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*financing happiness*



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**Internship Report On:**

**Empirical Analysis of 5 DSE Equity Traded Through IDLC Investments Ltd**

**&**

**Portfolio Management**

**Submitted To:**

**Riyashad Ahmed**

**Assistant Professor**

**BRAC Business School**

*Letter of Transmittal*

....., 2017

To

Riyashad Ahmed

Assistant Professor

BRAC Business School

BRAC University

**Subject:** Internship Report Submission

Dear Sir,

I have completed my internship, a three month mandatory program of BRAC University from IDLC Investments Limited, thus I am writing a report on Empirical Analysis of Five Dhaka Stock Exchange Equity and Portfolio Management. After a great experience at IDLC Investments Ltd, it my honor to present to you my internship report.

Along the way I have learned a lot which will help me in my professional life. I have tried my best to be as relevant as possible with the report and I sincerely do hope that my endeavor will serve the purpose.

Sincerely yours

.....

**Mohammed Ismail**

**13304022**

**BRAC Business School**

**BRAC University**

## **Acknowledgement**

First and foremost I would like to thank Almighty Allah for letting me reach this phrase, then I would like to thank my parents who has supported me at many ups and downs. I would also like to thank my internship supervisor and my Finance facultu, Riyashad Ahmed for the guidelines he has provided me with and the time he will take to review my report.

As this is my final report of my Bachelors of Business Administration Program, I would also like to thank all the faculty members of BRAC University, whose classes I have been in, as they have all contributed to the position where I am now at.

I would also like to thank my department members at IDLC Investments for helping me and teaching me the professional life for in the last three months. Especial thanks goes to Mohammad Nabeel Mosharraf, Senior Officer, Operations, Safina-E-Jahan and Rahmi Karim Maliha without whose help this report would have been very difficult.

My thanks also go to IDLC Investments Limited for letting me complete my internship and allowing me to gain my experience under them.

Last but not the least, my love and my thanks goes to my beloved BRAC University, the threshold of my career.

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# Chapter 1

## **Abstract**

This study aims to assess ways an investor can make investment decisions. Here historical prices have been used to forecast future prices, using the regression model. Regression model is a key tool in order to forecast. Risks and returns of stocks and portfolios have been shown all of which I have learned from my financial experience in University and at work. The study also presents an inside to the world of IDLC.

## **Introduction**

As part of my internship, a mandatory three months Bachelors of Business Administration (BBA) program of BRAC University, I was appointed at Industry Development and Leasing Corporation (IDLC) Investments Limited. This three months internship program allows would be graduates firsthand experience with the corporate world, which would soon be helpful in the actual job.

My internship program started from 16<sup>th</sup> April, 2017 and ended on 15<sup>th</sup> July, 2017. In the three months period I was fortunate to learn quite a lot about IDLC and the stock market, Dhaka Stock Exchange, thus helping me to write my internship report. I particularly had three main tasks during my internship- Data Entry, Book Keeping and contacting clients.

The first month I spent at IDLC was by keeping records of IDLC clients and making sure the clients had provided all sufficient information and has gone through the correct procedures in order to be a client of IDLC. For the next two months I was handed the responsibility of their Book Keeping. Basically this is how I came to learn about shares and stock market, because all transaction a certain client of IDLC made in the Stock Exchange, I had to keep record of it, and execute their buy and sell. Third, I had to contact clients and inform them whether they could carry on with their transaction or not.

In the course of three months I met a lot of new people, got to socialize with them, make acquaintances, which is really important because in we are in a real job it is really important to make acquaintances with people. I have also learnt to be patience. As learning new things takes time, and there's lot to learn from on hand experiences in such a short time. All these are really



important for the career ahead. Most importantly I learned about the stock market, I have also made a few investments in it and got a decent return from it. So I truly believe my experience from this internship has and will help me in the future.

## **Broad Objective(s)**

The broad objective of the report is to access how the stock market works and the possible ways an investor can look to invest in the stock market and also how a portfolio, combination of stocks, is managed.

### ***Requirements to meet the Broad objectives***

- Knowledge about the stock market.
- Idea about the company/stock being invested
- How a portfolio works
- Historical data of stock prices.

## **Methodology**

Basically two methods have been used in the data collection process-

- **Primary:** I have consulted with my supervisors, other interns and other people who have knowledge about the shares.
- **Secondary:** Dhaka Stock Exchange website and Annual reports of companies.

## **Limitations**

A few of the limitations in completing this report includes time constrain, not all data were available in hand, not all portfolio management process was up for disclosure, and there were some problem during the analysis. Lastly, I have taken only taken into consideration the historical prices of each stock, therefore the true prices in the future may reflect otherwise.

# Chapter 2

## **Company Profile**

### ***Historical Background***

IDLC was established in 1985 and is the first leasing company in Bangladesh. A number of collaborative foreign and national firms such as Korea Development Financing Corporation, The Aga Khan Fund for Economic Development, The City Bank Limited, IPDC of Bangladesh Limited, Sadharan Bima Corporation, International Finance Corporation (IFC), German Investment and Development Company (DEG), Kookmin Bank first gave birth to IDLC. At the beginning 49% of control was under foreign control but as the evolution continued, by 2009 IDLC was under national control.

### ***The Company***

IDLC is Bangladesh's leading Non-Financial Banking Institution multi product seller. Among international shareholders Aga Khan Fund for Economic Development (AKFED) and German Investment and Development Company (DEG), Kookmin Bank of the Republic of Korea in addition to KDLC and all these institutions together hold 47.3%% of the company's shares.

Five Local financial institutions, Mercantile bank, The City Bank, SK+F, Reliance insurance and Sadharan Bima Corporation holds 52.7% of the company's shares. IDLC is also a listed member of Dhaka Stock Exchange.

The novel institutional shareholding structure including generally of budgetary organizations encourages the organization to continually create through sharing of understanding and expert approach at the most elevated strategy making level.

IDLC Provides a wide range of financial services and solutions to different corporations and individual client. Some of the services include- Corporate Finance, Short Term Finance, Lease Finance, Real Estate Finance, Debenture, Corporate Advisory Services etc.

### ***Business Overview***

The company basically stands on four legs- SME, Capital market, Corporate and Consumer.

- Small and Medium Sized Loan: This division provides a wide range of loan services such as working capital loan, term loan and lease finances to a wide range of industries such as

cement, steel, plastic and textile. As of 2016 the portfolio size for this division is 26,054 million with more than 10,500 customers and an income from operations of TK 1,535 million.

- **Corporate:** The task of this division is to provide sound financial service to corporate clients, with services such as term loan, financing options for capital expenditure and structure financing. The size of the size of the portfolio as of 2016 is 13,406 million, with an income from operations of TK 415 million and a client base of 257.
- **Consumer:** This division provides retail financial services such as home loan, car loan, and personal loan. This division is currently enjoying the highest growth in home loan industry in Bangladesh. It has a client base of 13,757 and an income from operations of TK 1275 million.

