

Performance Evaluation of ICB Mutual Funds

Md. Rizwan Hassan *

Monir Ahmmed **

Md. Shahnur Azad Chowdhury ***

Abstract: *The study investigates the performance of ICB close end mutual funds listed in the stock exchanges of Bangladesh. We used Sharpe, Trezor and Jensen measures to evaluate the portfolio performance of mutual funds. During the period of study all the mutual funds were performing well through the study ranked the third schemes of ICB Mutual Funds at the top based on almost all criteria. The implication for the investors is that if they are able to devote their fund properly in this scheme they can be able to harvest the best risk return tradeoff.*

Keyword: Mutual fund, ICB, Sharpe Ratio, Trezor Ratio and Jensen Alpha

1. Mutual Funds in Bangladesh

Mutual funds are collective investment vehicle that pools of funds and invest that in securities of different companies. There are some thirty five mutual funds in Bangladesh. Out of them some are managed and privately managed and others are managed and run by state owned organization Investment Corporation of Bangladesh (ICB). With its strong standing in financial services industry ICB is the largest sponsor of mutual funds in Bangladesh.

The market analysts would agree that the crux of the problem of the Bangladesh capital market now is the chronic lack of confidence of the investors in the system as a whole. Among the urgent confidence building measures needed to reverse the situation should be the introduction of innovative investment products suiting the individual risk-return parameters of all income groups. Among the immediate agenda of action floating of mutual funds stands in a unique position

* Assistant Professor, Department of Business Administration, International Islamic University Chittagong

** Associate Professor, Department of Business Administration, International Islamic University Chittagong

*** Assistant Professor, Department of Business Administration, International Islamic University Chittagong

in this regard for the very simple reason that it is the only vehicle which operates simultaneously at both the demand and the supply side of the paradigm.

On the supply side, the mutual funds, being itself a listed security at the stock exchanges, introduces a good and reliable instrument in the capital market for the small but astute investors. Mutual Fund shares have been one of the most sought after scrips.

On the demand side, since mutual fund investments are primarily in the secondary market stocks and bonds bought at the stock exchanges, the demand for blue chip shares increases with the operation of the mutual funds.

Therefore Mutual funds with their pool of huge funds play a very important stabilizing role in the capital market through its normal ups and downs.

The Securities and Exchange Commission (Mutual Fund) regulations, 1997 govern the Mutual Funds regime in Bangladesh. It empowers the Securities & Exchange Commission, to approve floatation of Mutual funds by the private sponsors for the first time.

As per the regulation, every Mutual fund shall have to be registered with the commission. The conditions for granting registrations of any Mutual /fund include the /Sponsor(s) needs to have a sound track record and experience in the relevant field of financial services of 5 years; the fund needs to be in the form of a trust with a Trust deed duly approved by the commission; the fund needs to be managed by an Asset management Company approved by the commission; the sponsor(s) should contribute at least 40 % to the minimum amounts to be raised under any schemes of Mutual Fund. The sponsors of any of its employee should not commit any economic offence.

It also stipulates that there are to be two types of approved schemes for Mutual Funds, i.e. Open-ended and close-ended Schemes. Any close-ended schemes shall be listed with the Stock Exchanges on receipt of approval from the commission and the minimum amounts to be raised in respect of every close-ended and Open-ended scheme need to be Tk.30.00 million and Tk. 60.00 million respectively. However there's no maximum limit on the amounts that the mutual funds may collect.

2. Literature Review

A few research studies that have influenced the preparation of this paper substantially are discussed below:

Taylor and Yoder (1999) compared the performance of load and no-load fund. They evaluated the performance of load and no-load funds during the crash of October 1987. They used the stochastic dominance model and found that both load and no-load fund performed equally well before market crash.

Hartzell et. al. (2010) tried to develop alternative benchmarks to for evaluating Mutual funds performance. Their analysis indicates that a value-weighted portfolio of all real estate investment trusts (REIT) mutual funds fails to

outperform any of their alternative benchmarks net of fees. When they added back fees, they found only weak evidence of abnormal performance, which was generally not robust to their additional benchmarks, although the R^2 of the single-index model was quite high for those value-weighted mutual fund portfolios.

