Financial Diagnosis of Selected Listed Pharmaceutical Companies in Bangladesh

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Abstract:

Bangladesh has made impressive economic and social progress in the past decade, despite frequent natural disasters and external shocks. The average GDP growth over the last five years was over 6%. In Bangladesh the pharmaceutical sector is one of the most developed hi-tech sectors within the country's economy. This sector is also providing about 97% of the total medicine requirement of the local market. But the financial progress of this industry is not satisfactory. Financial diagnosis indicates how well a company uses its assets, shareholders' equity & liability, revenue and expenses. This study attempts to refer to judgment of financial health, strength and weakness of this industry by measuring its past, present and future financial performance and risks. In spite of satisfactory level of bankruptcy of the industry as found by The Z-Score Model, it was observed from the study that the liquidity, profitability and solvency position of most of the selected pharmaceuticals are in average position. The causal factors behind this position are unsound financial management, inadequate working capital, slow conversion of receivables and inventory into cash, lower position of sales, higher amount of debt, no professional distribution house, restrictions on patent right, fixed mark-up system, contrary policy of the government, vulnerability of environmental risk and increased cost of production. Therefore, the concerned authority should take immediate measures for overcoming these limitations.

Keywords: Financial Diagnosis, Pharmaceuticals, Ratio Analysis, Correlation, T-test, Z-Score.

1. Introduction:

After the promulgation of Drug Control Ordinance-1982, the development of the pharmaceutical sector has accelerated. Among the various listed companies in Bangladesh pharmaceuticals are playing a vital role for the economical development and industrialization of the country. Due to recent development of this sector it is exporting medicines to global market. It earns a lot of foreign currency through exporting its products after meeting the domestic needs of the country's health sector. The professional knowledge, thoughts and innovative ideas of the pharmaceutical professionals working in this sector are the key factors for these developments. Recently few new companies have been established with hi-tech equipments and qualified professionals which will enhance the strength of this industry. The company is subject to a process of decision-making which ensures its regulation to function normally. In case a disturbance appears within the company, steps will be taken in way of adopting some regulatory decisions, starting from the causes for the further development of the institution as well as the industry. This is where the diagnosis appears, with the role of identifying the causes that have offset the well being of the company. Financial diagnosis is a process of evaluating the relationship between component parts of financial statements to obtain a better understanding of the company's position and performance. A short-term creditor will be interested in the current financial position of a company, while a long-term creditor will pay more attention to the solvency of the company. The long-term creditor will also be interested in the profitability of the company. The equity shareholders are generally concerned with their return. Performing a company diagnosis is done not only when the company is facing problems, but also when the evaluation of its performance is considered or when the company is in good health, but improvement is desired. The financial diagnosis can arise in various

situations, taking on various traits: It becomes a *strategic diagnosis* when it follows the company's strengths and weaknesses, both in using its economic potential and in relation to the external business environment. It is elaborated as a *stock-market diagnosis* when it considers the relationship of the company with the stock market, if the company is quoted on the market. The indicators supplied by the diagnosis are an important element in guiding the purchase or sale of stock, both for the company and for the other investors in the stock market. It is a *valuation diagnosis* when it contributes to clarifying some necessary elements for establishing the value of a company, in case of investment, mergers, etc. The financial diagnosis can determine directly the patrimony value of the company or can supply the indicators necessary for establishing its yield value, because it allows the evaluation of the company's durable beneficiary capacity, when it intervenes in order to determine the difficulties a company is facing and follows its stabilization, it is a *crisis diagnosis*. In this study, the priority of the diagnosis is to determine whether the selected pharmaceuticals are capable to maintain or to regain their short-term and long-term solvency with desirable profit margin.

2. Objectives of the Study:

The objectives of financial diagnosis are based on what is monitored within the company and are subordinate to the interests of the users. Generally, the financial diagnosis provides information regarding: how the company's activities are carried out throughout the examined period and what is the growth rate compared to that of the sector; whether the results obtained are proportionate to resources used and whether the growth is accompanied by a satisfactory yield; what is the financial structure of the company and whether it is balanced or not, in the context of the ratio between the capital masses for a suitable financial support; whether the company has weaknesses and whether or not there is an increased bankruptcy risk. The study is designed to achieve the following objectives:

- To diagnose financial performance of the selected pharmaceuticals.
- To find out the interrelation among the short-term solvency, earning capacity and long- term solvency of the pharmaceutical industry.
- To assess the future growth prospect of the selected pharmaceuticals.
- To find out the limitations, if any, to the further development of the selected pharmaceuticals and taking corrective measures.

3. Review of Related Studies:

"Financial Statements are like a fine perfume to be sniffed but not swallowed." - Abraham Brillofff. Altman (1968) used financial ratios with The Z-Score Model to predict corporate bankruptcy. He observed that the model is very successful in predicting failed and non-failed firms. Hannan and Shaheed (1979) used financial ratios to examine the financial position and performance of Bangladesh Shilpa Bank. They revealed that techniques of financial analysis can be used in the evaluation of financial position and performance of financial institution as well as non-financial institutions even Development Financial Institutions (DFI). Ohlson (1980) used financial ratios to predict a firm's crisis. He found that there are four factors affecting a firm's vulnerability. These factors are the firm's scale, financial structure, performance and liquidity. Khan (1991) suggested ratio analysis as the tool for the evaluation of the financial performance of the particular organization. Mina & Taleb (1995) summarized that the analysis and interpretation of financial statements are generally aimed at determining the financial position of a firm. Financial ratio was used as an analytical technique for assessing the performance of the concern. Jahur and Mohiuddin (1995) used financial ratios to measure operational performance of a limited company. They used profitability, liquidity, activity and capital structure ratios to measure operational performance. Jahur and Parveen (1996) used Altman's MDA Model to conclude the bankruptcy position of Chittagong Steel Mills Ltd. They found that the absence of realistic goals and strict Govt. regulations are the main reasons for the lowest level of bankruptcy. Bala & Habib (1997) suggested that ratio analysis can be used for the performance evaluation of the financial institutions. They also used portfolio theories for calculating NAV (Net Asset Value) of mutual funds. Hye & Rahman (1997) performed a research to assess the performance of the selected private sector general insurance companies in Bangladesh. The study revealed that the private sector insurance companies had made substantial progress

