top management on boards that set compensation (Bathala, 1996) and from an expertise perspective, large institutional investors have shares in a variety of companies and employ competent professionals to manage their investments, making them more successful in influencing compensation arrangements than dispersed individual owners (Khan, Dharwadkar & Brandes, 2005).

So combining the above assertion of agency theory arguments with ownership concentration facets of institutional investors e.g. (Johnson & Greening, 1999), (Wardhana & Tandelilin, 2011), (Bethel & Liebeskind, 1993) the authors may derive the idea that companies with higher institutional ownership may have greater authority to control managerial pay. In the context of Bangladesh, the impact of institutional directorship on corporate decisions like CEO pay is ambiguous. In this regard, the specific research interest of this study is to examine the impact of institutional ownership on CEO compensation. So, the main research question of this study is: Do institutional shareholders have any significant impact on deciding CEO compensation? From this question and literature review, this study develops the hypothesis that is-

H_0: There is no relationship between institutional ownership as determinant of CEO compensation.

H_1: There is relationship between institutional ownership as determinant of CEO compensation.

Methodology

This study utilizes the firm-level panel data of the sixteen (16) listed NBFI's for the duration between 2010 and 2019. The data is hand collected from the annual reports of those selected NBFIs. The data The authors exclude NBFIs who suffer from some financial and other image crises spotting the daily newspapers (The Daily Prothemo Alo and The Financial Express). Since firms with image crises seldom disclose the CEO compensation. The authors extracted the variable-related data from the annual report of those selected NBFIs. Data has been analyzed using STATA software.

CEO Compensation

CEO compensation refers to the overall amount of money paid to CEOs.; includes the base salaries, bonuses, and commissions (Conyon & He, 2012), (Conyon, He & Zhou, 2015), (Ullah, Jiang, Shahab, Li & Xu, 2020). To measure CEO remuneration many authors collected data on cash and equity-based compensation e.g. (Croci, Halit & Ozkan, 2012). Base salary and bonuses are part of the cash compensation package whereas equity-based compensation includes share options, long-term incentive plans (LTIPs) and the value of shares. This study did not consider equity-based compensation of the NBFIs because the data for most NBFIs is either missing or inadequate to undertake panel research throughout the specified time period.

Institutional Ownership

Institutional ownership refers the existence of institutional investor in a firm's equity structure (Guthrie et al., 2012). To measure the independent variable (institutional ownership) the authors rely on previous literature e.g. (Conyon & He, 2011), (Wen, Xu, Chen., Xia & Li, 2019), (Ullah, Jiang, Shahab, Li & Xu, 2020) and measured institutional ownership as the entire proportion of outstanding shares held by various institutions such as insurance companies, banks, qualified foreign institutional investors (QFIIs) social security funds and all other institutions at the end of the firm-year. In Bangladesh, private commercial banks are very prominent institutional investors of NBFIs.

Control Variables

Prior research e.g. (Firth, Fung & Rui, 2007) (Chizema, Lio, Lu & Gao, 2015), (Conyon, He & Zhou, 2015), show that institutional ownership in case of deciding executive compensation are controlled for some variables representing board of directors characteristics, firm characteristics, macro-economic variables and CEO characteristics.

The firm characteristics variables include board diversity (BDIV), board size (BSIZ), return on assets (ROA), firm size (SIZE), leverage (LEV), Market to book ratio (MTB) & Tobin's Q (Tobin's Q). Earnings before interest and taxes are divided by total assets to get the return on asset (ROA). Leverage is calculated by dividing total debt by total assets. The natural log of a company's total assets is defined as 'SIZE.' The market to book ratio is calculated by dividing the current market price per share by the book value per share. Several studies e.g. (Wright, Ferris, Sarin & Awasthi, 1996) measures growth opportunities with Tobin's Q that is the firm's entire market value divided by the firm's total asset value. Prior studies such as (Khan, Dharwadkarb & Brandes, 2005) and (Ullah, Jiang, Shahab, Li & Xu, 2020) measures board size (BSIZ) and board diversity (BDIV) to measure the board characteristics.

'BSIZ' is measured by the total number of board of directors in the firm & 'BDIV' is measured by the total number of female directors divided by total directors. According to Ullah et al., (2020), the authors measure CEO with foreign exposure (CFEX) which dummy variable. If the CEO has worked or studied in a foreign country, it is equivalent to 1; otherwise, it is equal to 0. The authors also control for macroeconomic variable inflation (INF) & GDP growth (GDP_GROWTH) which are extracted from the World Bank database.