Pendaraki and Zopounidis (2003) used multi criteria method for evaluating performance of mutual funds of Greece market. They used PROMETHEE II method for ranking mutual funds from best to worst based on three generalized criteria and seven criteria of mutual fund performance through several different scenarios. They evaluated performance for two years from monthly data of mutual funds. There were no significant differences in the ranks of mutual funds for the two years examined.

Chen and Huang (2011) used Sharp ratio and portfolio turnover ration in Contemporaneous model along with three years alpha in forecasting model. They investigated the two components of Morningstar's stewardship grade and identified its relation with mutual fund performance. Stewardship grade is positively and significantly related with Sharp ratio.

There was very little study on mutual funds in Bangladesh market. Chowdhury and Uddin (2009) found the role of Investment Corporation of Bangladesh, operator of nine mutual funds, as conducive for stability of the capital market by ensuring both demand side and supply side of the market.

3. Statement of the Problem

Mutual fund is a trust that pools the savings, which are then invested in capital market instruments such as shares, debentures and other securities. Mutual funds offer an efficient way to diversify one's investment. With a mutual fund one can buy the expertise of the fund management. In many cases fund managers have a long history of investment experience and may be specialists in certain areas such as international securities, gold, stocks or municipal bonds. By entrusting one's fund on a capable hand one can free his time for other pursuits. Another benefit of mutual funds is that they can be used to buy not only stocks but also government bonds, corporate bonds and so on. Mutual funds also invest in real assets. Mutual fund offers a number of other services to investors. The fund reinvests all the distributions, provide market information to investors from time to time etc, that's why Mutual fund is preferred as a suitable investment option by investors. Recently the capital markets in Bangladesh is featured by a plethora of mutual fund schemes consisting of varying portfolio mix, investment objectives and expertise of professional fund management. Currently there are 35 mutual funds listed in Dhaka and Chittagong stock exchange. In our country Mutual Funds are registered, constituted and managed by Securities and Exchange Commission (Mutual Fund) 1997. Mutual Funds industry witnessed rapid growth worldwide in last several years. It is believed that mutual funds play an important role in stabilizing stock market. Investment is a risky job, selecting a security for

investment requires knowledge for identifying risk return characteristics of the security. But it is a very difficult and time consuming task for small and medium investors. Since there are a lot of mutual funds in our country, it is a very crucial task to select a best performing mutual fund for investment. This study aims at finding out the necessary facts and figures regarding performance of selected schemes, which can benefit the investors and fund managers in selecting a better investment by considering risk return factors. In such a context, an attempt has been made to study the performance of selected schemes of mutual funds based on risk return relationship. This study is undertaken with a view to showing small and medium investors the right way of analyzing mutual funds' performance, so that they can select a well performing mutual fund.

4. Objectives of the Study

The principal objective of the study is to evaluate performance of ICB mutual funds based on some selected criteria. To achieve the principal objective the specific objectives are as follows:

- To measure the performance of selected mutual funds and rank the sample Mutual Funds based on performance.
- To compare sample funds' performance with market portfolio.
- To suggest some important policy implications for improving the performance of mutual funds in Bangladesh

5. Methodology of the Study

The study has been designed in the following ways:

5.1 Sampling plan

Convenience sampling technique was used to select the respondents. Presently, there are 41 Mutual Funds in Bangladesh. Since Investment Corporation of Bangladesh is playing a leading role in Mutual Fund management, so seven Mutual Funds managed by ICB are selected as sample for this study. They are 2nd, 3rd, 4th, 5th, 6th, 7th, 8th ICB Mutual Funds

5.2 Selection of Index

There are several indices in Bangladesh, Such as DSI (DSE all Shares Index), DSE-20, DSE general Index, CSE all Shares Price Index and CSE-30. CSE-30 index has been used in this study to calculate market portfolio return.

5.3 Time Horizon

The time horizon selected covers 5 years beginning at July 01, 2005. Thereby the 7 schemes are selected on the basis of regular data availability for 5 years (from July-2005 to June-2010).

5.4 Source of Data

Secondary data were used in this study. Data were collected from Different websites, annual reports, and official journal in the field of mutual funds.

5.5 Measuring Risk and Return of Mutual Fund

For conducting the study risk and return were calculated for both the mutual funds and the market. The returns were computed on the basis of the Cash dividend, Stock dividend and NAV of the different schemes and return in the market index are calculated on the basis of CSE-30 on the respective date. Risk was measured using different statistical measures. Standard deviation, variance and coefficient of variation were used in this purpose. Beta coefficient was used for measuring non-diversifiable risk.