### ***IDLC Organogram***

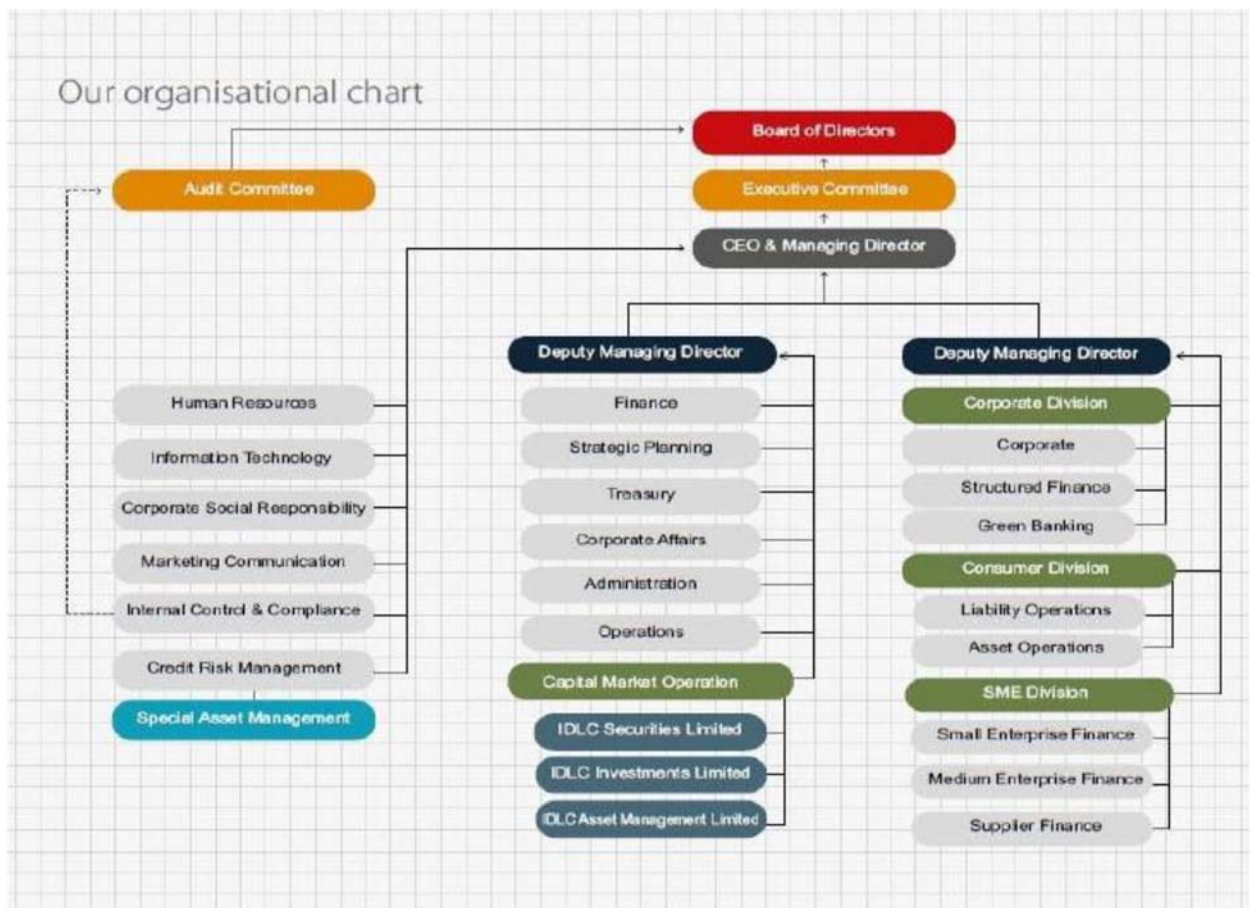


FIG: IDLC FINANCE LTD.

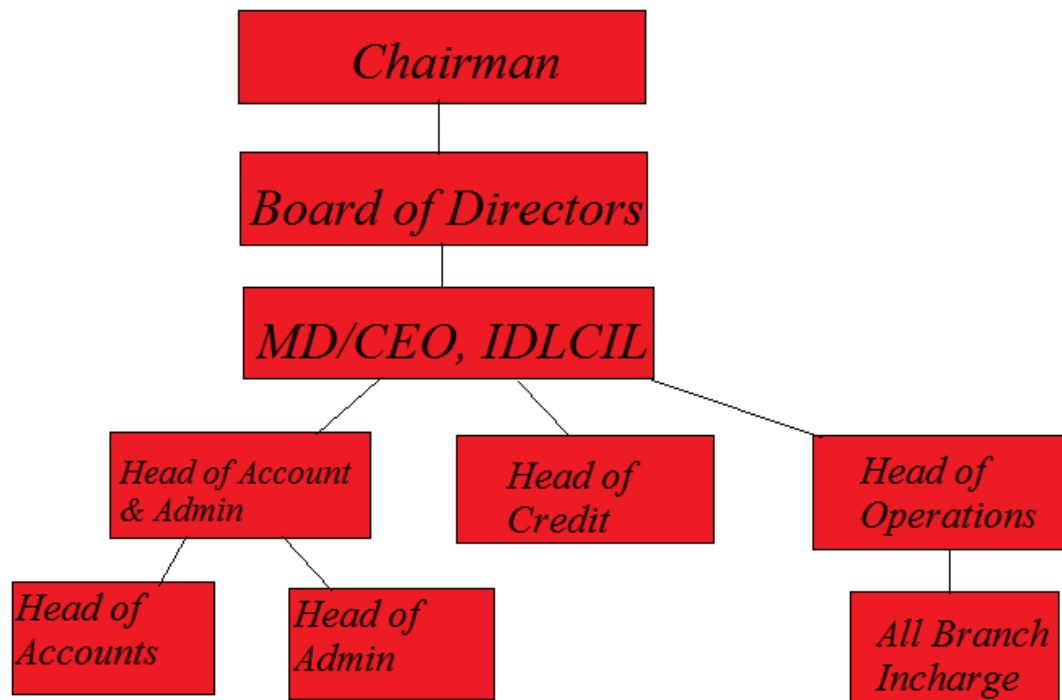


FIG: IDLC INVESTMENTS LIMITED

### ***IDLC Investments Limited***

In accordance to Securities and Exchange Commission, in 2010 IDLC formed a separate subsidiary in order to transfer its merchant banking activities and named it IDLC Investments Limited (IDLCIL). From 2011 IDLC Investments Ltd is fully operational and provides merchant bank services to both corporate and individual clients.

#### **Departments of IDLC Investments Limited:**

- *Portfolio Management*
- *Investment Banking*
- *Research*
- *Settlement*
- *Finance and Control*
- *Margin Loan*
- *Operations.*

## IDLC Balance-Sheet as at 31<sup>st</sup> December 2016

IDLC FINANCE LIMITED

### Balance Sheet


As at December 31, 2016

Particulars	Note	31.12.2016	31.12.2015
		Taka	Taka
<b>PROPERTY AND ASSETS</b>			
<b>Cash</b>	3	976,057,535	891,769,744
In hand (including foreign currencies)	3.1	276,000	266,000
Balance with Bangladesh Bank and its agent (including foreign currencies)	3.2	975,781,535	891,503,744
<b>Balance with other banks and financial institutions</b>	4	9,179,584,564	11,804,324,866
Inside Bangladesh	4(a)	9,179,584,564	11,804,324,866
Outside Bangladesh	4(b)	-	-
<b>Money at call and short notice</b>	5	-	-
<b>Investments</b>	6	2,748,103,457	2,770,947,105
Government		-	300,000,000
Others		2,748,103,457	2,470,947,105
<b>Loans and advances</b>	7	61,135,698,103	53,857,714,206
Loans, cash credit, overdraft etc.		61,135,698,103	53,857,714,206
Bills purchased and discounted		-	-
<b>Fixed assets including land, building, furniture and fixtures</b>	8(c)	606,912,609	502,363,356
<b>Other assets</b>	9	1,858,789,208	1,941,591,577
<b>Non-banking assets</b>		-	-
<b>Total Assets</b>		<u>76,505,145,476</u>	<u>71,768,710,854</u>
<b>LIABILITIES AND CAPITAL</b>			
<b>Liabilities</b>			
<b>Borrowings from other banks, financial institutions and agents</b>	10	12,394,377,442	10,550,165,864
<b>Deposits and other accounts</b>	11	49,413,062,330	47,760,365,293
Current accounts and other accounts etc.		-	-
Bills payable		-	-
Savings bank deposits		-	-
Term deposits		47,563,668,197	46,174,475,236
Bearer certificate of deposits		-	-
Other deposits		1,849,394,133	1,585,890,057
<b>Other liabilities</b>	12	7,093,168,554	6,721,632,975
<b>Total Liabilities</b>		<u>68,900,608,326</u>	<u>65,032,164,132</u>

