

Measuring the Financial Stability: A Focus on the Banking Sector of Bangladesh

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Abstract

The study gives concentration on the stability of financial system. A well-established method is selected to find out the composite financial stability index. Along with this, the study explains the riskiness of the country based on economic risk, political risk, and financial system risk. The regulators, policymakers, and the government should pay attention to these factors that are responsible for increasing country risk and make the financial system unstable. The study will assist the policymaker and the regulator for their better understanding of financial structure that will lead them to update the existing rules or formulate new reporting conventions. In the last two decades, the global financial crisis has created concerns about the stability of the economy's financial system and its dependence on other sectors of the economy. The study encapsulates the major indicators of the financial system and quantitatively showed its position over the period. It is found that the growth of composite index sharply increased in the mid of 2008, but among the indices, it experienced stress due to high inflationary pressure and high oil price in the global market. It is found that the financial system of Bangladesh was comparatively stable during the period 2012 to 2016.

Keywords: Financial Stability, Country Risk, Banks, Bangladesh.

1. Introduction

Financial stability is the position of the financial system or states of the art which control the economic shocks and continue its normal operation over the period. In the last two decades, the global financial crisis has created concerns about the stability of the economy's financial system and its dependence on other sectors of the economy. Earlier, the central bank and the banking supervisors emphasize the risk of separate banks solvency and liquidity rather than the entire banking system. The focus has been shifted from micro-prudential to macro-prudential levels of financial stability over the years, usually marked by lack of excessive instability, stress or crisis in the financial system. Especially after the global financial crisis in 2008-09, central banks have a major target of ensuring the stability of the financial system worldwide. In fact, financial stability is a condition that is involved in financial system-financial intermediaries, market and market infrastructure - are capable of maintaining financial risk and developing a financial imbalance, thereby reducing the chances of interference in the financial intervention process is significantly intense savings allocation in profitable investment opportunities.

The economic stability for both national and international arena depends on strong governance, sound regulation and vigilant supervision of the financial system. Nowadays, banking sector as a whole is encouraging to practice the ethos of risk assessment and contemporary issues relating to the global economy in their norms to tackle the unexpected circumstances of the economic consequences of Bangladesh. The regulatory bodies are working for the betterment of the economic development and stabilizing the financial crises by controlling microeconomic and macroeconomic forces. However, the western countries are facing a complex set of challenges after the financial crises, but Bangladesh remained in a better position due to lower foreign investment in the global economy. Due to the recent macroeconomic consequences, the global economy falls under pressure. These are:

- Policies implemented after the US election
- Brexit issue
- Rise of sovereign bond yield, especially in developed countries
- Rapid credit expansion policy implementation in China
- Gradual reduction tendency in global trade
- Vulnerable sovereign debt in Euro area

These factors are tremendously affected the world economy and make the financial sector imbalance. By hook or by the cook, Bangladesh can set their position against global economic shocks. In 2016, the real GDP growth was more than 7% while the inflation rate was within the target of 5.8%. Although, there was a negative trend of inward remittance and moderate export growth, but they hold sufficient amount of foreign exchange reserve to cover up eight months' of import (Stability Report, 2016).

2. Objectives of Financial Stability

Although there is no compromise on determining and measuring financial stability, some central banks around

the world have started to assess the risks of financial stability through the various indicators and indices, which are included in their periodic financial stability report (FSRs). To assess the limitation of the financial system, the formula for measuring the stability through some types of indices, has begun to be recognized as a part of primary alert indicators. The International Monetary Fund (IMF) publishes "Global Financial Stability Reports" regularly evaluates the strength and weakness of financial system based on the various indicators and indexes. Like other central banks, the Bangladesh Bank is publishing a financial stability report which includes some financial system indicators and stress testing that can signal financial strength and weaknesses of the financial system. Distinctive variables and indicators are helpful in analyzing the strengths and weaknesses of a financial system, but various research efforts have been attempted to develop joint indicators, which can be useful to policymakers to carry out any action based on vulnerability signals. Some central banks, such as the Reserve Bank of India and Central Bank of Sri Lanka, have published a periodic report on financial stability, which included an overall index; consist of some sub-indexes, indicating a level of coordination of banking and financial services. There is no acceptable single measure or indicator for the firmness of the financial system, but central banks, depending on their financial and economic conditions, adopt different methods for indexing their financial stability, providing information and risks of vulnerability. In this backdrop, building a joint/ collective financial stability index can be a timely idea on an experimental basis. The objectives of financial stability are given below:

- i. To keep the banking operation smoothly so that it can continue without any interruption.
- ii. To attain public confidence that accelerates the growth of business
- iii. To safeguard the depositors, who are the participant of banks funding
- iv. To assist in protecting public money
- v. To protect sudden disruption of financial intermediation
- vi. To increase the investor's faith as they mobilize the funds for economic cycling
- vii. To ensure the effective and efficient of prevailing rules and regulations those are implemented for better performance.
- viii. To help in steady economic growth.

3. Measurement of Financial Stability

Following Cheang and Choy (2011), the Aggregate financial stability index (AFSI) was created for the financial system of Bangladesh. They created Macao's Aggregate financial indicators based on three sub-indices, these are - i) Financial Stability Index (FSI), ii) Financial Vulnerability Index (FVI) and iii) Regional Economic Climate Index (RECI). However, there have been some changes in creating AFSI for Bangladesh based on the availability of information and some other practical considerations. The AFSI also employs a comprehensive framework of the basic set of FSIs recommended by the IMF (2006), recommended to monitor the firmness and stability of the financial sector of its member countries. The original set indicator is a small set indicator which is widely applicable to operationally and effectively monitoring the banking system's synchronization and vulnerability, while there are some additional sets of FSIs which are encouraged by the IMF.

The recognition of the FSI statistical requirements among the international community came out of the financial crisis of 1990s. A recent review shows that many IMF member countries have faced financial crisis which often causes severe economic disruptions. The significant cost of these crises have both directly (i.e. the cost of recapitalizing of the deposit takers) and indirect (such as the loss of real economic activity), mainly highlight the need for a development of higher frequency-statistical to help policymakers for macro-prudential analysis, which have the strengths and weaknesses in their country's financial system. Such an analysis can constitute the basis for taking action to prevent the crisis from occurring.

Gadanecz and Jayaram (2011) reviewed the measurement of financial stability developed by the central bank, researchers and the International Monetary Fund (IMF) worldwide, and usually summarize the analyses used in prior studies; what they measure, as well as their signal characteristics. They have identified some important indicators under the six sectors of the economy, to study the stability of the economic system, where the sectors are the real sectors, the corporate sector, the household sector, the external sector, the financial sector and the financial markets.

Cheang and Choy (2011) showed some elements of macro-prudential analysis to evaluate the stability of the economic system, which includes macroeconomic data (price, exchange rate etc.), market-based data (stock price, credit rating), financial system data, structural information (that is, relative size and ownership of the corporation) and qualitative information (i.e., value agreed).

Previous researchers on the financial system are based on initial warning indicator methods for currency and the balance of payment crises for the banking crisis. DemirgucKunt and Detragiache (1997) use a multivariate Logit model to identify the determinants of the banking crisis, such as slow GDP growth and high inflation, sudden capital outflow, low liquidity in the banking sector, a significant portion of private sector debt, past credit growth, etc. Kaminsky and Reinhardt (1999) identify the primary warning index of twins (banking

and balance of payment) crises, such as credit growth and equity pricing. Goodheart et al. (2006) stated financial crisis monitoring could efficiently do as the profit index of the banking sector and with the probability of default.