Risk-Free Rate of Return: In this study, the yield on 5 year Bangladesh Government Treasury Bill (issued on June 2005) has been used as risk free rate.

5.6 Evaluating portfolio performance

For further evaluating the performance of mutual funds, the risk-return relation models given by Sharpe (1966), Treynor (1965) and Jensen (1968) have been applied.

Sharpe Ratio: The Sharpe measure provides the reward to volatility trade-off. It is the ratio of the fund portfolio's average excess return divided by the standard deviation of returns.

By dividing the average return of the portfolio in excess of the risk free return by the standard deviation of the portfolio, the Sharpe ratio measures the risk premium per unit of risk exposure. In other words, this ratio measures the change in the portfolio's return with respect to a one unit change in the portfolio's risk. The higher this "Reward to variability ratio" the more attractive is the evaluated portfolio because the investor receives more compensation for the same increase in risk.

Treynor Ratio: The Treynor measure is similar to the Sharpe Ratio, except that it defines reward (average excess return) as a ratio of the CAPM beta risk. Treynor's performance measure is defined as the risk premium earned per unit of risk taken. Thus the Treynor ratio is computed as the average return of the portfolio in excess of the risk free return divided by the portfolio beta. Treynor's ratio is as follows

Treynor Ratio = $\frac{\text{Average Excess Return}}{\text{Portfolio Beta}}$ Where is the risk value of the mutual fund portfolio.

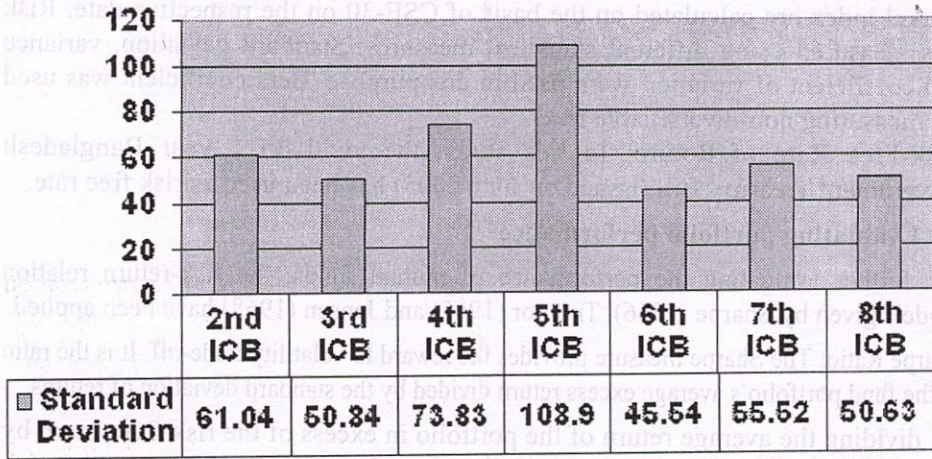
Jensen's Alpha: The Jensen's Alpha measure is the intercept from the Sharpe-Litner CAPM regression of portfolio excess returns on the market portfolio excess returns over the sample period. Jensen's Alpha is the arithmetic difference of the portfolio's return from the return of a portfolio on the securities market line with the same beta. Jensen defines his measure of portfolio performance as the difference between the actual returns on a portfolio in any particular holding period and the expected returns on that portfolio conditional on the risk free rate, its level of "systematic risk", and the actual returns on the market portfolio. J

6. Findings of the Study and Interpretations

The findings of the study are discussed in the following section.

6.1 Standard Deviations in Return of Mutual Funds

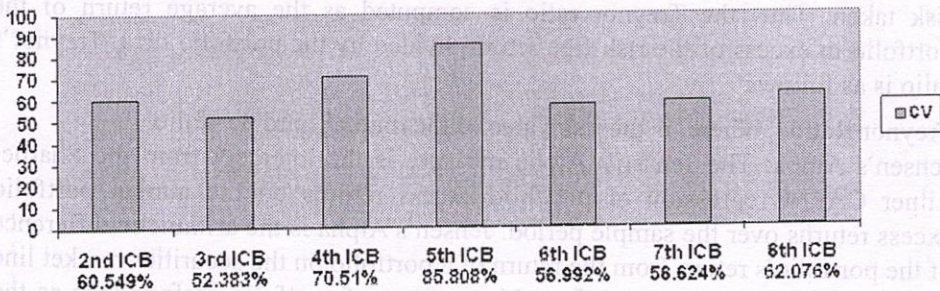
Standard deviation of return were calculated for each of the mutual funds and are given in the following bar diagram.