## *IDLC Finance Limited Profit/Loss Statement*

Particulars	Note	2016	2015
		Taka	Taka
Interest income	19	8,152,388,213	8,023,764,544
Interest on deposits and borrowings etc.	20	(4,622,068,956)	(4,827,091,642)
<b>Net interest income</b>		<b>3,530,319,257</b>	<b>3,196,672,902</b>
Investment income	21	323,468,796	272,881,617
Commission, exchange and brokerage	22	75,401,525	58,053,730
Other operating income	23	506,398,528	433,242,052
<b>Total operating income</b>		<b>4,435,588,106</b>	<b>3,960,850,301</b>
Salaries and allowances	24	884,862,599	744,116,214
Rent, taxes, insurance, electricity, etc.	25	171,261,564	93,372,106
Legal expenses	26	15,320,592	13,536,662
Postage, stamp, telecommunication, etc.	27	29,126,790	26,929,463
Stationery, printing, advertisements, etc.	28	89,943,341	81,059,657
Managing Director's salary and benefits	29	8,875,000	11,493,667
Directors' fees	30	1,490,400	1,041,900
Auditors' fees	31	690,000	517,500
Charges on loan losses		-	-
Depreciation and repair of Company's assets	32	179,115,424	155,451,391
Other expenses	33	300,598,278	266,242,398
<b>Total operating expenses</b>		<b>1,681,283,988</b>	<b>1,393,760,958</b>
<b>Profit before provisions</b>		<b>2,754,304,118</b>	<b>2,567,089,343</b>
<b>Provision for loans and investments</b>	12.7(ii)		
General provision		46,925,871	54,798,590
Specific provision		187,021,074	233,364,352
Provision for diminution in value of investments		(60,498,426)	3,407,068
Other provision		-	-
<b>Total provision</b>		<b>173,448,519</b>	<b>291,570,010</b>
<b>Total profit before taxation</b>		<b>2,580,855,599</b>	<b>2,275,519,333</b>
<b>Provision for taxation</b>			
Current tax expense	12.2	1,089,706,190	1,037,681,898
Deferred tax income	9.5	(5,258,987)	(5,982,686)
		1,084,447,203	1,031,699,212
<b>Net profit after taxation</b>		<b>1,496,408,396</b>	<b>1,243,820,121</b>
<b>Appropriations to:</b>			
Statutory reserves		299,281,679	248,764,024
General reserves		-	-
Dividend etc.		-	-
		299,281,679	248,764,024
<b>Retained surplus</b>		<b>1,197,126,717</b>	<b>995,056,097</b>
<b>Earnings Per Share (EPS)</b>	36	<b>5.95</b>	<b>4.95</b>

### *IDLC Mission and Vision*

 **Mission:** We will focus on quality growth, superior customer experience and sustainable business practices.

 **Vision:** We will be the best financial brand in the country.

# Chapter 3



## **Empirical analysis of 5 DSE Equities**

In this section I will discuss about 5 instruments from Dhaka Stock Exchange, and forecast one year's movement in the price level. A brief description of the company and stocks itself will be given, and later the forecasts will be shown.

For this project I have selected Singer BD, BATBC, Beximco Pharmaceuticals, Square Pharmaceuticals and Grameen Phone. The reason I have chosen these 5 stocks is because from my experience as an intern at IDLC Investments, I have found among many others these 5 stocks to be frequently traded.

### ***Overview of the Companies***

**Singer BD:** Singer first came to Bangladesh during the British Colonial period in 1905. Singer at first started off by only offering sewing machines; however after 1985 it got into other consumer electronic durable goods as well and by 2013 Singer also started offering furniture.

**BATBC:** British American Tobacco started its operation during the Pakistan era in 1910, back then it started by the name of Imperial Tobacco. In 1998 it changed its name to BAT and since is serving the Bangladeshi market.

**Beximco Pharmaceuticals:** Started in 1970s, Beximco used to import from Byer and Upjohn and sold under licensed agreements, today Beximco is one of the largest manufacturer and exporter of pharmaceutical products in Bangladesh.

**Square Pharmaceuticals:** Square began its journey in 1958 as a partnership business and in 1964 became a private limited company. In 1985 it achieved market leadership, and in 1987 Square became the first to export medicine from Bangladesh.

**GrameenPhone:** GrameenPhone or GP as it is known in abbreviation is the largest telecom service provider in Bangladesh with over 46.5% subscriber throughout the country. It is a joint venture of Telenor and Grameen Telecom. GP was the first in Bangladesh to build the cellular network to cover 99% of the country.

## Overview of the Stocks

Singer BD: Singer went for Initial Public Offering (IPO) in 1983 and thus far no further offerings have been made, and as per company policy no explanation is required for that. As of 2016 Singer has paid a dividend of 70% and their stock price has fluctuated between TK 137 to TK 205. As of July their Price Earnings (P/E) Ratio is 27.26 and Earnings per Share (EPS) as of 2016 is 7.12. Below is a graph that shows all month end closing price of Singer BD that will be used to forecast the upcoming months end prices.

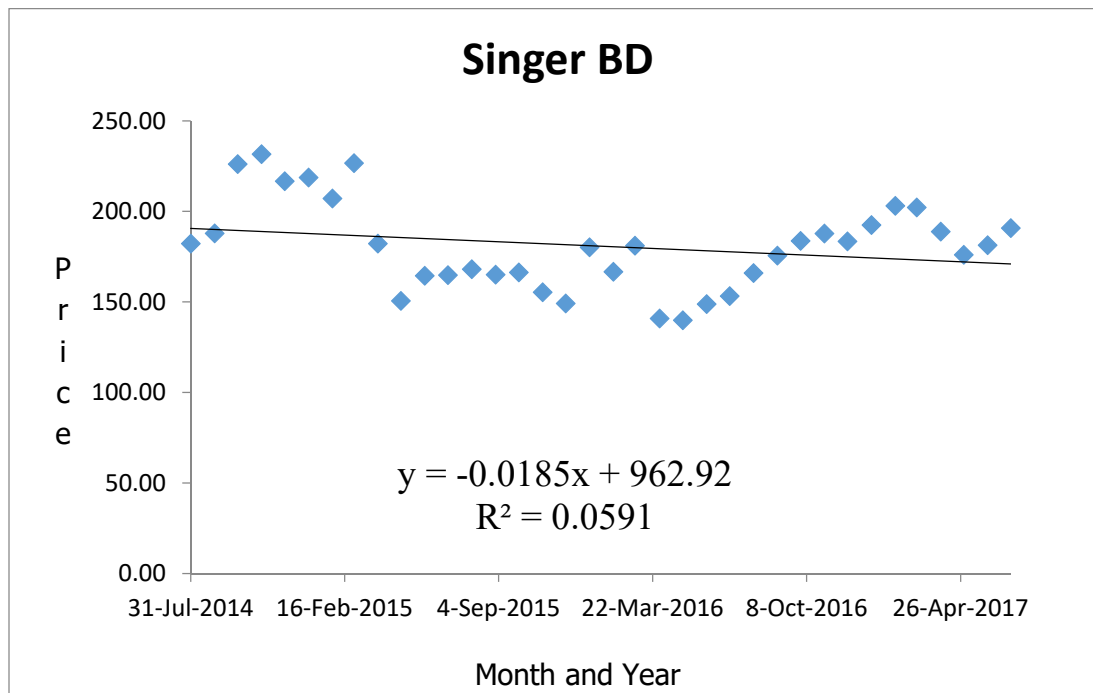


Fig: Singer BD Closing Price Graph

I have taken 3 year's (July 2014-June 2017) month closing price and in the graph it has been shown that during 2014 the price movement was between TK 182 to TK 218.6. In 2015 the price movement was between TK 207 and fell to TK 180.2. In 2016 it was TK 166 to TK 192, and finally in 2017 it started from TK 203 and now it is TK 190. The regression equation is  $y = -0.0185x + 962.92$ , which means at the end of every month on an average price has been dropping by TK 0.000185 or 0.0185 paisa.