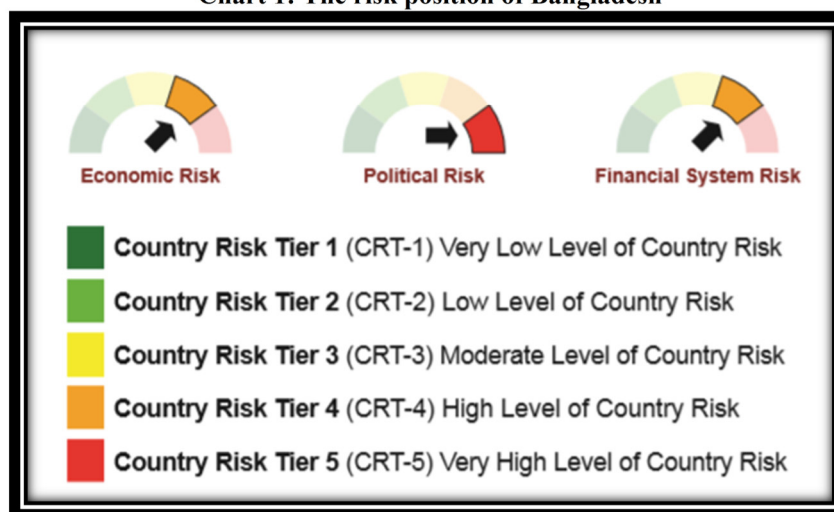
The Reserve Bank of India regularly publishes financial stability report, in which there are overall indicators based on the six sub-indices of the financial soundness index. The sub-indices are: (i) the ratio of Capital to Risk Weighted Assets, (ii) leverage ratio, (iii). Quality of the overall asset, (iv) profitability, (v) liquidity and (vi) efficiency. Central Bank of Sri Lanka publishes regular financial stability report, includes an aggregate banking soundness indicators based on six sub-indices which are (I) the ratio of Capital to Risk Weighted Assets, (ii) non- performing loan ratio, (iii) profitability, (iv) liquidity, (v) efficiency and (vi) interest rate and foreign exchange risk.

Cheang and Choy (2011) build an overall indicator of the Macao banking sector, which indicates the status of its stability in the context of the early warning system (EWS), which creates as the average of a specific average of the specified index of various aspects of Financial Stability. Bank Indonesia is using financial stability indicators or FSI to evaluate the elasticity of the financial sector since 2007. The maximum point limit for FSI was 2.00 when the global crisis stood at Indonesia FSI peaked at 2.43 in November 2008 and, above the 1997-1998 crisis, FSI was ahead at 3.23, indicates financial weaknesses. Collectively, it is advisable that financial stability composite indices are particularly suitable for threshold or benchmark values, which indicate the stability of the financial system compared to the individual variables (Gadanecz and Jayaram, 2011). Also, whether a single measure of financial stability is built or not, FSRs should analyze the variables in the external sector as well as the variables in the real, banking and financial sectors.

4. Evaluation of Country Risk

Country risk factor is essential in alluring foreign investment and internal growth prospects. Several research organization and agencies yearly published the risk report with their rating based on several factors. The countries risk assessment evaluated on the basis of country risk tier (CRT) that are described under three categories, i.e. Economic risk, political risk and financial risk. The Chart 1 below showed the riskiness position of Bangladesh with respect to economic, political and financial risk with their magnitudes:

Chart 1: The risk position of Bangladesh

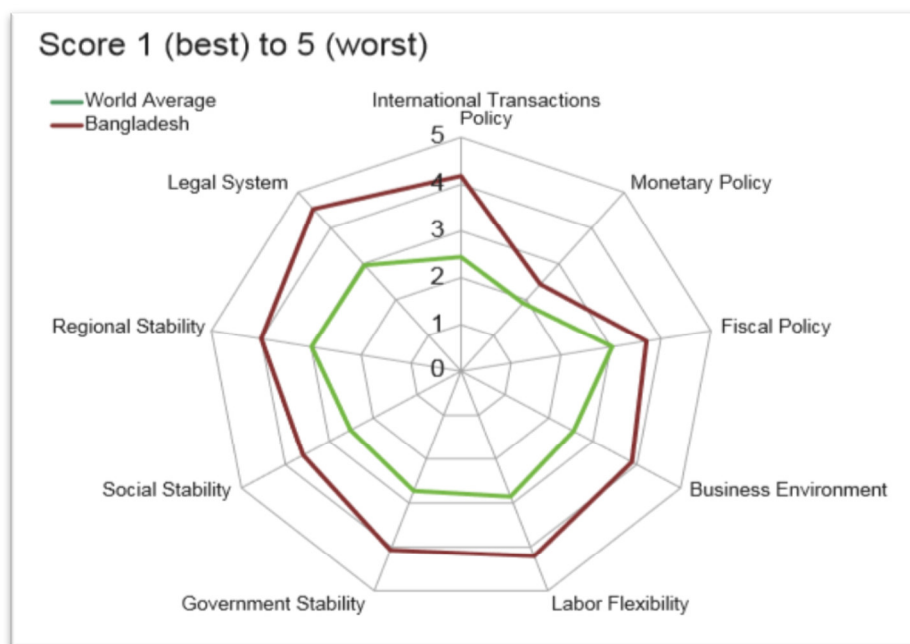


Source: Best's Country Risk Report (2017), A.M. Best Company

In fact, Bangladesh economy largely depends on the strong support of garments industry, agriculture, and foreign remittance. It is found that economy fluctuates from agro-based to service-oriented industry to a greater extent. The growth depends explicitly on the exports of garments product which add 80% value from export. Though remittance is the major contributor in GDP, it stood to blow 8% in the year 2016 and predicted that it would fall in the upcoming year. It is found that a greater portion of remittance instigated from Gulf countries, but the recent crisis in those countries significantly reduces the growth of remittance. In the case of environmental issues, Bangladesh is considered as the world's most vulnerable country and the result greatly found in the reduction of agricultural development. It is also true that rapid expansion of urbanization and deforestation cause a severe effect in the country's bio-diversity. In the case of political environment, it is observed that mostly two major political parties ruling the country from 1991 are Awami League (AL) and Bangladesh Nationalist Party (BNP) though some of the small parties also exist but they worked as an alliance group with two major parties. Currently, the majority members of the parliament are from Awami League, and they formed the government, but the opposition tried to hamper the normal activities by creating political unrest. According to the report of Transparency Perception Index I 2016, Bangladesh came out from the corruption and

lifted its position from 176 to 145. The government tried to improve the situation and emphasized attracting foreign direct investment (FDI) and impose modernized Value-added Tax (VAT) system. In fact, the development is also delayed by poor infrastructure and lower production of power (Electricity).

Chart 2: Political Risk Summary



Source: Best's Country Risk Report (2017), A.M. Best Company

In the case of financial risk, it is found that the banking rules and regulations are not updated and to some extent are not strictly followed. In this regard, the regulators should take more active roles in policy implementation and execution process with continuous monitoring. It is also found that state-owned commercial banks perform negatively and don't care about the rules and regulations.

The Economist Intelligence Unit published the country risk assessment report in 2015 on Bangladesh perspective. It revealed that Bangladesh gradually improved its position in the contest of sovereign risk, currency risk, and banking sector risk. Sovereign risk is the composition of political, structural and policy factors. It is found that Bangladesh scored 44 in the year 2014 whereas it improved in the year 2015 at 43 points though the rating is same as "BB." In the case of currency risk, the points stood 41 in the year 2015 but it was 42 in the year 2014, it means that the risk is slightly lower than the previous year. In fact currency risk initiated by the devaluation concerning the reference currency (US dollar). In banking sector risk, it is found that the performance stood better in 2015 which scored 51, but it was 52 in the year 2014. The letter grading became the same status of ranked "B." In fact, banking crisis generated by the payment difficulties when they have a shortage of liquidity. Sometimes, it is found that government took positions of banks to protect liquidation but genuinely it lose the public confidence at large. The political risk arises from the imbalance power practice and lack of negotiation among political parties. The continuous pressure from the opposition party created an unstable political situation in the country. Bangladesh faces higher economic structure risk as they have poor infrastructure and higher reliance on exports of readymade garments. Bangladesh has to chance to extend its dependency on agriculture but supports needs more for that class of people. The overall rating of the riskiness of Bangladesh is presented below:

Table 1: Country Risk Assessment: Bangladesh perspective

	Sovereign Risk	Currency Risk	Banking sector Risk	Political Risk	Economic Structure Risk	Overall Country Risk
December, 2015	BB	BB	B	B	B	BB

Source: Economic Intelligence Unit Report (2015), The Economist

6. Financial Stability of Bangladesh

The study enumerated the financial stability of Bangladesh based on banking soundness index, financial vulnerability index and regional economic climate index. These indexes are also the combination of several factors that are responsible for indicating broadly the stability of the financial sector.

