A Study of Performance Through Ratio Analysis: Intra- and Inter- comparison between Bangladesh Pharmaceutical and Cement companies

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Abstract   *Financial statement analysis provides a view of the financial status of companies through a view of their current situation as well as enabling forecasts to be drawn about their future. However, there is a chance of manipulation in the financial statements, which can often be detected through proper analysis of the statements. Over time different ratios may often be provided and as a result accurate forecasting can be greatly hampered. In this study, two industries in Bangladesh have been selected for analysis - Pharmaceutical companies and Cement companies. The analysis clearly shows the importance of financial ratio analysis in enhancing the understanding the efficiency and effectiveness of corporate investment and return in the manufacturing industries. The analysis demonstrated in this paper shows that managerial actions need constant and close investigation, and well defined policies are needed to improve managerial efficiency, which in turn is likely to be attractive to both investors and finance providers.*

***Keywords:** Financial statement analysis; Bangladesh Pharmaceutical and Cement Industries; Managerial efficiency.*

1.   Introduction

Financial statement analysis helps us to interpret the overall performance of a company so that managerial efficiency, operational efficiency and financial

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viability over a period can be determined. It indicates the performance of a company and also provides a benchmark to establish the financial position of the company. Financial ratios are indicators of the extant health of a company and also provide an insight into possible future areas of concern.

The analysis of financial ratio helps us to understand significant items that are not necessarily stable across different industries and time periods. Managers, wishing to gain a benchmark understanding of how a company is faring, may make judgments based on simple observations of performance such as turnover, profit margin and work-in-progress. Senior management must attain a deeper and broader understanding if they are to better appreciate where the company is heading. The risks of not correctly interpreting and understanding the financial position and operating efficiency of a company include making inefficient investments in that company. Financial ratio analysis forewarns of such risks by highlighting dangerous trends and differences. So when used objectively, it is possible to predict the trends that may cause concern thus enabling investors, finance providers and management to take appropriate action.

The objectives underpinning the analysis corporate financial of statements are to facilitate efficient decision making from the perspective of an investor or a finance provider (creditor). The analysis generally attempts to achieve an understanding of whether managers of companies are satisfactorily using current earnings, if they are acquiring and managing assets well, if the company can meet its obligations, to determine whether the sources of a company's assets and investments are efficient, and to evaluate the overall efficiency and performance of a company.

In this study we apply ratio analysis to the information provided in the financial statements of six organisations; three in each of two industries that are of importance to the Bangladesh economy. We identify the ratios that are applied in the analytical testing and explain the theoretical concepts underpinning the importance of these measures. We also consider how these measures can be used to interpret corporate performance and financial position.

1.1   The selected companies and industries

As the six companies identified in this section are significant organisations in two industrial sectors that are important to the Bangladesh economy, they have been selected for the analysis in this study.

The Bangladesh Pharmaceutical industry is one of the most developed hi tech sectors of the Bountry and it makes a significant contribution to the economy.

After the promulgation of Drug Control Ordinance - 1982, the development of this sector accelerated. The professional knowledge, thoughts and innovative ideas of the pharmacists working in this sector are the key factors for these developments. Due to recent development of this sector we are exporting medicines to global markets including to Europe. This sector also provides 95% of the total medicine requirements of the Bangladesh market. Emran and Hossain (2005) comment that healthy growth is likely to encourage the pharmaceuticals companies to introduce newer drugs and newer research products, while at the same time maintaining a healthy competitiveness in respect of the most essential drugs.

Leading pharmaceutical companies are expanding their business with the aim of further developing the export market. Beximco Pharmaceuticals Limited (BPL) is one of the leading pharmaceutical manufacturing companies in Bangladesh. Considered as a technological leader among the local manufacturers, BPL currently is ranked in third position in local sales among Bangladesh pharmaceutical companies, and this position is supported by an extensive distribution network that supports its products in the local market. Companies like BPL and others (such as Square Pharmaceuticals and ACI Pharmaceuticals) are now trying to adopt international manufacturing standards in their facilities. In the bulk drugs and pharmaceutical industry these are currently almost non-existent in Bangladesh. Sabnam and Biswas (2008) argue that the Bangladesh pharmaceutical industry now badly needs an extensive guardianship from the government in policy matters, knowledge and infrastructural capacity building in order to combat challenges in the journey to acquiring world class manufacturing know-how and cost-competitive human capital. The sector consistently creates job opportunities for highly qualified people and many established entrepreneurs in Bangladesh today had their start in pharmaceutical companies. Thus, pharmaceutical companies are contributing significantly towards raising the standard of healthcare through enabling local access to newer products and information.