BATBC: British American Tobacco Bangladesh went public in 1973 with a face value of TK 10. BATBC is amongst the first to be enlisted in the Dhaka stock exchange as well as the Chittagong stock exchange. 73% of the share is held by British American Tobacco Group 0.64% by

government owned organization, 11% is held by Institutes, 14.4% by Foreign Investors and 0.81% is publicly owned. They are among the top 10 traded stocks in recent times. They pay 600% dividend, in fact one of the highest payers of dividend in Bangladesh. The current P/E ratio of British American Tobacco Bangladesh is 20.51 and EPS is TK 126.37. Below is BATBS's 3 year month closing price chart.

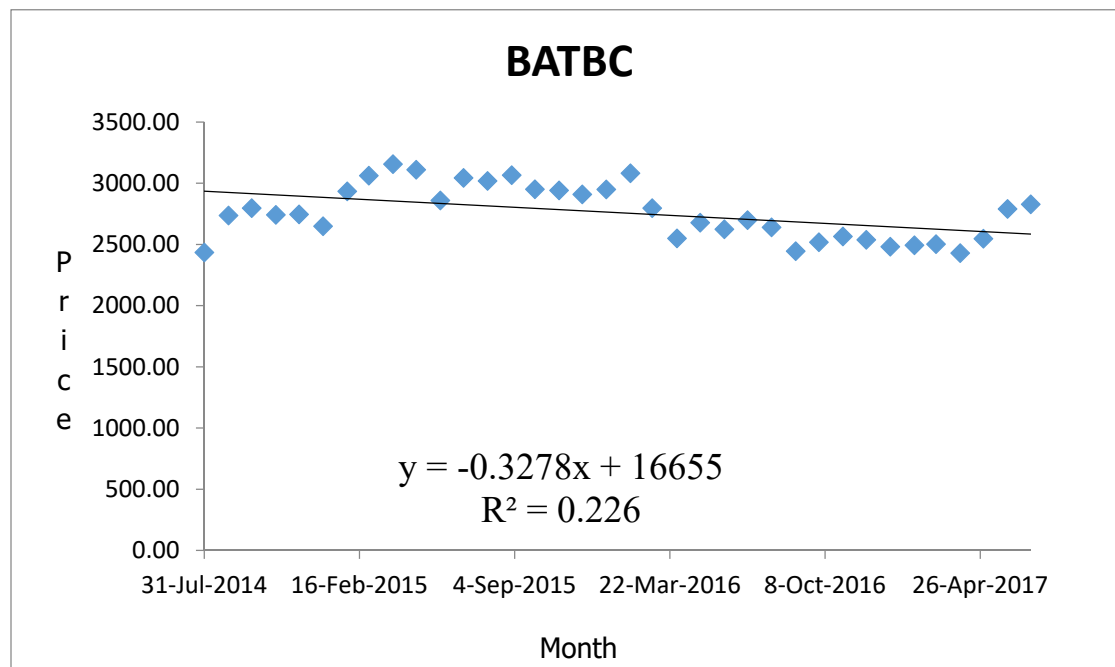


Fig: BATBC Closing Price Graph

In the graph we can see in 2014 the price ranged between TK 2435.4-TK 2650. In 2015 it was TK 2934-TK 2950.5. In 2017 is started with TK 2494 and now is at TK 2829. The regression equation suggests that at the end of every month on an average price has been dropping by .003287 TK or 0.03278 paisa.

Beximco Pharmaceuticals: Listed as PLC in 1986, BxPharma is amongst the well doers in DSC. Beximco gives a dividend of 15%, as of 2016, the P/E ratio is 20.96 and EPS is 7.63. Below is their 3 years month closing price graph.

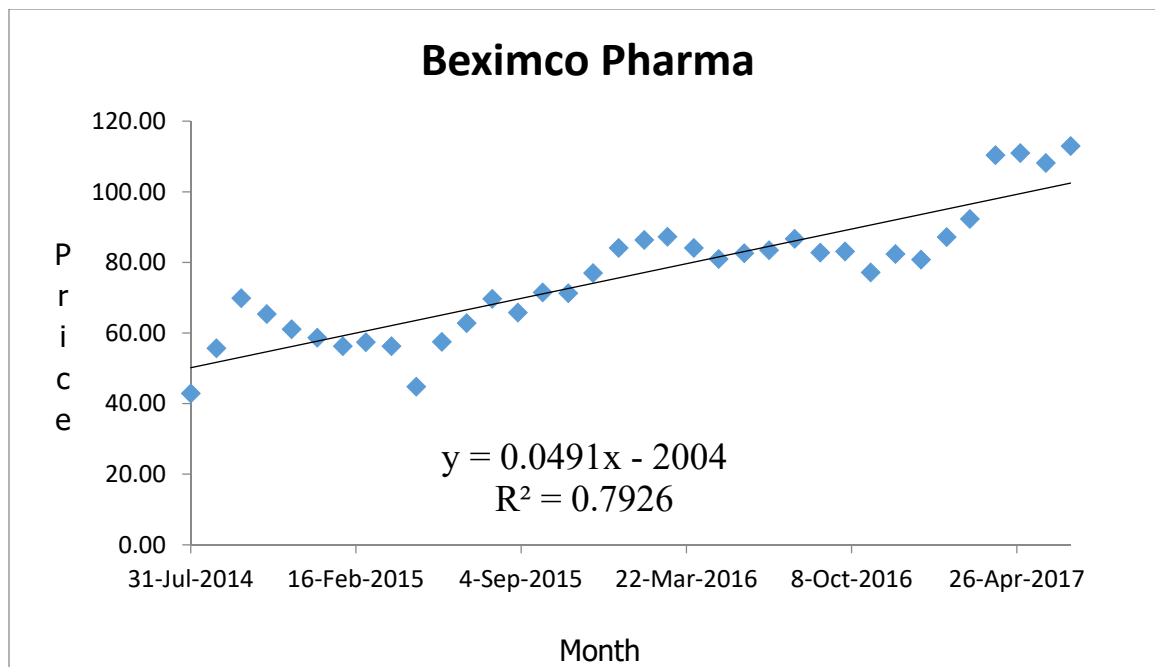


Fig: Beximco Pharmaceutical month end closing Price

In 2014, share price fluctuated between Tk 42.9-TK 58.7. In 2016 it was TK 86.4-TK 80.8 and in 2017 it started from TK 87.2 and now is TK 113. The regression equation shows that on an average at the end of every month price has been increasing by TK 0.000419 or 0.0419 paisa.

Square Pharmaceuticals: Square Pharma became a public limited company in 1991 and initiated IPO in 1994. They pay dividend of 50% with a P/E ratio of 18.69 and EPS of 17.8. Below is Square's 3 years months' closing price graph.