5.1 Bank Soundness Index

The financial soundness index was termed as banking soundness index in the prior period. (FSI) As the indicators are based on banking sector data. This type is comprised of four main aspects of banking sector such as capital adequacy, asset quality, liquidity, and profitability. At least one indicator represents each aspect: Regulatory capital ratio to risk-weighted assets, such as CAR is selected as an indicator of capital sufficiency. The ratio of NPL to the total loan is used for measuring the quality of the asset, but the ratio of the liquid asset to the total assets and the ratio of the loan-to-deposit ratio measure liquidity.

Table 2: Bank Soundness Index

Category	Indicator
Capital adequacy	Capital Adequacy Ratio (CAR)
Asset quality	Ratio of NPL to Total Loans
Liquidity	Credit to Deposit Ratio Weighted Interest Rate Spread
Profitability	Return on Assets (ROA) Return on Equity (ROE) Net Interest Margin(NIM)

Capital adequacy ratio (CAR) indicates cushion which has a bank's disposal against potential risk. It measures the strength of the bank to attract unexpected loss and provides a hint of financial earnings of the bank - the scope of banks funds financed by sources other than the bank's capital. The nonperforming loan to total loan (NPLTL) ratio is intended to identify the problems with asset quality of the loan portfolios and the level of credit risk. Growing ratios can reduce the quality of the credit portfolios, although it is usually typically a backward-looking specific indicator that NPLs are detected when problems occur. Aggregate financial stability index is an initial warning system for the economy. Credit-to-deposit ratio (CDR) indicates the percentage of deposited deposits that are bound in debt portfolio and risk assessment of customer deposits. For more than one ratio, it refers that banks are relying on borrowings to finance the lending. The spread of Weighted interest (IRS) rate shows the differential figure between weighted lending and deposit interest rates. Increasing interest rates ensures the higher liquidity of the market. The return on assets (ROA) ratio measures the profit or efficiency of the banks in using their assets and reflects the cushion, which a bank has its disposal against potential risk.

The Return on assets (ROE) ratio measures the profit or efficiency of banks by using their equity and reflects the cushion, which a bank has its disposal against potential risk. Again, Net interest rate margin (NIM) ratio measures the difference between interest expense and interest income per unit of total bank assets. The trends of the bank soundness indicators from the year 2006 to 2016 are given below:

Table 3: The trends of Bank Soundness indicator

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
CAR	5.3	7.4	10.1	11.7	9.3	11.4	10.5	11.5	11.3	10.8	10.3
NPLTL	13.2	13.2	10.8	9.2	7.3	6.1	10.0	8.9	9.7	8.8	10.1
CDR	97.0	100.0	103.0	101.0	103.0	104.0	104.0	104.6	105.2	105.9	106.5
IRS	5.6	6.0	5.0	5.1	5.2	5.5	3.7	1.9	3.2	3.5	2.9
ROA	0.8	0.9	1.2	1.4	1.8	1.5	0.6	0.9	0.6	0.8	0.4
ROE	14.1	13.8	15.6	21.7	21.0	17.0	8.8	11.0	8.1	10.5	7.1

5.2 Financial Vulnerability Index

The Financial Vulnerability Index (FVI) focuses mainly on the three major areas that reflect current macroeconomic conditions, including current accounts, capital and financial accounts, and real sectors. At least one indicator represents each aspect.

Table 4: Financial Vulnerability Index

Category	Indicator
External sector	Current account balance-to-GDP ratio Ratio of M2 to foreign exchange reserves
Financial sector	Real Effective Exchange Rate (REER) (Base 2000-2001=100) M2 Multiplier Ratio of domestic credit to GDP
Real sector	General Stock Price Index movement (Dhaka Stock Exchange) Fiscal balance-to-GDP ratio CPI inflation Global Petroleum Price Index