and were keeping their surplus funds in the form of fixed deposits with different commercial banks due to absence of suitable opportunities for investment. Sina and Ali (1998) used financial ratios to test the financial strengths and weaknesses of Khulna Newsprint Mills Ltd. They found that due to lack of planning and control of working capital, operational inefficiency, obsolete store, ineffective credit policy, increased cost of raw materials, labor and overhead, the position of the company was not good. In the article "The Assessment of Financial and Operating Performance of the Cement Industry: A Case Study of Confidence Cement Limited", Dutta and Bhattacharjee (2001) found that the investment in cement industry was fairly profitable. Salauddin (2001) examined the profitability of the pharmaceutical companies of Bangladesh. By adopting ratio analysis, mean, standard deviation and co-efficient of variation, he found that the profitability of the pharmaceutical sector was very satisfactory in terms of the standard norms of return on investment. Wen-Cheng LIN et. al (2005) stated financial ratios as the simplest tools for evaluating the financial performance of the firm. One can use financial ratios to determine a firm's liquidity, profitability, solvency and capital structure. Reilly and Brown (2005) stated that financial statement analysis seeks to evaluate managerial performance in several important areas including profitability, efficiency and risk. The ultimate goal of that analysis is to provide insights that will help us project future managerial performance. They also suggest that financial ratios should be examined relating to the economy, the firm's industry, firm's main competitors and the firm's past relative ratios. Islam, Farzana and Rahman (2009) conducted a research on financial diagnosis of the financial institutions of Bangladesh: A comparative study on IPDC, IDLC and ICB and through ratio analysis they measured the financial health of the financial institutions and concluded that financial institutions play a key role in the economic development of capital market of the country. Hassan and Habib (2010) used financial ratios for conducting a research on performance evaluation of the pharmaceutical companies in Bangladesh. They revealed that the financial performance of Beximco Pharmaceuticals Ltd. is better than Square Pharmaceuticals Ltd. Majumder and Rahman (2011) used financial ratios and Prof. Altman's MDA Model (The Z-Score Model) for financial analysis of selected pharmaceutical companies in Bangladesh. They observed from the study that the profitability, liquidity and solvency position of the selected pharmaceuticals are not in sound position and it was also observed that most of the selected pharmaceuticals have a lower level position of bankruptcy. These reviews provide that for the overall financial diagnosis of the selected listed pharmaceutical companies in Bangladesh, ratio analysis and Professor Altman's The Z-Score Model are the most fruitful techniques. In this study financial diagnosis is made for the five selected listed pharmaceutical companies in Bangladesh for a period of three years from 2006-2007 to 2008-2009.

4. Hypothesis:

The research is conducted on the basis of the following hypotheses:

H_0: The difference between the industry and the individual pharmaceutical's mean ratio is not significant.

H_1: The difference between the industry and the individual pharmaceutical's mean ratio is significant.

The hypotheses are tested at the 5% level of significance (Two-tailed).

5. Methodology of the Study:

We have collected the data from a random sample of five listed pharmaceutical companies which are enlisted both in Dhaka Stock Exchange Ltd. and Chittagong Stock Exchange Ltd. of Bangladesh. The study is based on a three year period from 2006-2007 to 2008-2009. Both primary as well as secondary sources of information have been considered as a data collection process. The secondary information of the study was collected from the websites, published literature, research papers and various reports of the sample pharmaceuticals. The primary data was collected through personal interview and discussions with the concerned executives of the selected pharmaceuticals. These data have been tabulated, analyzed and interpreted with the help of different financial ratios, statistical tools like mean, standard deviation, coefficient of variation, coefficient of correlation, T- test and The Z-Score Model. The hypotheses are tested through statistical measurement to arrive at systematic conclusion and contribute to the further development of research work regarding same perspective.

6. Analysis and Results:

The ratio analysis is the most powerful tool of financial diagnosis of a company or an industry. It can be used to compare the risk and return relationships of the companies of different sizes. The term ratio refers to the numerical or quantitative relationship between two items or variables. This relationship can be expressed as percentages, fraction and proportion of numbers. Many diverse groups of people (shareholders, creditors, investors, management etc.) are interested in analyzing the financial information to know about the operating and financial efficiency and growth of the company.

6.1 Liquidity ratios:

Liquidity is the ability of a company to readily and easily obtain cash from its asset in order to meet its short-term obligations or make purchase. This is done by comparing a company's most liquid assets (or those that can be easily converted to cash) to its short-term liabilities. In general the greater the coverage of liquid assets to short term liabilities the better as it is a clear signal that a company can pay its debts that is coming due in near future and still funds its ongoing operations. On the other hand, a company with a lower coverage rate should raise a red flag for investors as it may be a sign that the company will have difficulty to meet its operational as well as short-term obligations.

6.1.1 Current Ratio [CR]:

The current ratio is a popular financial ratio used to test a company's liquidity by deriving the proportion of current assets available to cover current liabilities. The concept behind this ratio is to ascertain whether a company's short term assets (cash, cash equivalent, marketable securities, receivable, inventory etc.) are readily available to pay off its short term liabilities (notes payable, current portion of term debt, payables, accrued expenses, taxes etc.). It is computed by dividing current assets by current liabilities. Generally 2:1 is considered as the standard norm for current ratio. If the ratio is too low, the company may face difficulty in meeting the short term debt. If the ratio is too high, the company may have an excessive investment in current assets. As the Table-01 depicts that, the industry average of current ratio is 1.130:1 which indicates that the industry is able to meet its current obligations from its current assets. The average current ratio varies from 0.752:1 in ISPIL to 1.960:1 in BPL. The average of ISPIL-0.752:1, LIL-0.781:1 and OIL-0.771:1 is below from the industry average and also from the standard norm. The average of SPL-1.387:1, BPL-1.960:1 is above from the industry average but below from the standard norm. It is observed from the Table-01 that in case of SPL, BPL, ISPIL, LIL and OIL the current ratio of the income year 2006-2007, 2007-2008 and 2008-2009 are 1.440:1, 1.260:1, 1.460:1; 1.800:1, 1.100:1, 2.980:1; 0.694:1, 0.832:1, 0.730:1; 0.814:1, 0.840:1, 0.690:1 and 0.706:1, 0.825:1, 0.782:1 respectively. It can be said from the study that the liquidity position of the most of the selected pharmaceuticals is not satisfactory to meet its short-term obligations. From the Table-01 it is seen that the CR of the selected pharmaceuticals is less stable (CV: SPL-7.947%, BPL-48.48%, ISPIL-9.548%, LIL-10.24% and OIL-7.782%). From the calculated value of t, it is found that, there is a significant difference in current ratio between industry average and ISPIL, LIL and OIL. On the other hand there lies an insignificant difference in current ratio between industry average and SPL and BPL.

6.1.2 The Quick/Liquid/Acid-Test Ratio [ATR]:

It is a liquidity indicator that further refines the current ratio by measuring the amount of the most liquid current assets available to cover current liabilities. The quick ratio is more conservative than the current ratio because it excludes inventory and other current assets which are more difficult to turn into cash. Acid-Test or quick ratio measures the company's immediate short-term liquidity. It is computed by dividing the sum of cash, short-term investments and net receivables by current liabilities. In this ratio, 1:1 is considered as the standard norm. The Table-02 shows that the industry average of ATR is 0.512:1. The average ATR of SPL-0.677:1 and BPL-1.158:1 is above from the industry average but here, only BPL-1.158:1 is above from the standard norm and SPL-0.677:1 is under the standard norm. The average of ISPIL-0.253:1, LIL-0.213:1 and OIL-0.262:1 is below from the industry average as well as the standard norm. It indicates that the selected pharmaceuticals except BPL are unable to pay immediate short term liabilities. It is observed from the

Table-02 that in case of SPL, BPL, ISPIL, LIL and OIL the ATR of the income year 2006-2007, 2007-2008 and 2008-2009 are 0.790:1, 0.630:1, 0.610:1; 0.763:1, 0.500:1, 2.210:1; 0.170:1, 0.323:1, 0.265:1; 0.217:1, 0.216:1, 0.205:1 and 0.192:1, 0.313:1, 0.282:1 respectively. From the Table-02 it is clear that the ATR of the selected pharmaceuticals is less stable (CV: SPL-14.56%, BPL-79.54%, ISPIL-30.68%, LIL-3.130% and OIL-23.94%). From the calculated value of t, it is observed that there is a significant difference in ATR between industry average and ISPIL, LIL and OIL. On the other hand there lies an insignificant difference in ATR between industry average and SPL and BPL.