Meghna Cement Mills Ltd., (MCM) is one of the largest cement industries in Bangladesh. The company is International Standard Organization (ISO) (ISO 9001: 2008) certified having accreditation of its manufacturing products for both local and export markets under the registered trade mark "King Brand Cement". The company has been listed with both the Dhaka and Chittagong Stock Exchanges since 1995 and 1996, respectively. Other significant organisations in the cement industry include Heidelberg Cement Bangladesh Ltd. (HCB), which meets 13% of the Bangladesh demand for cement from its two plants located at

Dhaka and Chittagong. It employs 260 people across the country and has become a major force in the sector. Aramit Cement Limited (ACL), incorporated in 1995 with technical collaboration of a Chinese company, is another significant organization in the Bangladesh cement industry. The company has attained ISO 9002 certification. Its products carry the brand name 'Camel' and these have become popular among Bangladesh consumers.

1.2   Outline of this study

This paper proceeds as follows. The next section provides a review of the literature that considers the measures used to enable effective and efficient interpretation of information provided in the financial statements of companies. It then identif the ratios that have been selected for analytical testing and explains the theoretical concepts underpinning the importance of these measures of performance and financial position. This is followed by a brief outline of the methodology adopted in the study. Next a determination and discussion of the selected ratios based on the financial statement information of the six selected companies is provided, and this is followed by a concluding section.

2.   Literature review

Bierman and Mc Adams (1969) argued that most financial decisions are made under conditions of uncertainty about the future. There is no procedure for management to follow, which will lead to the selection of the correct alternative each time. In dealing with uncertainty, it is desirable to focus attention on the decision *process* rather than on the merits of any single decision or outcome. Ratio analysis is regarded as a useful tool that assists managers in this process. For example, Schall and Haley (1980) suggest that financial ratios efficiently provide a great deal of information regarding a company's condition. A ratio, when compared with a target range of values can serve as a meaningful indicator of a company's financial health as well as a means to detect imminent problem areas.

Hyder(1988) argues that financial statements present a snapshot (still picture) of the past operation of a business. The reliability of the statements depends upon those who prepare these statements. In order to draw meaningful conclusions, several years statements should be studied and for more meaningful comparison, comparative statement forms should be used. Hashmi (1988) comments that ratios can sometimes be misleading if an analyst does not know the reliability and limitations of the figures from which they are computed and the financial position of the business at other times of the year. Gitman (2002), for example, points out that financial statements and thus financial ratios rely on accrual concepts. He

argues that as a result ratios can provide useful insights into important aspects of risks and returns. However, Hashmi (1988) acknowledges that in spite of limitations the utility and importance of ratio analysis as a tool of decision making is undeniable.

Horne (1998) argues that because reported financial data and the ratios determined from these data are numerical, there is a tendency to regard them as precise portrayals of a company's true financial position. While for some companies the data may closely approximate economic reality, for others it is necessary for the analyst to go beyond the reported figures in order to properly analyze performance and financial condition.

Moyer et al. (1990) caution that ratios should not be viewed as substitutes for sound business judgment. Instead, they should be regarded simply as tools that can help management to make better decisions. A further cautionary note comes from Ross, et al. (1996) who suggested that the basic problem with financial statement analysis is that there is no underlying theory to help identify which quantities to look at and to guide in establishing benchmarks. They argued that there are many instances where financial theory and economic logic can provide adequate guidance to managers making judgments about investment value and risk.

Hampton (1998) argues that financial ratios can be used to locate symptoms of problems. Once the symptoms have been located, the financial analyst must determine the cause of any problem, and then move on to finding a suitable solution to the problem. The problem might lie in the ability and experience of the management team. Kevin (2000) argues that the most important variable affecting the future prospects of the company is perhaps the quality of its management. However while the future of a company depends on the quality and competence of its management, to a very great extent assessing these managerial attributes is perhaps the most difficult task in company analysis.