If the deficit will increase, Current account balance-to-GDP ratio is an indication of the vulnerability of the external sector of the economy. The increasing supply of money on the International Reserve provides a hint of reserve adequacy. The broad money (M2) to foreign exchange reserves ratio measures the ability to withhold the

number of external shocks and ensure local currency convertibility. Although Cheang and Choy (2011) did not include in their original work, Real Effective Exchange Rate (REER) was added as an indicator for the construction of aggregate financial stability index. The REER indicator is an indication of an economy's export competition. If it appreciates, competitive growth in the export sector increases. Six monthly point-to-points REER in Bangladesh Taka (BDT) are in use. The M2 multiplier is defined as the proportion of M2 to the financial base. Monetary policy and currency were issued, and the financial base was defined as the bank's deposit with the Bangladesh Bank. The outcome is the basic currency leads the growth of the money supply through the banking system. The ratio of domestic credit to GDP indicates the Fast loan growth is that is often accompanied by reducing the value of the loan and precedes the banking crisis. Although Cheang and Choy (2011) did not include in their original work, General stock price index movement was added as an indicator for the construction of aggregate financial stability index. A stock market index is a sign of investor confidence in an economy, as well as the potential weakness of the economy when it goes out of the line from the basic. Six-monthly point-to-point general stock price index (Dhaka Stock Exchange) movement index has changed from its value. The Fiscal balance to GDP ratio of deficit grants to GDP ratio is taken as an indication of the financial system's stress. From the isolation of the overall demand of the economy and the situation of supply, the CPI inflation indicates the economy. CPI inflation in Bangladesh is taken as a proxy. Although Cheang and Choy (2011) did not include the original work, Global petroleum price index was added as an indicator for the construction of CFSI. We know that when the price of petrol goes up, to meet the excess demand in foreign exchange, Bangladesh feels pressure on the foreign exchange market in the economy. The trends of the financial vulnerability indicator of Bangladesh from the year 2006 to 2016 are given below:

Table 5: The trends of Financial Vulnerability factors

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	0.01	0.01	0.01	0.03	0.02	0.00	0.01	0.02	0.02	0.02	0.02
Current account balance-to-GDP	7.53	6.10	6.82	4.58	5.05	6.03	4.58	4.15	3.71	3.28	2.84
M2 to Foreign Exchange Reserves	83.86	86.55	86.02	91.30	97.74	100.00	100.60	110.10	114.40	130.60	137.95
REER	4.36	4.50	4.54	4.70	4.70	4.80	5.30	5.40	5.40	5.30	4.70
M2 Multiplier	0.68	0.75	0.84	0.90	1.06	1.25	1.28	1.38	1.48	1.59	1.69
Domestic Credit to GDP	20.16	40.38	-6.84	50.67	34.72	-14.05	-25.20	-4.10	9.20	2.30	-1.60
General Stock Price Index movement	-1.82	-2.88	-1.92	-0.38	-0.67	-3.42	-2.15	-2.26	-2.37	-2.48	-2.59
Fiscal balance to GDP	6.10	11.60	6.00	8.50	8.28	10.63	8.69	6.78	7.35	6.41	5.92
CPI Inflation	61.00	69.04	94.10	60.86	77.38	107.46	109.45	105.87	96.29	49.49	40.68
Global Petroleum Price											

5.3 Regional Economic Climate Index

Regional Economic Climate Index (RECI) is mainly formed by the inflation and the economic growth of Bangladesh's neighboring economy of India.

Table 6: Regional Economic Climate Index

Category	Indicator
Regional Economic Climate Index	CPI Inflation of India
	GDP growth of India

Although Cheang and Choy (2011) did not include in their original work, CPI inflation of India was added as an indicator for the construction of aggregate financial stability index. To some extent, Bangladesh's economy depends on imports of essentials from India economy. So high inflation in India means that foreign currency demand and imported inflation in the domestic economy. India's six-monthly point-to-point CPI inflation was adopted. GDP growth rate of India is also considered as the key factor of the regional economy. India's half-yearly GDP growth rate is calculated by the simple arithmetic mean of quarterly GDP growth statistics in India. The trends of the Indian economic growth are given below:

Table 7: The trends of Indian Economic Factor

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
GDP growth	9.26	9.8	3.89	8.49	10.24	6.64	5.46	6.39	7.51	8.01	7.11
CPI Inflation	6.9	5.5	9.7	15	9.47	6.49	11.17	9.13	5.86	6.32	2.23