6.1.3 Receivables Turnover [RT]:

The ratio used to assess the liquidity of the receivables is called receivables turnover. It measures the number of Times on average the company collects receivables during the period. The higher receivables turnover indicates the better performance of the company. The Table-03 shows that the industry mean of RT is 525.2 Times. The average RT varies from 7.390 times in BPL to 2569 Times in ISPIL. But the Table-03 shows that, there is an exceptional average RT of 2569 Times in the ISPIL as compare to other selected pharmaceuticals. The average RT of the selected pharmaceuticals except ISPIL is below from the industry average. It is observed from the Table-03 that in case of SPL, BPL, ISPIL, LIL and OIL the RT of the income year 2006-2007, 2007-2008 and 2008-2009 are 23.23, 22.92, 20.56; 7.199, 7.958, 7.014; 4468, 1760, 1479; 14.56, 23.85, 12.26 and 10.91, 10.35, 10.73 Times respectively. It is observed from Table-03 that the RT of ISPIL and LIL is less stable than SPL, BPL and OIL (CV: SPL-6.567%, BPL-6.786%, ISPIL-64.25%, LIL-36.33% and OIL-2.681%). From the calculated value of t, it is found that there is a significant difference in RT between industry average and SPL, BPL, LIL and OIL. On the other hand there lies an insignificant difference in RT between industry average and ISPIL.

6.1.4 Inventory Turnover [IT]:

Inventory turnover measures the number of Times, on average, the inventory is sold during the period. The purpose of inventory turnover is to measure the liquidity of the inventory. It is computed by dividing cost of goods sold by the average inventory. Unless seasonal factors are significant, beginning and ending inventory balances are considered to compute average inventory. Some authors consider the standard figure of inventory turnover is 8 Times. The Table-04 shows that the industry average of IT is 4.471 Times. The average IT varies from 1.367 Times in BPL to 11.01 Times in ISPIL. Only the average of ISPIL-11.01 is above from the industry average. It is observed from the Table-04 that in case of SPL, BPL, ISPIL, LIL and OIL the IT of the income year 2006-2007, 2007-2008 and 2008-2009 are 2.960, 2.720, 2.750; 1.200, 1.300, 1.600; 9.150, 11.02, 12.85; 3.920, 5.190, 3.510 and 2.480, 3.334, 3.077 Times respectively. The Table-04 shows that the IT of the selected pharmaceuticals is less stable (CV: SPL-4.655%, BPL-15.23%, ISPIL-16.81%, LIL-20.82% and OIL-14.78%). From the calculated value of t, it is found that there is a significant difference in IT between industry average and SPL, BPL, ISPIL and OIL. On the other hand there lies an insignificant difference in IT between industry average and LIL.

6.2 Profitability Ratios:

Profitability is one measurement of how successful a company is. The more profitable the company, the more money the company is making. Profitability refers to a company's ability to generate an adequate return on invested capital. Return is judged by assessing earnings relative to the level and sources of financing. Profitability is also relevant to solvency. Profitability ratios measure the income or operating success of a company for a given period of time. Income or lack of it, affects the company's ability to obtain debt and equity financing. It also affects the company's liquidity position and the company's ability to grow. As a consequence, both creditors and investors are interested in evaluating earning power or profitability. Analysts frequently use profitability as the ultimate test of management's operating effectiveness.

6.2.1 Profit Margin [PM]:

Profit margin is a measure of the percentage of each Taka of sales that results in net income. It is computed by dividing net income by net sales. The profit margin must be positive and some authors consider the standard figure of PM is 5%-10%. As the Table-05 shows that the industry average of PM is 8.158%. The average PM varies from 1.557% in LIL to 17.67% in SPL. The average of SPL-17.67% and BPL-12.07% are above from the industry average. The average of ISPIL-3.837%, LIL-1.557% and OIL-5.662% are below from the industry average. It is observed from the Table-05 that in case of SPL, BPL, ISPIL, LIL and OIL the PM of the income year 2006-2007, 2007-2008 and 2008-2009 are 17.00%, 17.00%, 19.00% ; 9.800%, 13.60%; 12.80%; 3.550%, 4.110%, 3.850%; 1.930%, 1.550%, 1.190% and 3.940%, 7.507% , 5.539% respectively. The Table-05 shows that the PM of the selected pharmaceuticals is less stable (CV: SPL-6.536%, BPL-16.60%, ISPIL-7.303%, LIL-23.77% and OIL-31.56%). From the calculated value of t, it is found that there is a significant difference in PM between industry average and SPL, ISPIL and LIL. On the other hand there lies an insignificant difference in PM between industry average and BPL and OIL.

6.2.2 Asset Turnover [AT]:

Asset turnover measures how efficiently a company uses its assets to generate sales. It is determined by dividing net sales by average assets. The resulting number shows the Taka of sales produced by each Taka invested in assets. Some authors consider the standard figure of asset turnover is 2 Times. The Table-06 shows that the industry mean of AT is 1.020 times. The average AT varies from 0.293 Times in BPL to 2.253 Times in ISPIL. The average AT of ISPIL-2.253 and LIL-1.193 are above from the industry average. On the other hand, the average of SPL-0.743, BPL-0.293 and OIL-0.619 Times are less from the industry average. It is observed from the Table-06 that in case of SPL, BPL, ISPIL, LIL and OIL the AT of the income year 2006-2007, 2007-2008 and 2008-2009 are 0.760, 0.710, 0.760; 0.300, 0.299, 0.280; 2.160, 2.310, 2.290; 1.170, 1.400, 1.010 and 0.480, 0.699, 0.677 Times respectively. It is seen from the Table-06 that the AT of the selected pharmaceuticals is less stable (CV: SPL-3.928%, BPL-3.413%, ISPIL-3.604%, LIL-16.43% and OIL-19.46%). From the calculated value of t, it is observed that there is a significant difference in AT between industry average and SPL, BPL, ISPIL and OIL. On the other hand there lies an insignificant difference in AT between industry average and LIL.

6.2.3 Return on Asset [ROA]:

An overall measure of profitability is return on asset. We compute this ratio by dividing net income by average assets. The return on asset must be positive and some authors consider the standard figure of ROA is 10%-12%. The Table-07 shows that the industry average of ROA is 6.208%. The average varies from 1.877% in LIL to 13.33% in SPL. The average of SPL-13.33% and ISPIL-8.653% are above from the industry average. On the other hand, the average of BPL-3.553%, LIL-1.877% and OIL-3.623 are below from the industry average. It is observed from the Table-07 that in case of SPL, BPL, ISPIL, LIL and OIL the ROA of the income year 2006-2007, 2007-2008 and 2008-2009 are 13.00%, 12.00%, 15.00%; 2.960%, 4.100%, 3.600%; 7.650%, 9.500%, 8.810%; 2.260%, 2.170%, 1.200% and 1.870%, 5.250%, 3.749% respectively. The Table-07 shows that the ROA of the selected pharmaceuticals is less stable (CV: SPL-11.46%, BPL-16.08%, ISPIL-10.80%, LIL-31.32% and OIL-46.74%). From the calculated value of t, it is found that there are significant differences between industry average and SPL, BPL, ISPIL, LIL except OIL.