Bringham and Houston (2001) observed that ratio analysis is used by three main groups. These are: (1) managers who employ ratios to help, analyze, control and thus improve their company's operations; (2) credit analysts who analyze ratios to help ascertain a company's ability to pay its debts; and (3) stock analysts who are interested in a company's efficiency, risk and growth prospects. Further, Gitman (2003) argues that ratios enable financial managers to monitor the pulse of the firm and its strategic goals.

Mostyn (2008) comments that of all the primary financial statements, the balance sheet is the most basic and essential. The income statement is a "change

statement" that shows the change in equity as a result of operating a business during a specific period of time. Kmhagen (2005) suggests that the 'bottom line' (profit figure) on the income statement is not the only important figure in the financial statements and argues that it may not even be the most important as there is another whole dimension of valuable information that can be obtained from the data reported in the financial statements. Ratio analysis is one of many tools that can be used to evaluate a company's performance, its current status, and its evaluation over time. The other two important financial statements are the statement of owner's equity (or stockholders' equity) in which the changes to owner's equity for a specific period of time are summarized; and the statement of cash flows in which the changes in cash for a specific period of time are explained.

This overview of the relevant literature showns that financial statement analysis using tools such as ratio analysis to assess performance and financial condition can be beneficial in assisting managers to better operate. However, it also indicates that 'to be useful' ratios must be interpreted with caution and with a full appreciation of the limitations of the underlying financial data on which the ratios are determined.

3.   Selected ratios

For the purpose of analysing financial statement information, we classify ratios into the following broad spectrums: a) Liquidity ratios; b) Profitability ratios; c) Expense ratios; d) Leverage ratios; e) Activity ratios; and f) Investment turnover ratios. These ratios used in this study are now identified and briefly discussed.

a) Liquidity ratios: measure the ability of a company to meet its short-term obligations and reflect the short-term financial solvency or strength of the company. These ratios help with the understanding of liquidity. A low degree of liquidity will potentially lead to poor credit worthiness and a consequent loss of creditor's confidence. On the other hand a high degree of liquidity may be inefficient as idle assets (cash) do not generate returns. Common liquidity ratios include the current ratio, quick ratio, receivable turnover ratio, payables turnover ratio, inventory turnover ratio, average payment period, and the average collection period.

b) Profitability ratios: are calculated to measure the operating efficiency of a company. Besides, management of the company, finance providers and owners are interested in the profitability of a company while finance providers want to receive interest and repayment of principal in due time; owners want to get an

acceptable return on their investment, which is only possible if a company earns sufficient profits. Signals of problems emanating from profitability ratios include indications of high production costs, idle assets, low sales, inadequate selling prices, high administrative expenses, and excessive interest payment. Commonly used profitability ratios include the gross profit margin, net profit margin, return on equity, asset turnover, return on assets, earnings per share, and return on investment.

c) Expense ratios: are computed through comparing expenses with sales. The term expense includes cost of goods sold, operating expenses, administrative expenses, and selling expenses. A low expense ratio is generally considered to be favourable as it indicates operational efficiency while a high ratio is regarded unfavorably.

d) Leverage ratios: are used in judging the long term financial position of a company and include the calculation of financial leverage (capital structure). The ratios reflect the mix of funds provided by owners and lenders. The most common leverage ratio incorporates a comparison of debt to equity. Debt is considered to be riskier than equity as a company has a legal obligation to pay interest to debtholders irrespective of the profits it makes or the losses it incurs. The relationship describing the finance providers' contribution relative to the owners' contribution is called the debt-equity ratio. The greater the debt-equity ratio the greater will be the risk to the finance providers (creditors).

e) Activity ratios: indicate the speed with which assets are being converted or turned into sales. Activity ratios thus involve a relationship between sales and assets. An appropriate balance between sales and assets generally reflects that assets are managed well. Commonly used activity ratios are work in progress turnover, and raw material inventory turnover.