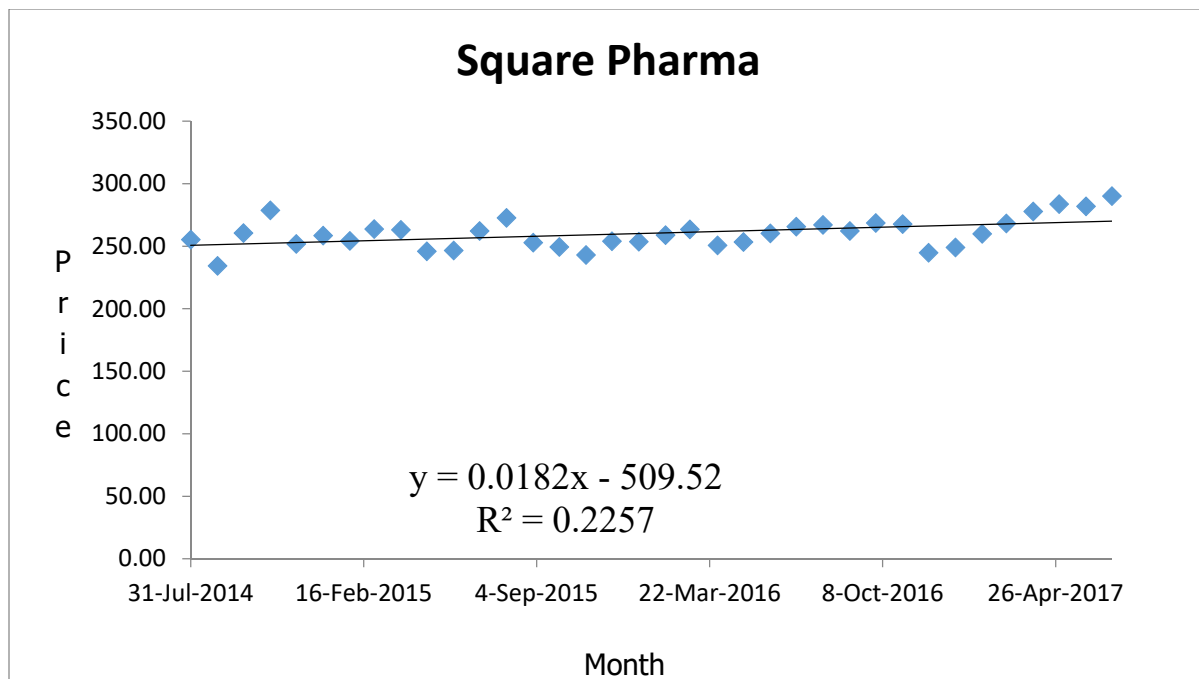


Fig: Square Pharma Month End Closing Price

In 2014 the share price of Square Pharmaceuticals fluctuated between TK 255.3-TK 258.5. In 2015 it was TK 254.3 in January and TK 253.7 in December. In 2017 it started with TK 259.9 and is at TK 290.1. The regression suggests that on an average at the end of every month the price of stock has been increasing by TK 0.000182 or 0.0182 paisa.

GrameenPhone: GP first entered the stock market in 2010 with a face value of TK 10 per share. 55.8% of GP is owned by Telenor, 34.2% by Grameen Telecom and rest by general public. Their dividend rate is 175%, which is really high, thus a great company to invest in. GP's P/E ratio is 17.09 and EPS is 16.68. Below is GP's 3 years months' closing price graph.

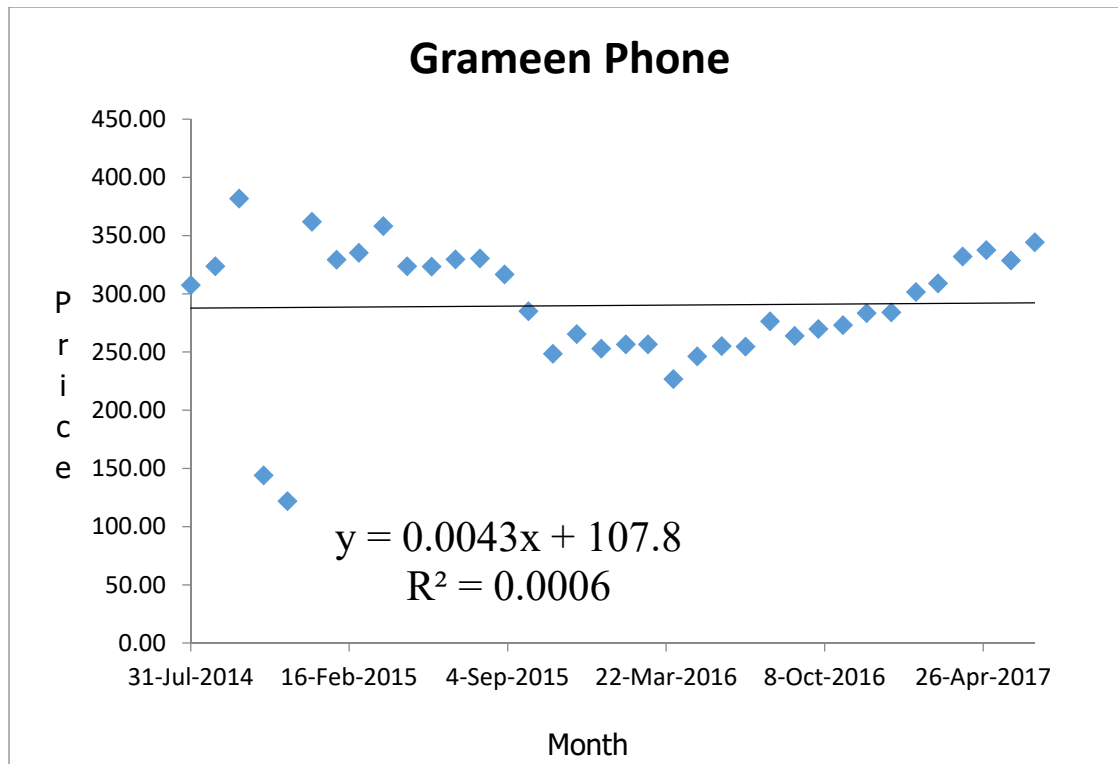


Fig: Grameen Phone Month End Closing Price

In 2014 the price started off with TK 307.5 and ended at TK 361.9. In 2015 it was from TK 329.3 to TK 253. In 2016 it was TK 256.7 and TK 248.1. In 2017 it was TK 301.6 and now it is at TK 344.4. The regression equation  $Y = 0.0043x + 107.8$ , suggests that at the end of every month on an average the price has been increasing by TK 0.000043 or 0.0043 paisa.

#### Forecasting Stock prices

I have taken past three years days, July 2014-June 2017 to predict the month ends price till June 2018. In order to do so I have used the regression equation. The table below shows all the month ends price.