Interpretations: Since Standard Deviation in the return is highest in case of 5th ICB Mutual Fund, so investment in 5th ICB involves the highest risk. But Standard Deviation alone is not sufficient to take investment Decision. In this situation investor should check Coefficient of variation and the value of Reward to Risk ratio.

6.2 Risks per Unit of Return (Coefficient of Variation)

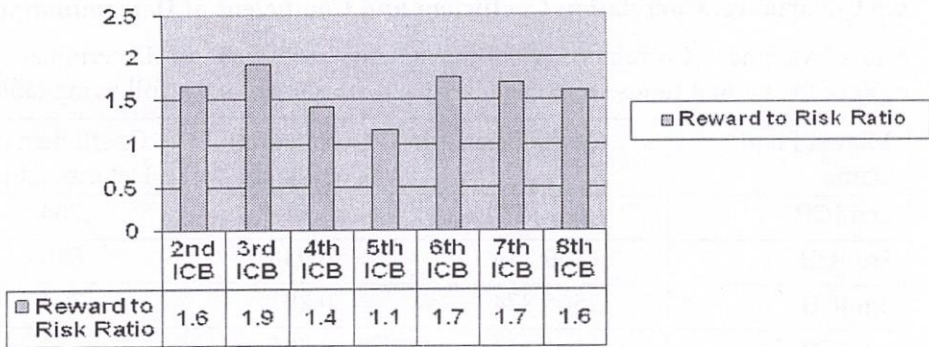
The coefficient of variation are depicted in following bar diagram.



Interpretations: The Coefficient of Variation is the lowest in case of 3rd ICB Mutual Fund. This indicates that the risk associated with per unit of return is the lowest in case of 3rd ICB. So investment in 3rd ICB mutual fund involves lowest degree of risk. On the other hand investment in 5th ICB Mutual fund involves highest risk

6.3 Reward to Risk Ratio

Return per unit of risk a measure opposite of coefficient of variation was calculated for each of the mutual funds and are given below.



Interpretations: From the graph we find that 3rd ICB Mutual Fund has offered the highest return per unit of risk taken.

6.4 Market Beta: Volatility measures

The beta of each of the mutual funds was calculated and is discussed in the following table.

SN	Fund Name	Value of Beta	Types of Funds	Comments
1	2 nd ICB	1.313	Aggressive	2 nd ICB Mutual Fund's return is changed by 1.313 units due to per unit change in CSE-30 return
2	3 rd ICB	1.222	Aggressive	3 rd ICB Mutual Fund's return is changed by 1.222 units due to per unit change in CSE-30 return
3	4 th ICB	1.686	Aggressive	4 th ICB Mutual Fund's return is changed by 1.686 units due to per unit change in CSE-30 return
4	5 th ICB	2.218	Aggressive	5 th ICB Mutual Fund's return is changed by 2.218 units due to per unit change in CSE-30 return
5	6 th ICB	1.047	Aggressive	6 th ICB Mutual Fund's return is changed by 1.047 units due to per unit change in CSE-30 return
6	7 th ICB	1.357	Aggressive	7 th ICB Mutual Fund's return is changed by 1.357 units due to per unit change in CSE-30 return
7	8 th ICB	1.196	Aggressive	8 th ICB Mutual Fund's return is changed by 1.196 units due to per unit change in CSE-30 return

6.5 Covariance, Correlation Coefficient and Coefficient of Determination

The Covariance, Correlation Coefficient and Coefficient of Determination of each of the mutual funds were calculated and are shown in the following table.