*f) Investment turnover ratios***:** reflect the relationship between the cost of goods sold and either the assets or investments of a company. The higher the turnover ratio, the more efficient the management and utilization of the assets or investments is assumed to be. Commonly used investment turnover ratios include total asset turnover, fixed assets turnover, and current assets turnover.

4.   Methodology of the study

Ratio analysis provides useful information to assist in gaining insights into the economic characteristics of different industries and of different companies under similar economic conditions, and across time which are due to operational, financing and investing decisions of managers. The analysis conducted in this

study is based on information contained in the annual reports of selected companies. Intra and intercompany analysis is performed and a total number of twenty eight ratios are determined. The currency used in this analysis is the Taka (Tk).

Intra company analysis: A comparative analysis of the following companies is provided.

Beximco Pharmaceuticals Limited (BPL) financial statement information for the years 2008 to 2010.

Meghna Cement Mills Limited (MCM) financial statement information for the years of 2007 to 2009.

Intercompany analysis: A comparative analysis of the following companies is provided.

Beximco Pharmaceuticals Limited (BPL), ACI Pharmaceuticals (ACI) and Square Pharmaceuticals Limited (SPL) for the year 2010.

Meghna Cement Mills Limited (MCM), Aramit Cement Limited (Aramit) and Heidelberg Cement Bangladesh Limited (HCB) for the year 2009.

5.   Determination and discussion of the ratios

Pharmaceutical companies

a) Liquidity ratios

Current ratio : BPL

Year	Current Asset	Current Liability	Ratio
2010	6,191,667,831	2,513,157,232	2.46 times
2009	6,191,673,783	2,321,451,642	2.66 times
2008	2,861,891,654	2,602,032,267	1.09times

Current ratio=	Year	Beximco	ACI	Square
Current asset/ current liabilities	2010	2.46 Times	1.05 times	2.15 Times

The current ratio shows fluctuating results over the years. Over the period the value of this ratio ranged from 1.09 to 2.66 which demonstrated an overall uptrend. The year 2009 shows the best performance while 2008 shows the worst. The main reason for in this ratio appears to be linked to the reduction of current

asset and the decrease in current liabilities. From the above chart we can assume that BPL's short-term debt payment ability is moderate with a 2.46:1 position in terms of paying its short term debt.

Quick ratio : BPL

Year	(Current Assets – Inventories)	Current Liability	Ratio
2010	6191667831-1,983,809,444=4,207,858,387	2,513,157,232	1.67 times
2009	6,191,673,783- 1,722,953,284-=4,468,720,499	2,321,451,642	1.92 times
2008	2,861,891,654-1,505,288,093=135,603,561	2,602,032,267	0.52 times

Quick Ratio	Year	Beximco	ACI	Square
Quick Ratio= (Current asset/Inventory)/current liabilities	2010	1.67 Times	0.60 times	1.15 Times

The quick ratio of BPL shows fluctuating results over the three years. The value of this ratio ranged from 0.52 to 1.92, which demonstrated a large amount of upward momentum. It appears that the company has an improving capacity to deal with its short term obligations; that is BPL's current operating activities provide sufficient cash to pay off its current liabilities.

Current cash debt coverage ratio : BPL

Year	Cash flow from operation	Current Liability	Ratio
2010	2,040,045,602	2,513,157,232	0.811 times
2009	842,792,622	2,321,451,642	0.36 times
2008	1,166,071,983	2,602,032,267	0.44times

The current cash debt coverage ratio of BPL shows fluctuating results over the years. The value of this ratio ranged from 0.36 to 0.811. It appears that the company is quite able to meets its short term liabilities. BPL's current operating activities provide enough cash to pay off its current liabilities which indicate again company is in a reasonable position in terms of its liquidity.

b) Profitability ratios

There are many measures of profitability which facilitate an evaluation of the returns of a company to its sales, assets, or equity. These ratios provide indicators of the capacity of a company to survive difficult circumstances such as declining prices increasing costs and declining sales. The profitability ratios we determine for intra-company analysis in this study include: (1) net profit margin; (2) return on assets; (3) return on equity; (4) earnings per share; and (5) price earnings ratio.