Econometric Model

Conyon et al. (2019) used the following model to analyze the relationship between international exposures and CEO compensation for all firms in the UK's FTSE 350 index between 1999 and 2015.

$$CEOPAY_{it} = \alpha + \beta * \text{Institutional Investor}_{it} + \Sigma\lambda * \text{Control Variables}_{it} + \Sigma year_{it} + \varepsilon_{it}$$

The authors employed a similar model in this study as well. The dependent variable $CEOPAY_{it}$ is the natural logarithm of the CEO compensation for the Hypothesis. Institutional Investor (BLOCK) defines institutional ownership as the amount of the total proportion of outstanding shares owned by various institutions. Control Variables include a collection of control variables at the firm stage. In addition, to control for macroeconomic shocks, a selection of year dummies are included. However, the causal impact of international experience on CEO compensation is complex to describe statistically. Further, the lack of an appropriate experimental design that would require the random allocation of NBFIs to treatment and control groups, which in CEO compensation is unusual in general and impossible (Oxelheim et al., 2013) makes it difficult to define and ensure the robustness of institutional investors' causal impact on CEO compensation. However, the OLS estimation suggested here, identical to Conyon et al. (2019), implies that the involvement of institutional investors is exogenous. The authors further utilize fixed-effects regression models and alternative measurement for institutional investors to check the robustness of the findings.

Results and Discussion

Summary Statistics

This paper starts with the summary statistics before conducting the multivariate regression analysis. Table: -1 shows the summary statistics of the study. The dependent variable, CEO PAY ranges from BDT

16.5 million to BDT 17.5 million with a mean value of BDT 9.66 million per annum. Figure-1 also reports the increasing trend of CEO compensation within the sample period. This indicates that the CEOPAY of the NBFI's is not producing any concentric results. On the other hand, the independent variable, BLOCK ranges from 0.545 to 0.933 with a mean value of (0.849) and also does not produce any convergent results. The control variables BDIV varies from 0 to 0.30 with a mean of 0.157. The BSIZ ranges from 8 to 15 with an average of 11.44. ROA ranges from -0.049 to 0.0789 with a mean value of 0.0209. LEV, the financial leverage shows the proportion of company assets that are financed through debt range from 0.698 to 0.941 with an average of 0.861. SIZE shows the natural logarithm of a firm's total assets which ranges from 3.707 to 5.059 with an average of 4.366. The firm's growth ratio (Tobin's Q) ranges from 0.0554 to 1.271 with an average value of 0.315. MTB ranges from 0.759 to 38.66 and CEOs with foreign experience ranges between 0 to1.

Table-1: Summary statistics

VARIABLES	N	mean	SD	min	max
CEO Pay	160	9660725	3604320	1652903	17500000
BLOCK	160	0.849	0.108	0.545	0.933
BDIV	160	0.157	0.0927	0	0.300
BSZI	160	11.44	1.577	8	15
ROA	160	0.0209	0.0154	-0.0495	0.0789
LEV	160	0.861	0.0582	0.698	0.941
SIZE	160	4.366	0.336	3.707	5.059
TOBIN'S Q	160	0.315	0.207	0.0554	1.271
MTB	160	4.562	5.351	0.759	38.66
FEXP	160	0.900	0.301	0	1