6.2.4 Return on Common Stockholder's Equity [ROCSE]:

Another widely used profitability ratio is return on common stockholders' equity. It measures profitability from the common stockholders' point of view. This ratio shows how many Taka of net income the company earned for each Taka invested by the owners'. This is the most used profitability ratio which measures profitability of owners' investment. It is computed by dividing net income by average common stockholders' equity. As the Table-08 shows that the industry average of return on common stockholders' equity is 13.26%. The average ROCSE varies from 5.353% in BPL to 21.92% in ISPIL. The average ROCSE of BPL-5.353%,

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LIL-6.933% and OIL-12.76% are below from the industry average and the average ROCSE of SPL-19.33%, ISPIL-21.92% are above from the industry average. It is observed from the Table-08 that in case of SPL, BPL, ISPIL, LIL and OIL the ROCSE of the income year 2006-2007, 2007-2008 and 2008-2009 are 19.00%, 18.00%, 21.00%; 4.360%, 5.800%, 5.900%; 16.98%, 24.40%, 24.37%; 7.840%, 7.830%, 5.130% and 6.751%, 18.61%, 12.91% respectively. It can be observed from the Table-08 that the ROCSE of the selected pharmaceuticals is less stable (CV: SPL-7.901%, BPL-16.10%, ISPIL-19.51%, LIL-22.53% and OIL-46.49%). From the calculated value of t, it is found that there is a significant difference in ROCSE between industry average and SPL, BPL and LIL. On the other hand there lies an insignificant difference in ROCSE between industry average and ISPIL and OIL.

6.2.5 Earnings Per Share [EPS]:

Earnings per share are measure of the net income earned on each share of common stock. A measure of net income earned on a per share basis provides a useful perspective for determining profitability. EPS is measured by dividing net income by the number of weighted average common shares outstanding during the year. The Table-09 shows that the industry average of EPS is Tk. 56.52. The average EPS varies from Tk. 3.847 in BPL to Tk. 176.60 in SPL. The average EPS of SPL-Tk. 176.60 is above from the industry average. On the other hand, the average EPS of BPL-Tk. 3.847, ISPIL-Tk. 44.66, LIL-Tk. 44.77 and OIL-Tk. 12.74 are below from the industry average. It is observed from the Table-09 that in case of SPL, BPL, ISPIL, LIL and OIL the EPS of the income year 2006-2007, 2007-2008 and 2008-2009 are Tk. 218.6, Tk. 154.5, Tk.156.6; Tk. 3.080, Tk. 4.330, Tk. 4.130; Tk. 31.19, Tk. 48.09, Tk. 54.70; Tk. 48.14, Tk. 51.25, Tk. 34.93 and Tk. 6.750, Tk. 18.61, Tk. 12.87 respectively. It can be found from the Table-09 that the EPS of the selected pharmaceuticals is less stable (CV: SPL-20.63%, BPL-17.46%, ISPIL-27.15%, LIL-19.35% and OIL-46.54%). From the calculated value of t, it is found that there is a significant difference in EPS between industry average and SPL, BPL and OIL. And there lies an insignificant difference in EPS between industry average and ISPIL and LIL.

6.2.6 Price-Earnings Ratio [P-E]:

The price-earnings ratio is an oft-quoted measure of the ratio of the market price of each share of common stock to the earnings per share. The price earnings ratio reflects investor's assessments of a company's future earnings. The P-E ratio is usually used to assess the owners' appraisal of share value. It measures the amount that investors are willing to pay for each Taka of a firm's earnings. The level of this ratio indicates the degree of confidence that investors have in the firm's future performance. The higher is the ratio, the greater the investor's confidence and vice versa. But from the profitability point of view the lower the ratio, the greater the investor's short-term gain. The P-E ratio is calculated by dividing the market price per share of stock by earnings per share. As the Table-10 shows that the industry average of P-E is 24.33 Times. The average P-E varies from 17.85 Times in OIL to 31.86 Times in BPL. The average P-E of SPL-18.85 and OIL-17.85 are below from the industry average. On the other hand, the average P-E of BPL-31.86, ISPIL-24.77 and LIL-28.35 are above from the industry average. It is observed from the Table-10 that in case of SPL, BPL, ISPIL, LIL and OIL the P-E of the income year 2006-2007, 2007-2008 and 2008-2009 are 11.19, 26.60, 18.75; 19.12, 38.73, 37.72; 25.22, 20.71, 28.38; 11.00, 28.24, 45.81 and 13.37, 8.080, 32.09 Times respectively. The Table-10 shows that the P-E of the selected pharmaceuticals is less stable (CV: SPL-40.89%, BPL-34.67%, ISPIL-15.56%, LIL-61.39% and OIL-70.69%). From the calculated value of t, it is found that there is an insignificant difference in P-E between industry average and the pharmaceuticals SPL, BPL, ISPIL, LIL and OIL.

6.2.7 Payout Ratio [POR]:

The payout ratio measures the percentage of earnings distributed in form of cash dividends. Companies that have high growth rates generally have low payout ratios because they reinvest most of their net income into the business. It is computed by dividing cash dividends by net income. The Table-11 shows that, the industry average POR is 48.67%. The average POR differs from 37.81% in LIL to 58.66% in ISPIL. The average POR

of SPL-45.26% and LIL-37.81% are below from the industry average. On the other hand, the average POR of BPL-51.33%, ISPIL-58.66% and OIL-50.29% are above from the industry average. It is observed from the Table-11 that in case of SPL, BPL, ISPIL, LIL and OIL the POR of the income year 2006-2007, 2007-2008 and 2008-2009 are 45.74%, 48.53%, 41.52% ; 48.70%, 69.28%, 36.32%; 73.74%, 51.98%, 50.27%; 36.35%, 34.15%, 42.94% and 0.000%, 53.73%, 97.13% respectively. It is observed from the Table-11 that the POR of the selected pharmaceuticals is less stable (CV: SPL-7.797%, BPL-32.43%, ISPIL-22.23%, LIL-12.10% and OIL-96.76%). From the calculated value of t, it is found that there is an insignificant difference in POR between industry average and the pharmaceuticals SPL, BPL, ISPIL, LIL and OIL.

6.3 Solvency Ratios:

Solvency is the ability of a business to have enough assets to cover its liabilities. Solvency is often confused with liquidity but it is not the same thing. Solvency ratio measures the ability of the company to service over a long period of time. Solvency is a necessary condition for a business to operate. If a company is unable to meet its obligation, it is said to be insolvent and must undergo bankruptcy in order to either liquidate or bankruptcy restructure. It provides a measurement of how lively a company will be to continue meeting its debt obligations. Long-term creditors and stockholders are particularly interested in a company's ability to pay interest as it comes due to repay the face value of debt at maturity.