Mutual Fund Name	Covariance	Correlation Coefficient	Coefficient of Determination
2nd ICB	1998.8214	0.839	.704
3rd ICB	1860.274	0.938	.880
4th ICB	2565.874	0.891	.794
5th ICB	3376.124	0.795	.632
6th ICB	1593.732	0.897	.805
7th ICB	2065.807	0.95	.903
8th ICB	1820.37	0.92	.846

Interpretations: All the Funds exhibit positive co variances. That means positive co-movement corresponding to market. The 5th ICB scheme yield the highest covariance. This indicates highest risk. The standardized measure i.e. Coefficient of correlation shows that all the funds have strong association with market. 3rd ICB shows the strongest association with market. High value of R^2 shows higher diversification of schemes portfolio, that can easily contain the market variability. The highest R^2 value is found in 3rd, 7th and 8th ICB Mutual Funds, which indicate that these schemes have reasonably exploited the diversification strategy for forming their portfolio.

6.6 Value of Alpha

The alpha of each of the mutual funds was calculated and is discussed in the following table.

Mutual Fund's Name	Alpha (A)	Positive or Negative	Has portfolio beaten the market?	Comments
2 nd ICB	44.735	Positive	Yes	2 nd ICB has performed better than market portfolio CSE-30. 2 nd ICB mutual fund generated 44.735% return irrespective of year plus premium for risk depending on
3 rd ICB	44.861	Positive	Yes	3 rd ICB has performed better than market portfolio CSE-30. 2 nd ICB mutual fund generated 44.861% return irrespective of year plus premium for risk depending on
4 th ICB	32.721	Positive	Yes	4 th ICB has performed better than market portfolio CSE-30. 2 nd ICB mutual fund generated 32.721% return irrespective of year plus premium for risk depending on
5 th ICB	32.196	Positive	Yes	5 th ICB has performed better than market portfolio CSE-30. 2 nd ICB mutual fund generated 32.196% return irrespective of year plus premium for risk depending on
6 th ICB	35.202	Positive	Yes	6 th ICB has performed better than market portfolio CSE-30. 2 nd ICB mutual fund generated 35.202% return irrespective of year plus premium for risk depending on
7 th ICB	36.748	Positive	Yes	7 th ICB has performed better than market portfolio CSE-30. 2 nd ICB mutual fund generated 36.748% return irrespective of year plus premium for risk depending on
8 th ICB	30.490	Positive	Yes	8 th ICB has performed better than market portfolio CSE-30. 2 nd ICB mutual fund generated 30.490% return irrespective of year plus premium for risk depending on

6.7 Ranking Based on Sharpe Ratio

The rankings of the portfolio were done based on Sharp ratio, which is given below.

Name of Portfolios	Mean Return (%)	Standard Deviation	Systematic Risk	Risk Free Rate	Sharpe Ratio	
					Value	Rank
2nd ICB	100.823	61.047	1.313	8.750	1.508	3
3rd ICB	97.061	50.843	1.222	8.750	1.737	1
4th ICB	104.720	73.838	1.686	8.750	1.300	6
5th ICB	126.931	108.917	2.218	8.750	1.085	7
6th ICB	79.922	45.549	1.047	8.750	1.563	2
7th ICB	94.715	55.526	1.357	8.750	1.548	4
8th ICB	81.570	50.635	1.196	8.750	1.438	5

Comments: Sharpe ratio measures the fund portfolio's average excess return (over risk free rate) per unit of total risk. From the above table we find that 3rd ICB mutual fund offered an average excess return of Tk 1.737, which is the highest excess return among all of the sample Funds. For this reason 3rd ICB mutual fund has been ranked 1st according to Sharpe Ratio.

6.8 Ranking Based on Treynor Ratio

The rankings of the portfolio were done based on Trenor ratio, which is given below.

Name of Portfolios	Mean Return (%)	Standard Deviation	Systematic Risk	Risk Free Rate	Treynor Ratio	
					Value	Rank
2nd ICB	100.823	61.047	1.313	8.750	70.124	2
3rd ICB	97.061	50.843	1.222	8.750	72.267	1
4th ICB	104.720	73.838	1.686	8.750	56.922	6
5th ICB	126.931	108.917	2.218	8.750	53.283	7
6th ICB	79.922	45.549	1.047	8.750	67.977	3
7th ICB	94.715	55.526	1.357	8.750	63.349	4
8th ICB	81.570	50.635	1.196	8.750	60.886	5

Comments: Treynor ratio measures the risk premium, earned per unit of risk (systematic risk) taken. Like Sharpe ratio, Treynor ratio also placed 3rd ICB mutual fund at the number "1" position.

6.9 Ranking Based on Jensen Measure

The rankings of the portfolio were done based on Jensen measure, which is given below.