	Singer BD	BATBC	BX PHARMA	Square Pharma	Grameen Phone
31-Jul-2014	182.30	2435.40	42.90	255.30	307.50
31-Aug- 2014	187.90	2737.10	55.70	234.40	323.70
30-Sep-2014	226.20	2798.00	69.90	260.60	381.90
31-Oct-2014	231.70	2743.30	65.40	278.70	144.10
30-Nov- 2014	216.70	2746.30	61.10	251.90	122.00
31-Dec- 2014	218.80	2650.30	58.70	258.50	361.90
31-Jan-2015	207.20	2934.40	56.30	254.30	329.30
28-Feb-2015	226.70	3062.70	57.40	263.80	335.30
31-Mar- 2015	182.30	3156.70	56.30	263.10	358.20
30-Apr-2015	150.60	3111.60	44.80	246.00	323.70
31-May- 2015	164.50	2859.90	57.50	246.60	323.50
30-Jun-2015	164.90	3045.00	62.80	262.20	329.70
31-Jul-2015	168.10	3020.10	69.70	272.70	330.50
31-Aug- 2015	165.10	3067.10	65.80	252.90	316.70
30-Sep-2015	166.40	2952.40	71.50	249.40	285.10
31-Oct-2015	155.40	2942.80	71.30	243.00	248.60

30-Nov- 2015	149.20	2910.00	77.00	254.10	265.50
31-Dec- 2015	180.20	2950.50	84.10	253.70	253.00
31-Jan-2016	166.70	3082.80	86.40	258.90	256.70
28-Feb-2016	181.10	2797.50	87.30	263.50	256.60
31-Mar- 2016	140.90	2550.20	84.10	250.70	226.80
30-Apr-2016	139.90	2678.90	81.00	253.40	246.40
31-May- 2016	148.90	2624.80	82.60	260.30	255.10
30-Jun-2016	153.30	2700.00	83.50	265.70	254.70
31-Jul-2016	166.00	2640.80	86.70	267.10	276.40
31-Aug- 2016	175.60	2446.70	82.80	262.30	263.90
30-Sep-2016	183.80	2519.10	83.10	268.60	269.80
31-Oct-2016	187.80	2566.50	77.20	267.80	273.20
30-Nov- 2016	183.50	2538.70	82.40	244.90	283.40
31-Dec- 2016	192.50	2483.00	80.80	249.10	284.10
31-Jan-2017	203.10	2494.40	87.20	259.90	301.60
28-Feb-2017	202.20	2503.80	92.30	268.20	309.00
31-Mar- 2017	188.90	2429.80	110.40	277.90	332.10



30-Apr-2017	176.10	2547.90	111.00	283.70	337.60
31-May-2017	181.40	2790.70	108.20	282.00	328.70
30-Jun-2017	190.80	2829.30	113.00	290.10	344.40

Fig: All Month End Closing Prices

### Regression Equations

- Singer BD:  $y = -0.0185x + 962.92$
- BATBD:  $y = -0.3278x + 16655$
- Beximco Pharma:  $y = 0.0491x - 2004$
- Square Pharma:  $y = 0.0182x - 509.52$
- GrameenPhone:  $0.0043x + 107.8$

	BX				
	Singer BD	BATBC	Pharma	Square Pharma	Grameen Phone
31-Jul-2017	168.40	2576.97	104.70	272.12	292.47
31-Aug-2017	167.83	2566.81	106.22	272.68	292.61
30-Sep-2017	167.27	2556.98	107.69	273.23	292.73
31-Oct-2017	166.70	2546.82	109.21	273.79	292.87
30-Nov-2017	166.14	2536.98	110.69	274.34	293.00
31-Dec-2017	165.57	2526.82	112.21	274.90	293.13
31-Jan-2018	165.00	2516.66	113.73	275.46	293.26

28-Feb-2018	164.48	2507.48	115.11	275.97	293.38
31-Mar-2018	163.91	2497.32	116.63	276.54	293.52
30-Apr-2018	163.35	2487.48	118.10	277.08	293.65
31-May-2018	162.78	2477.32	119.62	277.65	293.78
30-Jun-2018	162.22	2467.49	121.10	278.19	293.91

Fig: Forecasted Prices

By putting the month instead of X and multiplying it by TK, then adding it to the interception, we get the forecasted prices.