6. Evaluation of Composite Financial stability Index

The composite financial stability index measures the stability as a tool of the economy. It evaluates the position of the financial system and the environment where it is operated. The index is the composite form of macro and micro-prudential factors that entirely affect the steady growth of the economy. This index is explained by Nayn and Siddiqui (2014) which is also followed by the Bangladesh Bank's Stability Report. The main heads of the index are categorized under three heads: Banking soundness index, Financial vulnerability index, and Regional economic climate index. These three heads are the composite of eighteen sub-heads that are the representative of each category. The composite Financial Stability Index is calculated as:

$$CFSI_t = 0.6XBSI_t + 0.4X(FVI_t + RECI_t)$$

Here,

CFSI = Composite Financial Stability Index

BSI = Bank Soundness Index

FVI = Financial Vulnerability Index

RECI = Regional Economic Climate Index

t = Time period

Again, the individual components of the composite financial index are measured by the following ways:

$$BSI_t = \frac{\sum_{i=1}^7 BS_{it}}{7}$$

The banking soundness index (BSI) indicates the normalized value of banks soundness indicator during the period.

$$FVI_t = \frac{\sum_{j=1}^9 FV_{jt}}{9}$$

The financial vulnerability index refers to the normalized value of financial vulnerability indicators during the period.

$$RECI_t = \frac{\sum_{k=1}^2 RE_{kt}}{2}$$

The regional economic climate index indicates the normalized value of regional indicators during the period.

All selected individual indicators are available in six monthly frequencies. For a single synthetic index to combine separate indices described above, they need to be on a general basis or scale. All private indexes were normalized before aggregation so that they have the same isolation. In other words, the study applies the equally-variance weighting method to calculate the aggregate index. Statistically, normalization converts the standard index into a common scale index with an average of zero and a standard deviation of one. Avoid the introduction of increasing synthesis distortion from the difference in zero-average trend index methods. So, an index with extreme value has a big impact on the composite index internally. It may be preferred if the intent to repay exceptional behavior, for example, if some index analyzes are considered to be much better than average scores. In this method, the minimum and maximum measurements should be varied between normalization indicators. The statistical normalization's formula is:

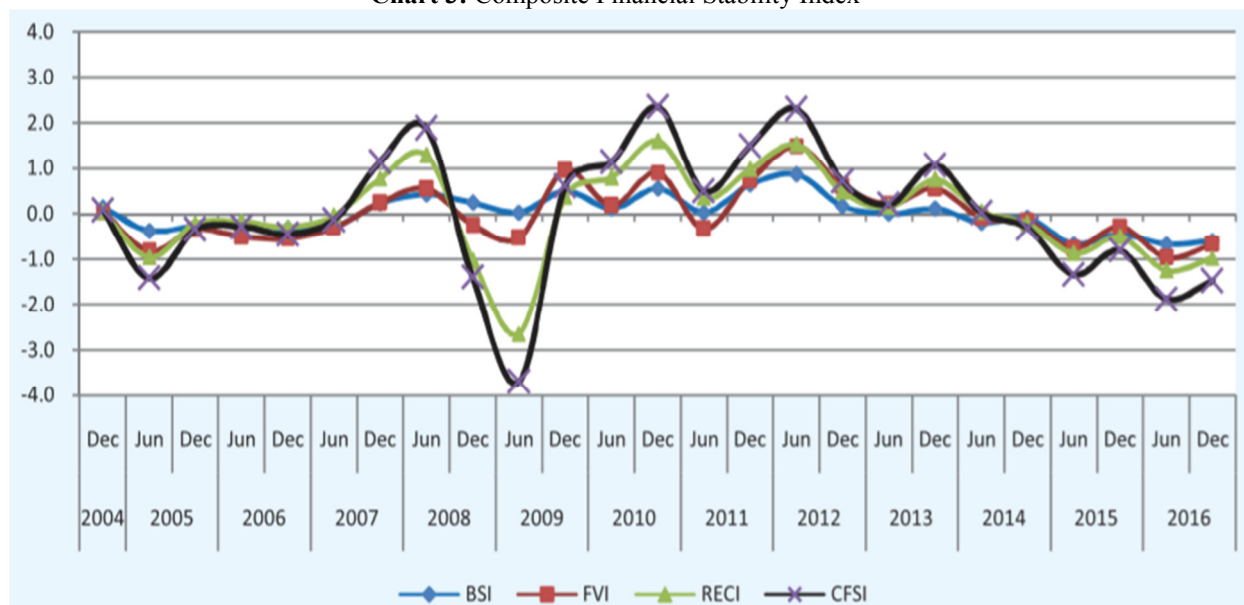
$$Z_t = \frac{(X_t - U)}{S}$$

Where X_t represents the value of indicator X during the period t ; when u and s are mean average and standard deviation by index X in the analyzed period respectively; Z_t is the normal value of the index. The mean is deducted from each variable before its standard deviation divides its value. The normal distribution of Z has zero mean and unit variance, and it is also known as standard normal distribution, $N(0, 1)$. However, the standard normal distribution range is not between zero and one. Indeed, it ranges from minus three (-3) to plus three (+3). All single indices are converted so that a positive value indicates that an indicator is calculated on its historical average, which is calculated from 2004 and indicates unfavorable development for stability; a negative value is below its historical average.

The normalization indicator is then merged into the single index. The study assigned the same weight to all individual indices for computation of BSI and FVI composite indicators. These indices give equal importance to each indicator. It is the most popular weight method used in the earlier study. The value is normalized in aggregated form to construct the index using the arithmetic mean. For instance, based on the experience of the crisis, some studies provide separate measurements for different indicators. However, it is arguable that the index important in one crisis could not be important in another.

The composite index measures the volatility of financial system with the passage of time. In fact, it showed the vibration in financial stability concerning some key indicators. The excess volatility is the threat to economic development. As a result, the foreign investment will deteriorate as well as export propensity will fall that will create a negative image in the world economy. This study used semiannual date ranges from 2004 to 2016. The composite Financial Stability Index (CFSI) is presented in the Chart below:

Chart 3: Composite Financial Stability Index



Source: Financial Stability Report (2016), Bangladesh Bank

The above chart showed that the individual and composite indices have negative trend from the year 2004 to mid of 2005. At the middle of the year 2005, the indices have a growing trend with less volatile within the individual indices and continued up to the year 2007. It also found that the growth of composite index sharply increased in the mid of 2008, but among the indices, it experienced stress due to high inflationary pressure and high oil price in the global market. In 2009, the composite index stood at a lowest point due to the effect of the global financial crisis. It takes time to revive the economy to adjust the lag effect. From the year 2009 to 2010, the indices increased sharply with lower volatility among the sub-indices. The issue relating to liquidity crisis and maintenance of capital adequacy within the framework of BASEL II reflect a positive effect during the year 2011. Most importantly, the progress of financial performance during the period 2012 to 2016 was satisfactory. It is found that the financial system of Bangladesh was comparatively stable during the period 2012 to 2016. It is notable that due to the deterioration of bank performance and capital market inversely affect the indices in the first quarter of 2016, but it covered in the second quarter by higher bank performance and private sector credit growth. In sum, it can be stated that the overall movement of the indices appeared satisfactory and the financial system becomes more stable in 2016.

7. Conclusions

Monitoring and ensuring monetary stability, marked by the absence of excessive volatility, the pressure or crisis in the financial system, has become a diversified goal of the central bank worldwide, especially after the recent global financial crisis. Although there is no consensus on the measurement of financial stability, yet create a joint or collective index for measurement of the financial system through some indicators gained recognition as a part of early warning indices to detect the weaknesses of the financial system as a whole. This paper presents a modest effort to build a composite financial stability index (CFSI) for the financial system of Bangladesh. It is seen in the study that in the financial year 2008-2009 and at the end of 2010 when the stock market crashed, and liquidity decreased in the banking system, CFSI for Bangladesh was performed well in identifying stress in the financial system. However, CFSI needs assistance with other relevant data and quality information for making an appropriate decision.

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