6.3.1 Debt to Total Assets [DTA]:

This ratio shows the percentage of assets that are being financed by creditors (instead of business owners). Generally no more than 50% of your assets should be financed by debt. You can reduce this ratio by paying off debt or increasing the value of your assets. It is computed by dividing total debt by total assets. The degree of leverage of the companies is indicated by this ratio. The higher the percentage of debt to total assets, the greater the risk that the company may be unable to meet its maturing obligations and vice versa is also true. The Table-12 shows that, the industry average of DTA is 53.81%. The average DTA varies from 29.67% in SPL to 74.73% in LIL. The average DTA of SPL-29.67% and BPL-35.26% are below from the industry average. On the other hand, the average DTA of ISPIL-61.72%, LIL-74.73% and OIL-67.71% are above from the industry average. The Table-12 shows that, in case of SPL, BPL, ISPIL, LIL and OIL the DTA of the income year 2006-07, 2007-08, 2008-09 are 30.00%, 34.00%, 25.00%; 30.97%, 29.50% 45.30%; 57.54%, 63.27%, 64.34%; 72.00%, 72.49%, 79.69% and 70.92%, 67.27%, 64.93% respectively. It is observed from the Table-12 that the DTA of the selected pharmaceuticals is less stable (CV: SPL-15.20%, BPL-24.76%, ISPIL-5.925%, LIL-5.761% and OIL-4.459%). From the calculated value of t, it is found that, there is a significant difference in DTA between industry average and SPL, LIL and OIL. On the other hand, there lies an insignificant difference in DTA between industry average and BPL and ISPIL.

6.3.2 Times Interest Earned [TIE]:

Times interest earned, sometimes which is called, interest coverage ratio provides an indication of the company's ability to meet interest payment as they come due. It is computed by dividing income before interest expense and income taxes by interest expense. The higher is the value, the better the ability of the firm to fulfill its interest obligations. The Table-13 shows that the industry average of TIE is 5.657 Times. The average TIE varies from 1.433 Times in LIL to 14.25 Times in ISPIL. The average TIE of BPL-3.483, LIL-1.433 and OIL-1.818 are below from the industry average. On the other hand, the average TIE of SPL-7.30 and ISPIL-14.25 are above from the industry average. It is observed from the Table-13 that in case of SPL, BPL, ISPIL, LIL and OIL the TIE of the income year 2006-2007, 2007-2008 and 2008-2009 are 8.270, 6.310, 7.320; 2.600, 3.860, 3.990; 17.36, 12.40, 12.99; 1.500, 1.500, 1.300 and 1.402, 2.180, 1.872 Times respectively. From the Table-13 it is found that the TIE of the selected pharmaceuticals is less stable (CV: SPL-13.43%, BPL-22.04%, ISPIL-19.01%, LIL-8.060% and OIL-21.55%). From the calculated value of t, it is found that there is a significant difference in TIE between industry average and BPL, ISPIL, LIL and OIL. On the other hand there lies an insignificant difference in TIE between industry average and SPL.

7. Sustainable Growth Analysis:

The sustainable growth rate is a measure of how much a company can grow without borrowing more money. After the company has passed this rate, it must borrow fund from another source to facilitate growth. In other words, the maximum growth rate that a company can sustain without having to increase financial leverage. It is calculated as: ROE X (1 - Dividend Payout Ratio). Dividend payout ratio is calculated by dividing dividend per share by the earnings per share and ROE i.e., return on equity is calculated by dividing net income by the common stockholders' equity. Analysis of company's growth potential is important for both lenders and owners. The more a company reinvests, the greater it's potential for growth. The Table-14 represents the sustainable growth rates as well as average growth rates of the sample pharmaceuticals for the study period. It is seen that the sustainable growth rates of the selected pharmaceuticals are fluctuating from year to year. From the Table-14 it is observed that SPL-10.62 and ISPIL-9.433 have a higher ratio as compared to industry average-6.451. So it can be said that growth in these two pharmaceuticals are quite satisfactory. On the other hand, BPL-2.593, LIL-4.360 and OIL-5.244 have a ratio lower than the industry average which indicates poor growth. It is also observed from the Table-14 that in case of SPL, BPL, ISPIL, LIL and OIL the sustainable growth rate of the income year 2006-2007, 2007-2008 and 2008-2009 are 10.31%, 9.265%, 12.28%; 2.237%, 1.782%, 3.760%; 4.460%, 11.72%, 12.12%; 4.990%, 5.160%, 2.930% and 6.750%, 8.611%, 0.371% respectively. It is appeared from the Table-14 that OIL has the highest variation-82.41% and ISPIL has the second highest variation-45.71% which indicates extremely instability in their growth (CV: SPL-14.42%, BPL-39.95%, ISPIL-45.71%, LIL-28.47% and OIL-82.41%). From the calculated value of t, it is observed that there is a significant difference in sustainable growth rate between industry average and SPL and BPL. On the other hand there lies an insignificant difference in sustainable growth rate between industry average and ISPIL, LIL and OIL.

8. The Z-Score Model: Financial Soundness of the Selected Pharmaceuticals:

The Z-Score Model for predicting bankruptcy was published in 1968 by Edward I. Altman, who was, at the time, an Assistant Professor of Finance at New York University. Edward I. Altman (born 1941) is a Professor of Finance at New York University`s Stern School of Business. He is best known for the development of The Z-Score Model for predicting bankruptcy. Dr. Altman was inducted into the Fixed Income Society's Hall of Fame in 2001 and was amongst the inaugural inductees into the Turnaround Management's Hall of Fame in 2008. He was named one of the "100 Most Influential People in Finance" by the Treasury & Risk Management magazine in 2005. The Z-Score Model can provide a significant idea about the financial soundness of the selected pharmaceuticals.

The number produced by the Model is referred to as the company's Z-Score, to represent the likelihood of a company going bankrupt in the next two years. The Z-Score Model uses multiple corporate income and balance sheet values to measure the financial health of a company. It is a linear combination of five common business ratios, weighted by coefficients. It is proven to be very accurate to forecast bankruptcy in a wide variety of contexts and markets. Studies show that the model has 72%-80% reliability of predicting bankruptcy. However, The Z-Score Model does not apply to every situation. It can only be used for forecasting if a company being analyzed can be compared to the database. It utilizes seven pieces of data taken from the corporation's balance sheet and income statement. Five ratios are then extrapolated from these data points. To calculate the Z-Score, the results of each of the above five ratios are multiplied by a set factor (i.e. a coefficient developed by Professor Altman). The results of these multiplication are then added together to determine the company's Z-Score.

The Model is specified as:

$$Z = 1.2A + 1.4B + 3.3C + 0.6D + 1.0E$$

Where:
Z = Score.
A = Working Capital/Total Assets.
B = Retained Earnings/Total Assets.
C = Earnings before Interest & Taxes/Total Assets.

D = Market Value of Equity/Total Liabilities.
E = Sales/Total Assets.

The higher is the score, the healthier the company. It is a good idea to compare a company's Z-Scores over time to get a better idea as to how the company is doing. The lower the Z-Score, the more likely a company is to go bankrupt. A Z-Score lower than 1.8 indicates that bankruptcy is likely, while scores greater than 3.0 indicate bankruptcy is unlikely to occur in the next two years. Companies that have a Z-Score between 1.8 and 3.0 are in the gray area (safety zone); bankruptcy is not easily predicted one way or the other.