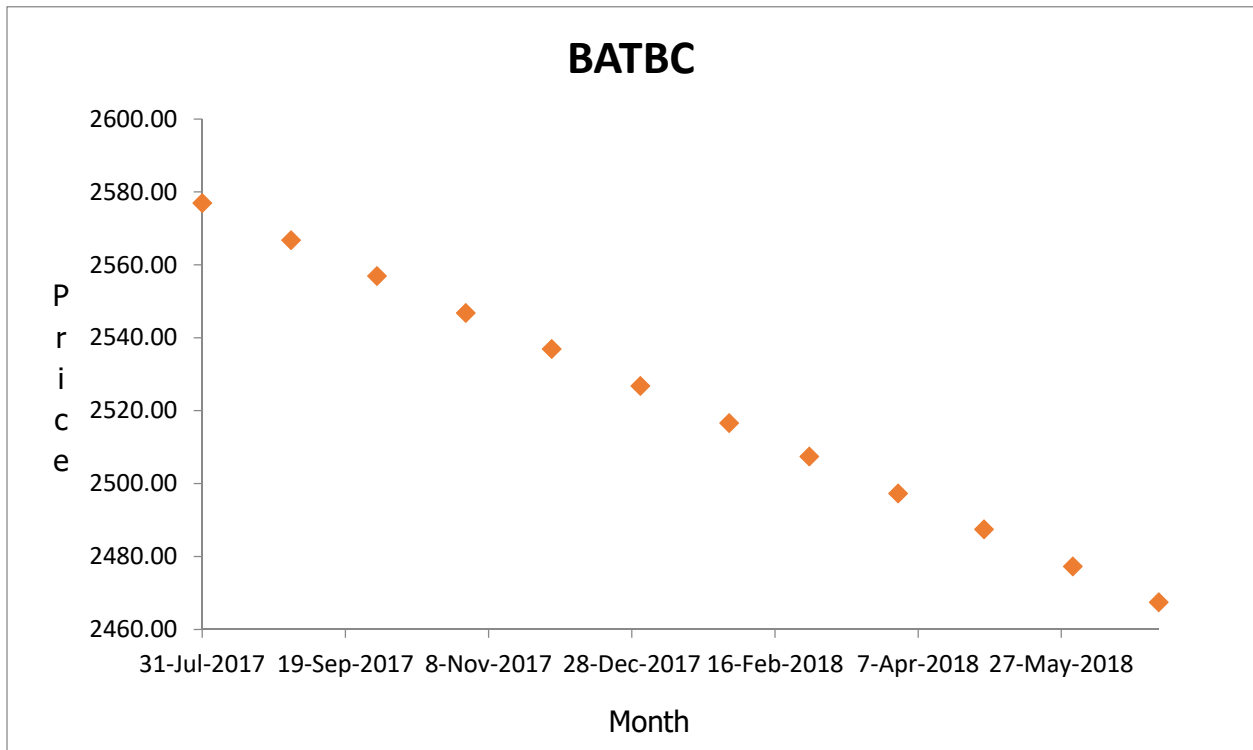


Fig: BATBD Forecasted Price Graph

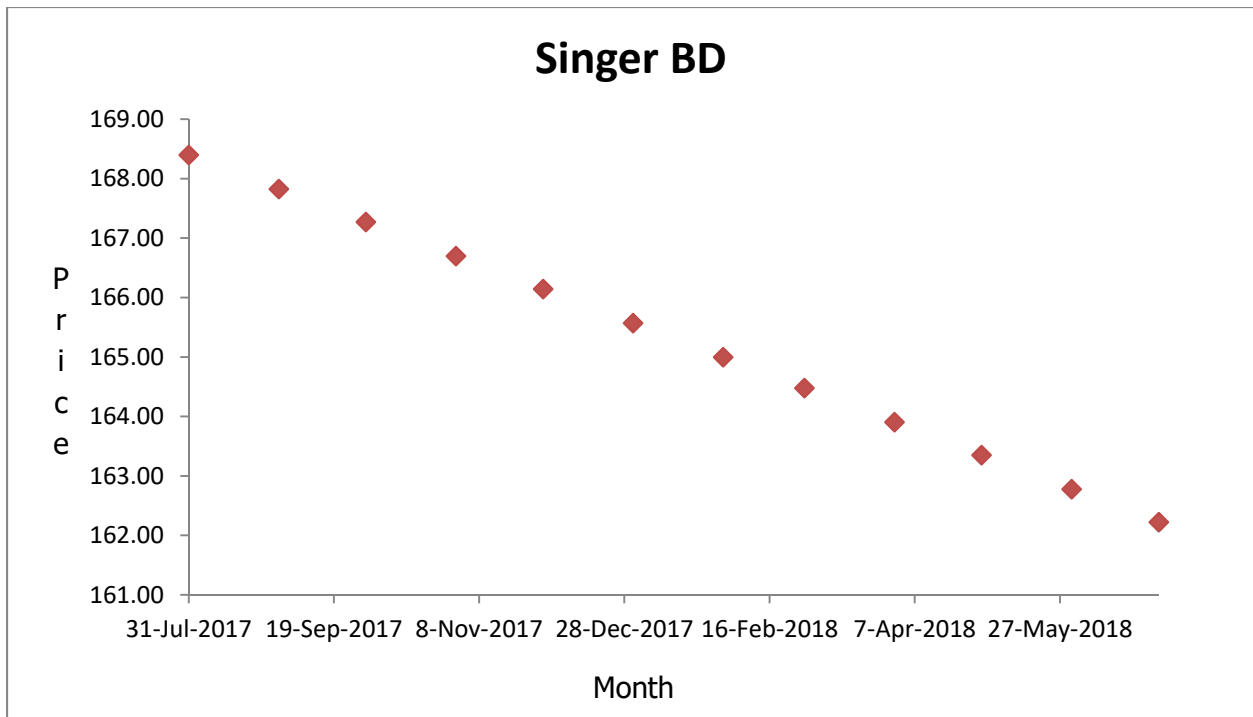


Fig: Singer BD Forecasted Price Graph

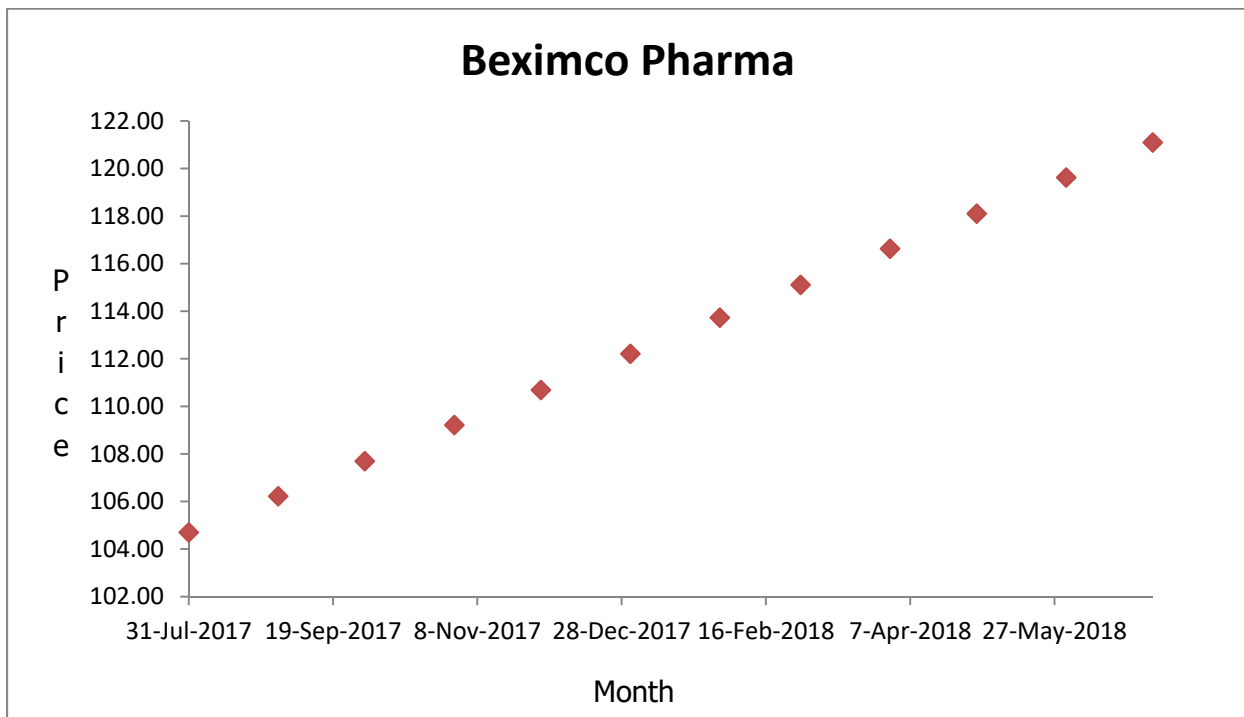


Fig: Beximco Pharma Forecasted Price Graph

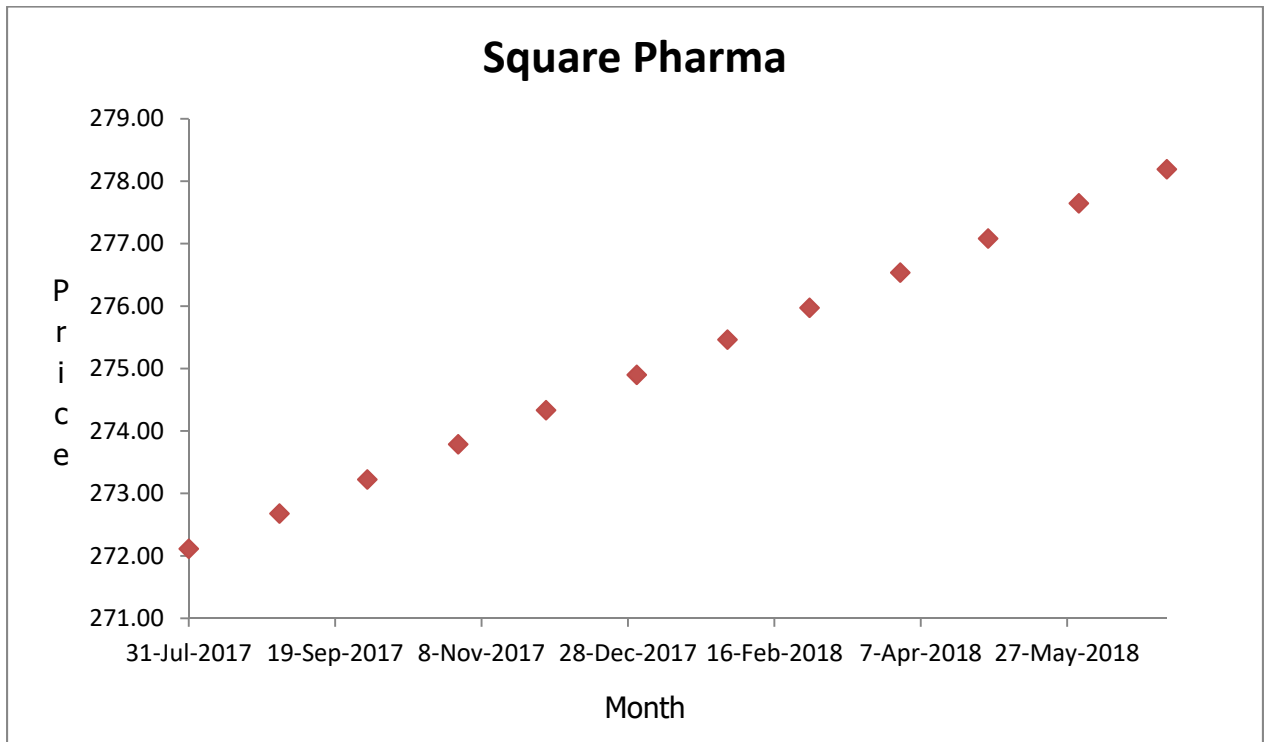


Fig: Square Pharma Forecasted Price Graph

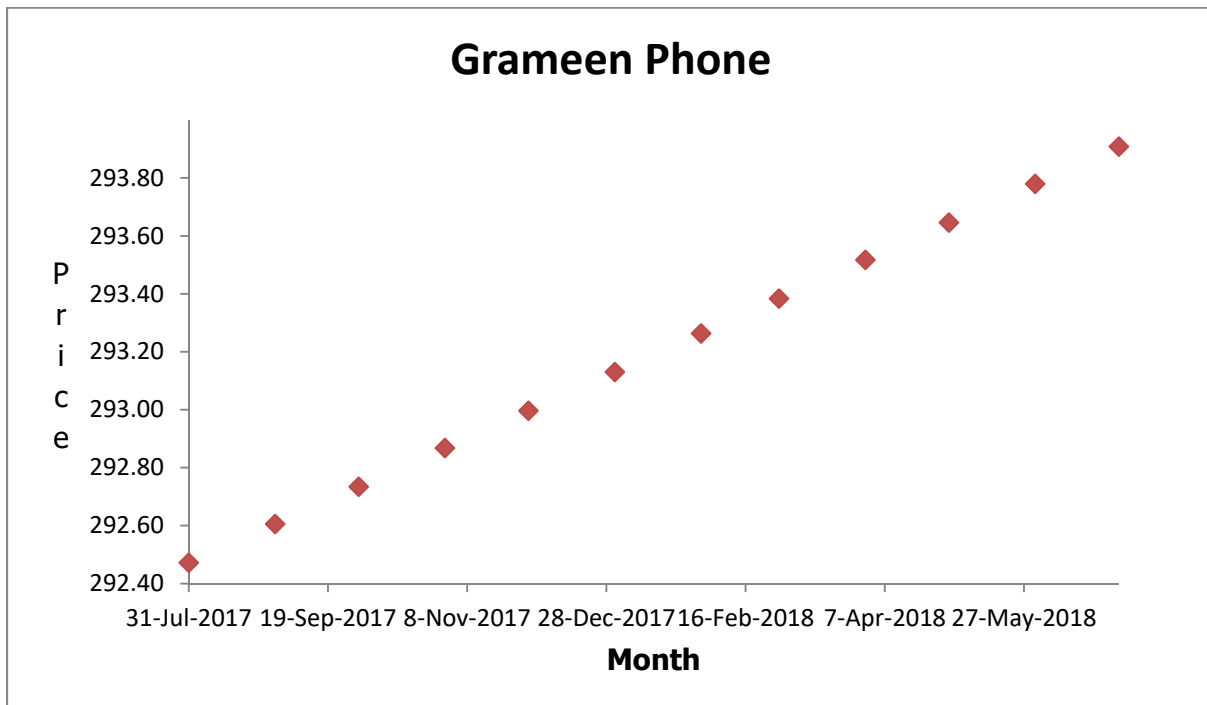


Fig: GrameenPhone Forecasted Price Graph

In the graphs we see that Singer BD and BATBD will most probably will have decline in prices at the end of every month, whereas both pharmaceutical companies and GrameenPhone is likely to increase.

Since I have only taken historical prices in to account the price may differ in the future as stocks prices are subjected to many other factors such as economic, demand/supply, secret knowledge, company reputation and many others.

## Finding out the best portfolio

As previously discussed the stocks that are well off in the current market and presumably in the future market are Beximco Pharmaceuticals, Square Pharmaceuticals and GrameenPhone. So I have decided to make a two stock portfolio out of these three. The portfolio with the highest return will be my suggestion to invest in.

In order to find out we need to find out the portfolio expected return, the risk/standard deviation and co-variance. Even in order to do so, the expected return of each individual return needs to be found out. All the workings and suggested portfolio will be shown below.

BX Pharma	SQ Pharma	GP
0.044362	0.028723	0.047764
-0.02523	-0.00599	-0.02636
0.005435	0.020871	0.016561
0.1961	0.036167	0.074757
0.058486	0.031935	0.024536
0.079208	0.043356	0.061598
-0.01942	0.01715	0.00247
0.067358	-0.08551	0.037335

-0.071	-0.00298	0.012602
0.003623	0.024018	0.022357
-0.04498	-0.01797	-0.04522
0.038323	0.005269	0.085198
0.010896	0.020745	-0.00157
0.019753	0.02723	0.035308
-0.03686	0.01077	0.08642
-0.03666	-0.04858	-0.11613
0.010417	0.017767	-0.00039
0.027348	0.020497	0.014625
0.092208	-0.00157	-0.04708
0.079944	0.045679	0.067981
-0.0028	-0.02566	-0.12803
0.086626	-0.01384	-0.09978
-0.05595	-0.07261	-0.04175
0.109873	0.040046	0.002426
0.092174	0.06326	0.019165
0.283482	0.002439	-0.00062
-0.20426	-0.06499	-0.09631
-0.01916	-0.00265	0.068297
0.019538	0.037357	0.01822
-0.04089	-0.01625	-0.09008

-0.03928	0.026201	1.966393
-0.06575	-0.09616	-0.15337
-0.06438	0.069455	-0.62268
0.254937	0.111775	0.179796
0.298368	-0.08186	0.052683

Fig: Return of 3 Stocks