Figure-1: CEO Compensation Trend between 2010 and 2019

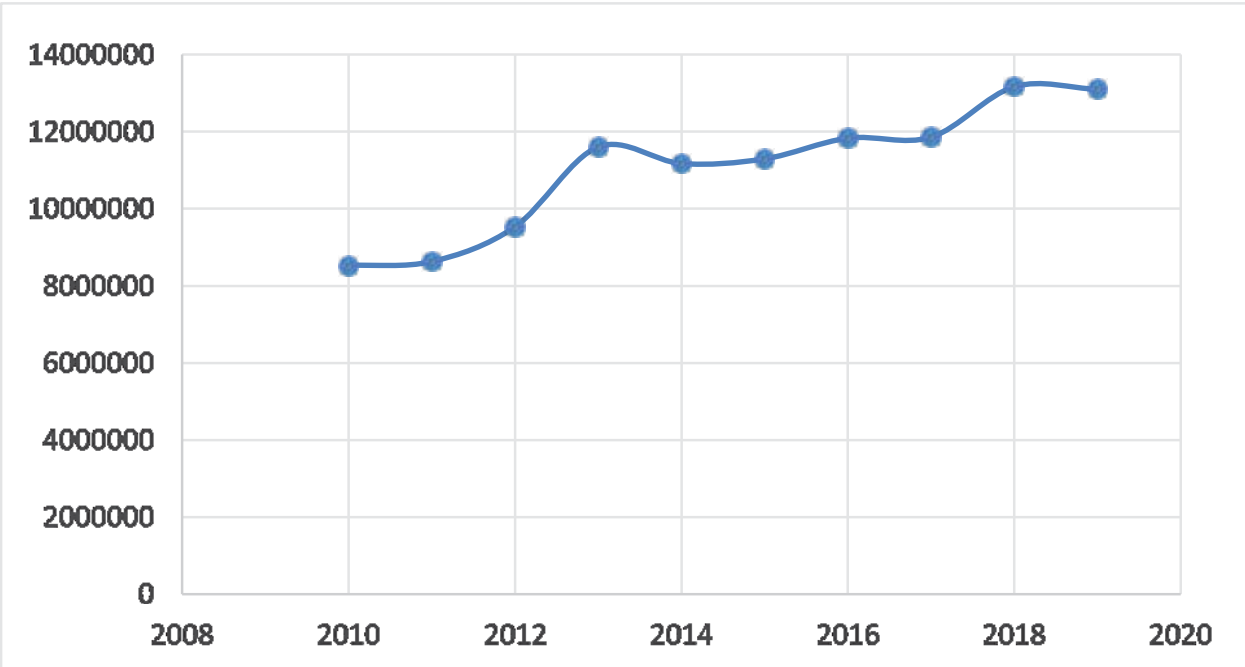


Table 2 reports correlations between the variables. There is a positive and highly ($p < 0.01$) significant correlation between BLOCK and CEOPAY (0.3970). It is observed that there is a high correlation between firm size and leverage (0.603, where $p < 0.01$), and also between Tobin's Q and ROA (-0.5562, where $p < 0.01$) which indicates that firm with greater profitability tends to have greater growth opportunities. As expected, the correlation between CEO with foreign exposure and CEO pay is also considerably high (0.4445, where $p < 0.01$). The correlation matrix is consistent with the research hypothesis.

Table-2: Correlation Matrix

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
(1)CEOPAY	1									
(2) BLOCK	0.397***	1								
(3) BDIV	-0.002***	-0.378***	1							
(4) BSIZE	-0.307***	-0.139	-0.373***	1						
(5) ROA	0.147	0.218	--0.128	-0.099	1					
(6) LEV	0.105	-0.071	-0.093	-0.137	-0.375***	1				
(7) SIZE	0.591***	0.240***	0.035****	-0.335***	-0.131	0.603***	1			
(8) Tobin's Q	-0.276**	0.071	-0.219 -**	-0.001	0.556***	-.383 ***	- 0.455*****	1		
(9) MTB	0.0538	0.1600	-0.053	-0.288***	0.323***	-0.003	0.086	0.545***	1	
(10) FEXP	0.4445***	-0.1952**	0.370*****	-0.093	-0.065	-0.062	0.240**	-0.218**	0.003	1

Regression Analysis:

Table 3 shows the regression coefficient estimates. Model-1 shows that except MTB, all coefficients are highly significant. The R-square value of this model is 0.640 (p=0.000), which indicates that the model is statistically significant. Alternatively stated, 64% of the changes in CEO compensation can be explained by both independent and control variables. This paper hypothesizes that there is a positive relationship between institutional ownership and CEO compensation among the listed NBFIs of Bangladesh. The coefficient estimates of BLOCK are 0.49 and statistically significant at 1%. The effect is economically meaningful. Hence, it confirms a significant relationship between institutional ownership and CEO compensation. Consistent with prior studies (i.e. (Jiang & Kim, 2015), (Wen, Xu., B. Chen., Xia & J., 2019), (Ullah, Jiang, Shahab, Li & Xu, 2020), the findings have policy implications which is firms with a high level of institutional ownership are more inclined to increase CEO compensation.

The table -3 further reports that the control variables coefficients have the expected signs. For example, larger and profitable firms are more likely to pay higher CEO packages. In column (2), the authors control for macroeconomic variables e.g., inflation, GDP growth. This helps us to eliminate the omitted variables bias and rule out the possibility that CEOPAY is guided by inflationary pressure and or economic growth. Consequently, the coefficient of institutional ownership increases to 0.514. It remains consistently significant, both statistically and economically. The authors also include year-fixed effects in column (3) to capture the unobserved year effects that could influence the CEOPAY. Although the coefficient becomes negative, it remains statistically insignificant and economically not meaningful.

Table 3: Baseline Results (Impact of Institutional ownership on CEO Compensation)