The Table-15 shows year-wise as well as average position of the ratios of working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, market value of equity to total debt and sales to total assets. From the Table-15 it is seen that the average positions for the income year 2006-2007, 2007-2008 and 2008-2009 of the working capital to total assets ratios are 0.090, 0.119, (0.133), (0.101), (0.078) Times, the retained earnings to total assets ratios are 0.360, 0.253, 0.047, 0.094, 0.269 Times, the earnings before interest and taxes to total assets are 0.193, 0.058, 0.107, 0.081, 0.082 Times, the sales to total assets are 0.703, 0.270, 2.053, 1.105, 0.625 Times for SPL, BPL, ISPIL, LIL and OIL respectively. On the other hand, the average market value of equity to total debt for the income year 2006-2007, 2007-2008 and 2008-2009 is 7.980, 3.087, 3.147, 0.578 and 0.961 Times for SPL, BPL, ISPIL, LIL and OIL respectively. From the coefficient of variation in the Table-15, it is observed that the above ratios of the selected pharmaceuticals are less stable.

The Table-16 shows the year-wise as well as the average position of Z-Score of the sample pharmaceuticals during the study period. After putting the respective values of A, B, C, D and E, in the aforesaid equation as developed by Prof. Altman, Z-Score was estimated. Average Z-Score of sample pharmaceuticals SPL-6.741 and ISPIL-4.199 are higher than the industry average-3.447 as well as the solvency range provided by Prof. Altman. On the other hand, average Z-Score of BPL-2.809 is lower than the industry average but exists within the safety range provided by Prof. Altman but average Z score of LIL-1.729, OIL-1.754 are lower than the industry average and shows the position of bankruptcy. It is observed from the Table-16 that in case of SPL, BPL, ISPIL, LIL and OIL the Z-Score of the income year 2006-2007, 2007-2008 and 2008-2009 is 4.719, 6.919, 8.586; 2.065, 3.782, 2.581; 3.998, 4.017, 4.581; 1.624, 2.201, 1.363 and 1.222, 1.705, 2.336 respectively. It can be concluded that the overall financial soundness of the sample pharmaceuticals SPL and ISPIL are more satisfactory, BPL is satisfactory and OIL and LIL are not satisfactory i.e., worst leading to bankruptcy. It is observed from the Table-16 that the Z-Score of the selected pharmaceuticals is less stable (CV: SPL-28.78%, BPL-31.36%, ISPIL-7.890%, LIL-24.81% and OIL-31.87%). From the calculated value of t, it is found that there is a significant difference in Z-Score between industry average and LIL and OIL. On the other hand there lies an insignificant difference in Z-Score between industry average and SPL, BPL and ISPIL.

9. Ranking of the Selected Pharmaceuticals with respect to Financial Position:

At this point we have tried to make the ranking of the sample pharmaceuticals in respect of liquidity, profitability and solvency position. For this purpose we have given score for every ratio in each category. For the best position showing pharmaceutical in respect of a particular ratio has given score 5 and for worst score 1 among the sample pharmaceuticals. The others are between score 4, 3 and 2 in accordance to their position. Then we have added the scores of all the ratios in each category for every pharmaceutical. Finally according to the score the ranking has made. The Table-17 shows that in case of liquidity SPL-14 made highest and OIL-10 made lowest score, the others (ISPIL-13, BPL-12 and LIL-11) are between them. The score shows that the SPL has best (Rank-I) liquidity position among the sample pharmaceuticals then ISPIL (Rank-II), BPL (Rank-III), LIL (Rank-IV) and OIL (Rank-V) respectively. In case of profitability SPL-28 made highest and BPL-14 made lowest score, the others (ISPIL-27, OIL-21 and LIL -15) are between them. The score shows that the SPL has best (Rank-I) profitability position among the sample pharmaceuticals then ISPIL (Rank-II), OIL (Rank-III), LIL (Rank-IV) and BPL (Rank-V) respectively. In case of solvency SPL-9 made highest and LIL-2 made lowest score, the others (ISPIL-8, BPL-7 and OIL-4) are between them. The score shows that the SPL has best (Rank-I) solvency position among the sample pharmaceuticals then ISPIL (Rank-II), BPL (Rank-III), OIL (Rank-IV) and LIL (Rank-V) respectively.

10. Correlation, Probable Error and Limits of Correlation between the Liquidity, Profitability and Solvency Position of the Selected Pharmaceuticals:

Of the several mathematical methods of computing correlation, the Karl Pearson's method, popularly known as Pearsonian coefficient of correlation, is most widely used in practice and we have used this method in our study. The Table-18 shows that there is a moderate degree of positive [r = 0.631] correlation between the liquidity and profitability of the selected pharmaceuticals under the study. So, to earn more profit more investment in current assets is necessary in this industry. The calculated value of r [0.631] is more than the calculated value of P.E.r [0.182] but not more than the six times of the calculated value of P.E.r [1.090]. Therefore, the value of r is acceptable but not significant. The limits of the correlation should be 0.449 to 0.812.

There is a high degree of positive [r = 0.868] correlation between the liquidity and solvency of the selected pharmaceuticals under the study. So, adequate working capital is helpful to maintain financial solvency in this industry. The calculated value of r [0.868] is more than the calculated value of P.E.r [0.075] as well as more than the six times of the calculated value of P.E.r [0.447]. Therefore, the value of r is significant. The limits of the correlation should be 0.793 to 0.942.

There is a moderate degree of positive [r = 0.658] correlation between the profitability and solvency of the selected pharmaceuticals under the study. So, financially more solvent companies are earning more profit in this industry, in another word the more the profitability, the more the solvency. The calculated value of r [0.658] is more than the calculated value of P.E.r [0.172] but not more than the six times of the calculated value of P.E.r [1.029]. Therefore, the value of r is acceptable but not significant. The limits of the correlation should be 0.486 to 0.829. So, the liquidity, profitability and solvency are highly interrelated to each other in the pharmaceutical industry of Bangladesh.

11. Conclusion:

From the above financial diagnosis it is found that the financial position and performance of the selected listed pharmaceutical companies in Bangladesh is in average position. Comparing among the selected pharmaceuticals, at the liquidity point of view SPL, ISPIL, BPL, LIL, and OIL hold better to worse position respectively; at the profitability point of view SPL, ISPIL, OIL, LIL and BPL hold better to worse position respectively and at the solvency point of view SPL, ISPIL, BPL, OIL and LIL, hold better to worse position respectively. So, financially SPL, BPL and ISPIL are in better position than LIL and OIL. The study also found that there is an interrelation among the liquidity, profitability and solvency determinant factors of the selected pharmaceuticals. As a result, to reach better solvency position, we have to invest more in this industry and usually we will get more profit than before. It is also necessary to invest adequate working capital, accelerate conversion of receivables and inventory into cash, increase of sales and redemption of debt for improving the financial strength of this industry. The Z-Score Model also showed that the SPL and ISPIL are out of bankruptcy risk, the BPL is also almost in safety range but LIL and OIL are not in a satisfactory position regarding bankruptcy risk. Therefore, it is an urgent need to find out, if any, the causes and limitations in against of further development of the sample pharmaceuticals. Study shows that besides the financial strength of the pharmaceutical industry, it faces some financial and non-financial limitations. These are: complicated procedure of opening Letter of Credit to import raw materials, imposing high tax to import sophisticated tools and machineries for production, inadequacy of fund, no professional distribution house, fixed mark-up system, limited capacity of drug testing laboratories, slow registration process and restrictions on patent right, contrary policy of the Government on producing some products, insufficiency of raw materials, lack of efficient people, lack of sound environment, lack of new entrepreneur, undue influence on tender process and vulnerability of environmental risk. So, steps should be taken for overcoming the financial and nonfinancial limitations of the pharmaceutical industries in Bangladesh. These steps are: the process of opening LC should be easier, tax rate should be reasonable, professional distribution house should be available by arranging more effective trading workshop, modernize the fix mark-up system, loan system