Net profit margin

The net profit margin ratio offers information as regards a company's success from its core trading activities. The ratio provides an indication about the operational outcome from sales activity after the cost of goods sold is removed by measuring the proportion of each sales currency unit (Taka) that is regarded as profit.

Profit Margin on Sales : BPL

Year	Net income	Sales revenue	Ratio
2010	1,051,648,808	6,490,847,353	16.20%
2009	624,740,307	4,868,254,915	12.83%
2008	545,341,273	4,010,167,059	13.59%

Profit margin on Sales	Year	Beximco	ACI	Square
Profit margin on Sales =Net Income / Net Sales	2010	16.20%	12.13%	15.72%

This analysis shows that BPL ratio range is 12.83 to 16.20%, reaching the highest at 16.20% in 2010 and the lowest at 12.83% in 2009. Comparison of this ratio with the other companies in this study shows that Square Company (SCL) is the closest competitor. An implication of this ratio appears to be that BPL has firm control over its operating costs.

Return on assets

This ratio measures the profit earned by a company through the use of the capital invested in it by both owners and creditors in acquiring capital assets. Return on assets is interpreted as a measure of the success of a company in using the assets it has acquired.

Rate of return on Assets : BPL

Year	Net income	Total asset	F
2010	1,051,648,808	21,372,399,509	4
2009	624,740,307	19,891,933,422	3
2008	545,341,273	14,819,665,441	3

ROA	Year	Beximco	ACI	Square
Rate of return on Assets = (Net Income +Interest)/ Total Assets	2010	4.92%	3.12%	13.89%

This analysis shows that BPL's ratios are fluctuating with a peak at 4.92% in 2010 falling in 2009 to 3.14%. A comparison indicates that BPL is similar to its competitors ACI and SCL. Interpretation requires managers to consider whether or not these returns are at an acceptable level or not, and benchmarking to competitors operating under similar economic conditions and I similar markets is commonly an integral part of this evauation.

Return on equity

The return on equity ratio indicates the amount of return generated from the equity invested in a company by its owners. It is a useful ratio for investigating the capability of the company's managers to provide an acceptable return on the capital invest by the owners.

Rate of return on equity : BPL

Year	Net income	Equity			Ratio%
2010	1,051,648,808	15,974,086,451			6.58%
2009	624,740,307	10,885,706,614			5.74%
2008	545,341,273	10,450,202,145			5.23%

ROE	Year	Beximco	ACI	Square
Rate of return on equity= Net income / Equity	2001	6.58%	13.27%	18%

This analysis shows that ROE of BPL ranged from 5.23% to 6.58% across the period, reaching the highest at 6.58 % in 2010 and the lowest at 5.23% in 2008. A comparison shows that BPL's return on equity is lower than its competitor. This lower rate of return can be interpreted as BPL not being able to reward its owners as well as its competitors are able to.

Earnings per share

Earnings per share (EPS) measures the net income available for the owers on a per-share basis. EPS is a commonly used benchmark and is often quoted in publicly available share market updates.

Earnings per share : BPL

Year	Net income	Number of Shares	Ratio
2010	1,051,648,808	203,413,696	5.17
2009	624,740,307	178,497,231	3.50
2008	545,341,273	1,510,640,065	3.17

EPS		Year	Beximco	ACI	Square
Earnings per share= (Net income-Preferred dividends) / Ordinary shares outstanding		2010	5.17	30.49	138.36

This analysis shows a dramatic difference between SCL and BPL's EPS ratios. This occurs because of the difference in the two companies' book values of equity. However, the analyst will need to undertake further examination in order to determine whether the EPS of these companies has been increasing or decreasing.

Price Earnings ratio

The Price Earnings Ratio or P/E measures market expectations regarding both risk and future growth prospects of a company's net income. Companies whose net income is expected to grow substantially will often have this expectation reflected in a high price earnings ratio.