From this data the expected return,  $E(R)$ , average return and the standard deviation can be found out. The  $E(R)$  and StDev of these three stocks are-

- Beximco Pharmaceuticals:  $E(R) = 0.032909951$ ,  $StDev = 0.103617109$
- Square Pharmaceuticals:  $E(R) = 0.004687949$ ,  $StDev = 0.04580238$
- GrameenPhone:  $E(R) = 0.040774875$ ,  $StDev = 0.358081775$

	bx	sq
bx	0.01042975	0.00124627
sq	0.00124627	0.00203792

Fig: Co-Variance of Beximco and Square

	bx	gp
bx	0.0104297	0.0011393
gp	0.0011393	0.1245591

Fig: Co-Variance of BEximco and GrameenPhone

	sq	gp
sq	0.0020379	0.0019132
gp	0.0019132	0.1245591

Fig: Co-Variance of Square and GrameenPhone

Sum	Weight BX Pharma	Weight Square Pharma	Ret Port	Risk Port
1	8%	92%	1%	4%

Sum	Weight BX Pharma	Weight Grameen Phone	Ret Port	Risk Port
1	93%	7%	3%	10%

Sum	Weight Square Pharma	Weight Grameen Phone	Ret Port	Risk Port
1	100%	0%	0.47%	4.51%

Fig: Portfolio Risk and Return

If we invest in the first portfolio, which is on Beximco Pharma and Square Pharma, we get an E(R) of 1% and StDev of 4%. In the portfolio of Beximco Pharma and GrameenPhone we get E(R) of 3% and StDev of 10%. Finally, in the portfolio containing Square Pharma and Grameen Phone, we get expected return and standard deviation of 0.47% and 4.51%. Therefore, I would suggest making an investment in the portfolio of Beximco Pharma and GrameenPhone.



### ***Key Findings and Recommendations***

As above mentioned Stock Market is a very volatile business to invest in as it is subjected to endless number of factors, therefore within my limitations I have taken into consideration the historical price factors only. One major discovery that I have made is, Pharmaceutical companies are doing brilliant in the current market.

I would recommend investing in a mixed portfolio of different industry stocks that that the chances of making a loss would decline, at least this is what I have learned from my experience from a financial institution.

If an investor is an active investor then I have suggested ways to make investment decision, but in case of passive investors it is better to leave it in the hands of experts in the organization.

### **Conclusion**

As it comes to an end, I would hope that this report has achieved its purpose and will give its readers a clear idea about how to make investments amongst many ways.

Working at IDLC Investments Limited has been fun and I hope to work with them in the near future.

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