should be easier and sufficient, using modern technology in drug testing laboratories, minimize the period to collect raw materials and the cost of raw materials, modernize the patent right and Government should develop some policies for using the environment at best level. The limitations of the pharmaceutical industry in Bangladesh are highlighted in the above discussion and such type of limitations may be overcome by following the recommended corrective measures. Thus, in near future the pharmaceutical industry will reach better position in Bangladesh as well as abroad.

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Category-A: Liquidity Ratios

Table-01 (Insert the Table after 6.1.1): Current Ratio

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	1.440:1	1.260:1	1.460:1	1.387:1	1.130:1	0.110	7.947	4.033
BPL	1.800:1	1.100:1	2.980:1	1.960:1	1.130:1	0.950	48.48	1.513
ISPIL	0.694:1	0.832:1	0.730:1	0.752:1	1.130:1	0.072	9.548	(9.113)
LIL	0.814:1	0.840:1	0.690:1	0.781:1	1.130:1	0.080	10.24	(7.552)
OIL	0.706:1	0.825:1	0.782:1	0.771:1	1.130:1	0.060	7.782	(10.38)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-02 (Insert the Table after 6.1.2): Quick/Liquid/Acid-Test Ratio

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	0.790:1	0.630:1	0.610:1	0.677:1	0.512:1	0.099	14.56	2.888
BPL	0.763:1	0.500:1	2.210:1	1.158:1	0.512:1	0.921	79.54	1.214
ISPIL	0.170:1	0.323:1	0.265:1	0.253:1	0.512:1	0.078	30.68	(5.812)
LIL	0.217:1	0.216:1	0.205:1	0.213:1	0.512:1	0.007	3.130	(77.97)
OIL	0.192:1	0.313:1	0.282:1	0.262:1	0.512:1	0.063	23.94	(6.890)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-03 (Insert the Table after 6.1.3): Receivables Turnover [Times]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	23.23	22.92	20.56	22.24	525.2	1.460	6.567	(596.6)
BPL	7.199	7.958	7.014	7.390	525.2	0.500	6.786	(1793)
ISPIL	4468	1760	1479	2569	525.2	1651	64.25	2.145
LIL	14.56	23.85	12.26	16.89	525.2	6.136	36.33	(143.5)
OIL	10.91	10.35	10.73	10.66	525.2	0.286	2.681	(3128)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-04 (Insert the Table after 6.1.4): Inventory Turnover [Times]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	2.960	2.720	2.750	2.810	4.471	0.131	4.655	(22.00)
BPL	1.200	1.300	1.600	1.367	4.471	0.208	15.23	(25.85)
ISPIL	9.150	11.02	12.85	11.01	4.471	1.850	16.81	6.119
LIL	3.920	5.190	3.510	4.207	4.471	0.876	20.82	(0.522)
OIL	2.480	3.334	3.077	2.964	4.471	0.438	14.78	(5.959)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Category-B: Profitability Ratios

Table-05 (Insert the Table after 6.2.1): Profit Margin [%]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	17.00	17.00	19.00	17.67	8.158	1.155	6.536	14.26
BPL	9.800	13.60	12.80	12.07	8.158	2.003	16.60	3.380
ISPIL	3.550	4.110	3.850	3.837	8.158	0.280	7.303	(26.71)
LIL	1.930	1.550	1.190	1.557	8.158	0.370	23.77	(30.89)
OIL	3.940	7.507	5.539	5.662	8.158	1.787	31.56	(2.419)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-06 (Insert the Table after 6.2.2): Asset Turnover [Times]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	0.760	0.710	0.760	0.743	1.020	0.029	3.928	(16.39)
BPL	0.300	0.299	0.280	0.293	1.020	0.010	3.413	(125.4)
ISPIL	2.160	2.310	2.290	2.253	1.020	0.081	3.604	26.28
LIL	1.170	1.400	1.010	1.193	1.020	0.196	16.43	1.528
OIL	0.480	0.699	0.677	0.619	1.020	0.120	19.46	(5.778)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-07 (Insert the Table after 6.2.3): Return on Asset [%]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	13.00	12.00	15.00	13.33	6.208	1.528	11.46	8.080
BPL	2.960	4.100	3.600	3.553	6.208	0.571	16.08	(8.047)
ISPIL	7.650	9.500	8.810	8.653	6.208	0.935	10.80	4.530
LIL	2.260	2.170	1.200	1.877	6.208	0.588	31.32	(12.77)
OIL	1.870	5.250	3.749	3.623	6.208	1.694	46.74	(2.644)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-08 (Insert the Table after 6.2.4): Return on Common Stockholders' Equity [%]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	19.00	18.00	21.00	19.33	13.26	1.528	7.901	6.888
BPL	4.360	5.800	5.900	5.353	13.26	0.862	16.10	(15.89)
ISPIL	16.98	24.40	24.37	21.92	13.26	4.275	19.51	3.508
LIL	7.840	7.830	5.130	6.933	13.26	1.562	22.53	(7.016)
OIL	6.751	18.61	12.91	12.76	13.26	5.931	46.49	(0.147)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-09 (Insert the Table after 6.2.5): Earnings Per Share [EPS in Taka]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	218.6	154.5	156.6	176.6	56.52	36.42	20.63	5.711
BPL	3.080	4.330	4.130	3.847	56.52	0.672	17.46	(135.7)
ISPIL	31.19	48.09	54.70	44.66	56.52	12.12	27.15	(1.694)
LIL	48.14	51.25	34.93	44.77	56.52	8.665	19.35	(2.348)
OIL	6.750	18.61	12.87	12.74	56.52	5.931	46.54	(12.78)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-10 (Insert the Table after 6.2.6): Price-Earnings Ratio [Times]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	11.19	26.60	18.75	18.85	24.33	7.706	40.89	(1.234)
BPL	19.12	38.73	37.72	31.86	24.33	11.04	34.67	1.180
ISPIL	25.22	20.71	28.38	24.77	24.33	3.855	15.56	0.196
LIL	11.00	28.24	45.81	28.35	24.33	17.41	61.39	0.400
OIL	13.37	8.080	32.09	17.85	24.33	12.62	70.69	(0.891)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

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Table-11 (Insert the Table after 6.2.7): Payout Ratio [%]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	45.74	48.53	41.52	45.26	48.67	3.529	7.797	(1.673)
BPL	48.70	69.28	36.32	51.33	48.67	16.65	32.43	0.277
ISPIL	73.74	51.98	50.27	58.66	48.67	13.08	22.23	1.323
LIL	36.35	34.15	42.94	37.81	48.67	4.574	12.10	(4.119)
OIL	0.000	53.73	97.13	50.29	48.67	48.66	96.76	(0.057)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Category-C: Solvency Ratios