P/E ratio	Year	Beximco	ACI	Square
Price Earnings ratio	2010	20.67	23.72	26.07

The P/E ratio tends to be higher for companies that have high growth prospects and lower for riskier companies. BPL's P/E ratio, being lower than those of the other pharmaceutical manufacturers examined in this study can be interpreted as a higher risk company, or as having lower relative growth prospects. Further analysis may be focused on the risk indicators, levels of debt in particular, to further understand the risk.

c) Coverage ratios

Coverage ratios measure the long-term debt servicing ability of a company by focusing on either the excess of earnings over interest or the proportional relationship of debt in the company's liabilities and equities. Coverage ratios determined in this study include the debt to asset ratio, times interest earned, and the cash debt coverage ratio.

Debt to asset ratio

Total debt includes both current liabilities and long-term debt. Usually creditors prefer low debt ratio because the lower the ratio the greater the cushion against their losses in the event of liquidation. The owners can benefit of because it magnifies earnings, thus the return to stockholders but too much such debt often leads to financial difficulty that eventually might cause bankruptcy.

Debt to Asset Ratio : BPL

Year	Total liabilities	Total assets	Ratio
2010	5,398,313,058	21,372,399,509	0.25
2009	9,006,226,808	1,325,124,286	0.45
2008	4,369,463,296	14,819,665,441	0.29

Debt to Asset Ratio	Year	Beximco	ACI	Square
Total liabilities/Total assets	2010	0.25	0.19	0.23

An interpretation of this data appears to indicate that BPL has satisfactory policies in place for the management of its debt. This implies that it has only a moderate level of risk associated with its ability to repay its long term liabilities. By comparison, SCL and ACI appear to have a higher level of risk.

Time interest earned

This ratio provides an indication of the margin of safety between the ability of a company to service its financial obligations based on its measure of net income. Thus, the ratio can be interpreted as an indication of the level of protection to finance providers and other creditors in the event of bankruptcy or other financial failure of the company.

Time Interest Earred : BPL

Year	Earnings before interest and taxes (EBIT)	Interest expense	Ratio
2010	1,361,532,326	662,182,384	2.05
2009	867,467,427	289,427,992	2.99
2008	741,121,010	249,654,298	2.96

Times interest earned	Year	Beximco	ACI	Square
Time interest earned =EBIT/ Interest expense	2010	2.05	3.91	4.16

The time interest earned (TIE) ratio of BPL is low relative to its competitors. In year 2010, the TIE ratio is 2.05 times, which means the number of times that BPL's income before interest and taxes covers its interest obligation, while, ACI and Square have stronger ratios of 3.91 times, and 4.16 times respectively. This ratio is interpreted as representing a company's interest paying ability.

Cement Companies

Liquidity ratios

Current ratio

Company	2007	2008	2009
Meghna Cement Mills Ltd.	1.1	1.43	1.29
Aramit Cement			1.16
Heidelberg Cement Bangladesh Ltd.			1.18

The higher the ratio, the better is a company's ability to repay its short term liabilities. Meghna Cement Mills Limited's (MCM) capability increased to 1.43 in 2008: although it decreased in 2009 it remains higher than in 2007. In 2009 Heidelberg Cement Bangladesh (HCB) is in a stronger position than Aramit Cement Limited (ACL). From an operational point of view, one of the implications might be that the management of operational aspects such as the Supply chain management (SCM), Just-in-time (JIT) and other project management is efficient in HCB resulting in an improved cash position.

Quick ratio

Company	2007	2008	2009
Meghna Cement Mills Ltd.	0.51	0.98	0.86
Aramit Cement			0.34
Heidelberg Cement Bangladesh Ltd.			0.65

Meghna Cement Limited's immediate short term liquidity has improved across the study period. It compares favourably to both ACL and HCB, and again, the inference may be that MCM has more effective management and policies that enhance its cash flow position.

Receivables turnover ratio

Receivables turnover ratio indicates the number of times a company's receivables are turned into cash (turnover) each year. The ratio indicates how rapidly debts

can be collected. A high ratio indicates a relatively short time lag between credit sales and cash collection while a low ratio shows that debts are not collected rapidly.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	43.17	32.73	18.98
Aramit Cement			14.83
Heidelberg Cement Bangladesh Ltd.			21.69

This analysis shows that MCM's debt collection capability has deteriorated since 2009. The comparative analysis shows that the competitor companies range around MCM's level, and that all three have a ratio that is relatively similar.