Independent Variable: ***BLOCK*** Dependent Variable: ***CEOPAY***

VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3
BLOCK	0.49***	0.5137***	-0.0189
	(0.13)	(0.1357)	(0.1493)
BDIV	-0.36***	-0.3398***	-0.6632***
	(0.13)	(0.1281)	(0.1685)
BSZIE	-0.02***	-0.0216***	-0.0090
	(0.01)	(0.0068)	(0.0081)
ROA	2.77*	3.6099**	3.5954***
	(1.56)	(1.5569)	(0.8597)
LEV	-0.44**	-0.2579	-0.7368**
	(0.22)	(0.2506)	(0.3331)
SIZE	0.23***	0.1717***	0.5992***
	(0.04)	(0.0564)	(0.1164)
Tobin's Q	-0.21**	-0.1678*	-0.0343
	(0.10)	(0.0920)	(0.1019)
MTB	-0.00	-0.0014	-0.0086**
	(0.00)	(0.0023)	(0.0033)
FEXP	0.27***	0.3018***	0.2435***
	(0.04)	(0.0402)	(0.0449)
INF		-1.5517*	-0.3019
		(0.8755)	(0.7044)
GDP_GROWTH		1.2311	-3.9279*
		(1.7108)	(2.0629)
Constant	5.96***	6.019***	5.2294***
	(0.30)	(0..513)	(0.4210)
Observations	160	160	160
R-squared	0.640	0.655	0.608
Year_FE	No	No	Yes

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.01

Robustness Check and Alternative Analysis:

The authors conduct two sets of robustness tests for validating the baseline regression results. The paper utilizes the year-fixed effects to control for any unobserved year-wise heterogeneity. Moreover, there is employed board ownership (BOWN) as an alternative measure of institutional ownership. Table 4 shows the estimates of regression coefficients. Model-1 shows that except MTB, all are highly significant. The R-square value of this model is 0.636 (p=0.000), which indicates that the model is statistically significant. The results remain consistent with the baseline model. A significant and considerable correlation between board ownership and CEO compensation has been observed. The coefficient estimates of BOWN are 0.219 and statistically significant at 1%. The effect is economically meaningful. As a result, it confirms the existence of a significant correlation between institutional ownership and CEO compensation.

Table 4: Alternative Analysis (Impact of Institutional ownership on CEO Compensation)

Independent Variable: ***BOWN***	Dependent Variable: ***CEOPAY***		
	(1)	(2)	(3)
VARIABLES	Model 1	Model 2	Model 3
BOWN	0.2187***	0.2156***	-0.2320
	(0.0415)	(0.0457)	(0.2897)
BDIV	-0.7121***	-0.7170***	-0.6528***
	(0.1323)	(0.1350)	(0.1609)
BSZIE	-0.0216***	-0.0238***	-0.0094
	(0.0065)	(0.0065)	(0.0081)
ROA	3.6668**	3.8904**	3.5556***
	(1.5824)	(1.5125)	(0.8588)
LEV	-0.4895**	-0.4282*	-0.6743**
	(0.2125)	(0.2240)	(0.3392)
SIZE	0.2845***	0.2658***	0.6180***
	(0.0431)	(0.0507)	(0.1177)
Tobin's Q	-0.3020***	-0.2898***	-0.0278
	(0.1026)	(0.0992)	(0.0993)
MTB	0.0018	0.0019	-0.0081**
	(0.0029)	(0.0029)	(0.0034)
FEXP	0.2175***	0.2236***	0.2382***
	(0.0359)	(0.0366)	(0.0428)
INF		-1.4331*	-0.2685
		(0.8290)	(0.6969)
GDP_GROWTH		-1.6485	-4.1662**
		(1.8045)	(2.0800)
Constant	6.2453***	6.4960***	5.1513***
	(0.2419)	(0.2639)	(0.3553)
Observations	160	160	160
R-squared	0.6364	0.6458	0.6097
Year_FE	No	No	Yes

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.01

Similarly, the control variables coefficients have the expected signs. For example, larger and profitable firms are more likely to pay higher CEO packages. In column (2), the authors control for macroeconomic variables e.g., inflation, GDP growth. This helps to eliminate the omitted variables bias and rule out the possibility that CEOPAY is guided by inflationary pressure and or economic growth. Consequently, the coefficient of political risk increases to 0.212. It remains consistently significant, both statistically and economically. The authors also include year-fixed effects in column (3) to capture the unobserved year effects that could influence the CEOPAY and the result becomes negative and insignificant.

Conclusion

The relationship between institutional ownership and CEO compensation is investigated in this study in line with the agency theory, where this paper expects institutional ownership to be an important instrument for enhancing corporate governance and quality monitoring. NBFIs from Bangladesh are the focus of this research. The authors hypothesize that a positive association between institutional ownership and CEO compensation and found that ownership has a favorable and important effect on CEO compensation, consistent with hypothesis and other recent studies. Even after multifaceted fixed effects regression and alternative institutional ownership measurement, the findings remain accurate. One interesting explanation is that institutional owners and boards of directors place a greater emphasis on minimizing agency problems in order to better safeguard the interests of shareholders through higher CEO compensation packages. This study can be further extended by incorporating more governance and compensation variables. Future studies will also discuss the channels influencing the CEO compensation agreement by the ownership structure. However, by disclosing the determinants of CEO compensation in an emerging market like Bangladesh, this study tried to expand the previous literature.

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