Table-12 (Insert the Table after 6.3.1): Debt to Total Assets Ratio [%]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	30.00	34.00	25.00	29.67	53.81	4.509	15.20	(9.276)
BPL	30.97	29.50	45.30	35.26	53.81	8.729	24.76	(3.683)
ISPIL	57.54	63.27	64.34	61.72	53.81	3.656	5.925	3.743
LIL	72.00	72.49	79.69	74.73	53.81	4.305	5.761	8.413
OIL	70.92	67.27	64.93	67.71	53.81	3.019	4.459	7.971

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-13 (Insert the Table after 6.3.2): Times Interest Earned [Times]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	8.270	6.310	7.320	7.300	5.657	0.980	13.43	2.904
BPL	2.600	3.860	3.990	3.483	5.657	0.768	22.04	(4.904)
ISPIL	17.36	12.40	12.99	14.25	5.657	2.709	19.01	5.494
LIL	1.500	1.500	1.300	1.433	5.657	0.116	8.060	(63.33)
OIL	1.402	2.180	1.872	1.818	5.657	0.392	21.55	(16.97)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-14 (Insert the Table after 7): Sustainable Growth Rate [%]

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	10.31	9.265	12.28	10.62	6.451	1.531	14.42	4.717
BPL	2.237	1.782	3.760	2.593	6.451	1.036	39.95	(6.450)
ISPIL	4.460	11.72	12.12	9.433	6.451	4.312	45.71	1.198
LIL	4.990	5.160	2.930	4.360	6.451	1.241	28.47	(2.917)
OIL	6.750	8.611	0.371	5.244	6.451	4.322	82.41	(0.484)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-15 (Insert the Table after 8): Ratios for Testing Financial Soundness.

Ratios	SPL	BPL	ISPIL	LIL	OIL	Year
Working Capital To Total Assets (In Time)	0.110	0.108	(0.170)	(0.085)	(0.092)	2006-07
	0.070	0.018	(0.090)	(0.069)	(0.059)	2007-08
	0.090	0.230	(0.140)	(0.150)	(0.084)	2008-09
	0.090	0.119	(0.133)	(0.101)	(0.078)	Mean
	0.020	0.106	0.040	0.043	0.017	SD
	22.22	89.55	(30.31)	(42.35)	(21.97)	CV
Retained Earnings To Total Assets (In Time)	0.330	0.270	0.020	0.106	0.303	2006-07
	0.340	0.270	0.040	0.099	0.258	2007-08
	0.410	0.220	0.080	0.077	0.245	2008-09
	0.360	0.253	0.047	0.094	0.269	Mean
	0.044	0.029	0.031	0.015	0.031	SD
	12.11	11.41	65.45	16.10	11.35	CV
Earnings Before Interest and Taxes To Total Assets (In Time)	0.190	0.050	0.100	0.087	0.066	2006-07
	0.170	0.065	0.110	0.091	0.098	2007-08
	0.220	0.058	0.110	0.065	0.082	2008-09
	0.193	0.058	0.107	0.081	0.082	Mean
	0.026	0.008	0.006	0.014	0.016	SD
	13.61	13.02	5.412	17.28	19.51	CV
Market Value of Equity To Total Debt (In Time)	4.630	1.820	3.090	0.323	0.355	2006-07
	8.580	4.830	2.760	0.818	0.639	2007-08
	10.73	2.610	3.590	0.592	1.889	2008-09
	7.980	3.087	3.147	0.578	0.961	Mean
	3.094	1.561	0.418	0.248	0.816	SD
	38.77	50.56	13.28	42.89	84.92	CV
Sales To Total Assets (In Time)	0.720	0.300	1.990	1.097	0.477	2006-07
	0.650	0.270	2.050	1.354	0.708	2007-08
	0.740	0.240	2.120	0.865	0.690	2008-09
	0.703	0.270	2.053	1.105	0.625	Mean
	0.047	0.030	0.065	0.245	0.129	SD
	6.720	11.11	3.171	22.13	20.56	CV

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-16 (Insert the Table after 8): Analysis of Z score.

Name of The Pharmaceuticals	2006 -2007	2007 -2008	2008 -2009	Mean	Industry Mean	SD	CV	t-value
SPL	4.719	6.919	8.586	6.741	3.447	1.940	28.78	2.941
BPL	2.065	3.782	2.581	2.809	3.447	0.881	31.36	(1.253)
ISPIL	3.998	4.017	4.581	4.199	3.447	0.331	7.890	3.932
LIL	1.624	2.201	1.363	1.729	3.447	0.429	24.81	(6.937)
OIL	1.222	1.705	2.336	1.754	3.447	0.559	31.87	(5.247)

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-17 (Insert the Table after 9): Ranking of the Selected Pharmaceuticals with respect to Financial Position (Based on Mean Ratios).

Ratios/Basis	Name of The Pharmaceuticals				
	SPL	BPL	ISPIL	LIL	OIL
Liquidity Ratios:					
Current Ratio	4	5	1	3	2
Liquid Ratio	4	5	2	1	3
Receivables Turnover	4	1	5	3	2
Inventory Turnover	2	1	5	4	3
Total Score [Liquidity]	14	12	13	11	10
Rank	I	III	II	IV	V
Profitability Ratios:					
Profit Margin	5	4	2	1	3
Asset Turnover	3	1	5	4	2
Return on Asset	5	2	4	1	3
Return on Common Stockholders' Equity	4	1	5	2	3
Earnings Per Share	5	1	3	4	2
Price-Earnings Ratio	4	1	3	2	5
Payout Ratio	2	4	5	1	3
Total Score [Profitability]	28	14	27	15	21
Rank	I	V	II	IV	III
Solvency Ratios:					
Debt to Total Assets Ratio	5	4	3	1	2
Times Interest Earned	4	3	5	1	2
Total Score [Solvency]	9	7	8	2	4
Rank	I	III	II	V	IV

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

Table-18 (Insert the Table after 10): Coefficient of Correlation (r), Probable Error (P.E.r) and Limits of Correlation (Based on Scores) between the Liquidity (L), Profitability (P) and Solvency (S) Position of the Selected Pharmaceuticals.

Name of The Pharmaceuticals	Score			L and P			L and S			P and S		
	L	P	S	r	P.E.r	Limits of r	r	P.E.r	Limits of r	r	P.E.r	Limits of r
SPL	14	28	9	0.631	0.182	0.449 to 0.812	0.868	0.075	0.793 to 0.942	0.658	0.172	0.486 to 0.829
BPL	12	14	7									
ISPIL	13	27	8									
LIL	11	15	2									
OIL	10	21	4									

Source: Annual Reports and Official Records of the Selected Pharmaceuticals.

List of Pharmaceuticals under Study

Name of The Pharmaceuticals	Acronym
SQUARE PHARMACEUTICALS LTD.	SPL
BEXIMCO PHARMACEUTICALS LTD.	BPL
The IBN SINA Pharmaceutical Industry Ltd.	ISPIL
Libra Infusions Limited	LIL
Orion Infusion Ltd.	OIL