Credit turnover ratio

This ratio shows the relationship between net credit purchases and the average amount of creditor's outstanding during the year. A lower credit turnover ratio indicates the rate at which accounts due for payment are being settled. An increasing ratio indicates that the creditors are being settled more rapidly than previously.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	14.75	25.49	22.49
Aramit Cement			17.58
Heidelberg Cement Bangladesh Ltd.			19.86

As we see, MCM tends to settle its account more rapidly than either ACI or HCB. On the other hand, it can be implied that both ACI and HCB are making more efficient use of their cash resources by slowing down the rate at which they settle their creditors. One other possible interpretation of this ratio is that a lower ratio indicates a lesser ability to pay promptly, and could be a signal of increasing riskiness.

Inventory turnover ratio

Inventory turnover ratio indicates the efficiency of the firm in selling its products. A high ratio is good from the viewpoint of moving stocks out of the company while a low ratio may be indicating an inability to sell the stock.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	2.8	5.66	5.81
Aramit Cement			6.01
Heidelberg Cement Bangladesh Ltd.			5.77

This analysis shows that MCM's ability to sell its inventory (stock) has been increasing rapidly (> doubled) across the three-year period. Aramit (ACI) has the strongest inventory turnover, perhaps indicating the relative strength of its management policies in this area of its operations.

Average payment period

The average payment period (or average age of accounts payable) is the average amount of time taken by a company to pay its outstanding accounts. As it indicates the pattern of the bill payment system of a company, prospective lenders and suppliers of trade credit are likely to find this ratio extremely informative.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	17.12	32.11	19.88
Aramit Cement			21.1
Heidelberg Cement Bangladesh Ltd.			16.64

This data shows that MCM slowed the rate of payment of its creditors significantly in 2008. However by 2009 the company was in a relatively similar position to both other companies examined in this study.

Average collection period

The average number of days for which a company's debts (or receivables) are outstanding is called average collection period. Generally, the shorter the average collection period, the better the quality of debtors is likely to be. The implications that can be draw include that the company has a strong and effective debt collection system and that its policies relating to the extension of credit to customers is sound.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	39.22	41.89	22.25
Aramit Cement			23.19
Heidelberg Cement Bangladesh Ltd.			21.9

In this measure all three companies are in a similar position. Heidelberg Cement Bangladesh Limited (HCB) holds the strongest position with its shorter collection period. An implication is that management policies are strong resulting in a relatively short collection period from debtors.

Profitability ratios

Profitability ratios are generally determined if the analyst desires to measure the operating efficiency of a company. In addition to the management of a company, creditors and owners are also likely to be interested in profitability. Creditors want to receive interest and repayment of principal in due time and owners want to get an adequate return on their investment. Both are possible only if the company earns sufficient profits. Implications of abnormally low profitability ratios include high production costs, idle assets, inadequate sales, inadequate selling price, high administrative expenses, and possibly excessive interest rates charged by lenders to the company.

Gross profit margin

The gross profit margin indicates the efficiency of the production of core products. A high gross profit margin relative to an industry average implies that the company is able to produce at lower cost relative to its competitors under similar operating conditions.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	0.12	0.07	0.097
Aramit Cement			0.091
Heidelberg Cement Bangladesh Ltd.			0.093

The data show that MCM was relatively stronger in the measure of gross profit margin than its two competitors. As mentioned earlier, these results might be interpreted as the more effective operating policies such as those relating to Supply chain management (SCM), Just-in-time (JIT) and other project management.

Net profit margin

The net profit margin provides a measure of the relationship between net profit and sales and is interpreted as an indicator of managerial efficiency in operating a business. A company with a high net profit margin would be in a more advantageous position to survive in adverse economic conditions such as a

declining sales price, rising costs of production, or perhaps a decline in demand for its core products.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	0.28	0.29	0.22
Aramit Cement			0.20
Heidelberg Cement Bangladesh Ltd.			0.22

All three companies have a similar level of net profit margin, although it can be seen the MCM's declined across the three-year period. The analyst might need to examine the trend more closely to understand the reason for this decline, and whether or not the competitors experienced a similar trend.