Name of Portfolios	Mean Return (%)	Standard Deviation	Systematic Risk	Risk Free Rate	Jensen Measure A/B	
					Value	Rank
2nd ICB	100.823	1.313	8.750	44.735	34.071	2
3rd ICB	97.061	1.222	8.750	44.861	36.711	1
4th ICB	104.720	1.686	8.750	32.721	19.407	6
5th ICB	126.931	2.218	8.750	32.196	14.516	7
6th ICB	79.922	1.047	8.750	35.202	33.622	3
7th ICB	94.715	1.357	8.750	36.748	27.080	4
8th ICB	81.570	1.196	8.750	30.490	25.493	5

Comments: Risk adjusted value of Alpha agrees with Sharpe and Treynor ratio. 3rd ICB Mutual Fund again supersedes all other sample mutual funds.

6.0 Policy Implication and Conclusion

7.1 Summary of Findings:

- All of the above analysis suggests that 3rd ICB mutual fund is the best mutual fund among the samples taken. Because in case of 3rd ICB mutual fund
- Risk associated with per unit return is the lowest
- Return per unit of risk taken is the highest
- Offers highest premium (average return-average risk free return) for 1 unit of total risk
- Offers highest premium (average return-average risk free return) for 1 unit of systematic risk
- R^2 value of .880 indicates that portfolio is well diversified.
- Correlation coefficient of .94 indicates strong association with market Portfolio Value of Alpha is 44.861% which indicates that 3rd ICB has beaten the market portfolio and earned a return of 44.861% irrespective of year plus premium.

7.2 Policy Implication:

- Historic performance doesn't guarantee a better future performance. So above mentioned analysis should be used only as a guideline
- Effect of systematic factors must be considered before taking decision to invest in mutual fund
- Since market is inefficient, the performance of mutual funds is often influenced by irrational movement of market. Investors should not be driven by fancies and whizzes.

- Degree of market efficiency should be determined before taking any investment decision
- Further research works are highly needed to establish a well designed performance evaluation guideline.

7.3 Conclusions

Mutual funds are one of the most highly growing products in financial services market. Mutual funds are suitable for all types of investors from risk averse to risk bearer. Mutual funds are suitable to all age of investors, businessmen, salary person, etc. Investors need not to be expert in equity market; mutual funds can satisfy their need. Fund managers are expert in this area and invest fund in well diversified portfolio, high return with low risk is possible in mutual fund. In today's world, investors are showing more trust in mutual fund than any other financial product. Mutual fund is subject to market risk, this is proved in performance evaluation section of this report. Performance evaluation measurement ratios i.e. Treynor's, Sharpe's and Jensen's are used by fund managers to take decision of investment and to diversify portfolio. In the end analysis is not everything. National, international economic environments should be assessed by the investors before taking any type of investment decision. Emotional responses also play a vital role in our stock market, where volatility is extremely high.

References

- Chen, Carl R. & Huang, Ying, (2011), Mutual Fund Governance And Performance: A Quantile Regression Analysis Of Morningstar's Stewardship Grade, Corporate Governance: An International Review, 2011, Volume 19 Number 4, Pp.311-333
- Chowdhury. Tanbir Ahmed & Uddin. Md. Gazi Salah, (2009) The 5th International Conference On Global Academy Of Business And Economic Research Gaber, Malaysia,
- Hartzell Jay C. Et. At. (2010), Alternative Benchmarks For Evaluating Mutual Fund Performance, Real Estate Economics, Vol. 38, Pp. 121-154
- Pendaraki, K., & Zopounidis, C., (2003) Evaluation Of Equity Mutual Funds' Performance Using A Multicriteria, Operational Research. An International Journal. Vol.3, No. 1, Pp.69-90
- Reilly, Frank J. & Brown, Keith C. (2007) Investment Analysis And Portfolio Management, Thomson Southwestern Publishing, 8th Edition, Pp. 1043-1049
- Taylor, Walton R.L. & Yoder, James A.(1999) "Load And No-Load Mutual Fund Dynamics During The 1987 Market Crash: A Stochastic Dominance Analysis" Journal Of Economics And Finance, Volume 23, Number 3, Fall 1999, Pp 255-265

www.cse.com.bd

www.icb.gov.bd

www.secdb.org