Return on equity ratio

The return on equity ratio indicates how well a company has used the resources provided by its owners. The ratio is likely to be of considerable interest to extant and prospective owners.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	3.58	4.23	4.59
Aramit Cement			4.69
Heidelberg Cement Bangladesh Ltd.			4.19

Generally, the higher the ratio, the stronger is the company's performance. The data show that MCM's performance improved across the period to 2009 and that it considerably outperformed one of its competitors. Aramit Cement Limited (ACI) registered the strongest performance as measured by this statistis.

Return on assets ratio

This ratio shows the relationship between net income and average assets and is used to indicate the overall efficiency of managements' use of assets to generate a return for the owners on their investment in a company.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	0.28	0.33	0.31
Aramit Cement			0.32
Heidelberg Cement Bangladesh Ltd.			0.29

Owners would be looking for a high return on assets ratio. The data show that MCM's best performance across the three-year period occurred in 2008, and that it was strongest in that year compared to all three of the companies in 2009.

Asset turnover ratio

The relationship between net sales and average assets are described as the asset turnover ratio. It is expressed as the number of times that a company produces of sales per unit (TK) of capital employed in its net assets.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	0.99	1.12	1.42
Aramit Cement			1.56
Heidelberg Cement Bangladesh Ltd.			1.34

Generally analysts are looking for a high ratio as indicator of efficiency. The data demonstrate that MCM achieved the highest asset turnover ratio, implying that its management is the most effective in utilizing its net assets to generate sales.

Earnings per share (EPS)

The earnings per share (EPS) calculation indicates a company's earning power on per share basis. EPS does not reflect how much is paid out to the owners in the form of a dividend or how much the company retains in the business to support future growth.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	25.82	27.11	27.89
Aramit Cement			31.19
Heidelberg Cement Bangladesh Ltd.			30.49

Higher the ratio, better the firm's position. In this measure, MCM showed its best performance in 2009. In 2009, ACL was the best. From operation management's aspect these outcomes might be linked to good management of operational aspects of the company such as the Supply chain management (SCM), Just-in-time (JIT) and other projects, as mentioned above.

Expense ratios

Cost of goods sold (COGS) ratio

The ratio shows the relationship between costs of goods sold and net sales.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	87.83	93.07	90.29
Aramit Cement			90.82
Heidelberg Cement Bangladesh Ltd.			89.23

Firms strive to reduce this ratio. Here we see MCM has a falling ratio across the three-year period, although it clearly took action to produce this trend between 2008-2009.

Administrative ratio

This ratio depicts the proportion of administrative expense that is covered by a company's level of net sales.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	1.67	1.51	1.21
Aramit Cement			1.1
Heidelberg Cement Bangladesh Ltd.			1.28

A low ratio is desirable, and all three companies have a similar outcome. ACL showed the lowest ratio and so it can be regarded as having the most effective management of its administrative operations.

Selling expense ratio

This ratio is similar to the administrative ratio and reflects the share of sales units expressed in economic terms (currency: TK) that are required to cover a company's selling costs.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	6.5	1.33	2.63
Aramit Cement			2.68
Heidelberg Cement Bangladesh Ltd.			3.22

As with administrative expenses, a low ratio is desirable. In this measure MCM appeared to be the most efficient.

Financial expense ratio

This ratio is similar to the two above. Financial expenses include interest charges, and can be a significant cost of conducting business. It is important that a company's management effectively controls these expenses.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	3.53	3.11	1.86
Aramit Cement			1.76
Heidelberg Cement Bangladesh Ltd.			1.58

Generally, the lower the ratio the better, as less of the sales units (Tk) are needed to service the interest charges. HCB showed the best position in 2009 relative the earlier years. This might be interpreted as a company that has lower levels of debt than its competitors, and the analyst might need to investigate this matter further to fully understand the reasons underpinning the statistics.

Leverage ratios

Debt-equity ratio

Debt is risky from the perspective of investing in a company as a company has a legal obligation to pay interest on debt and to repay debtholders on maturity of the debt, irrespective of the profits made or losses incurred by the company. The relationship usually indicating the level of this risk is the debt-equity ratio. The greater the debt-equity ratio the greater the risk to debtholders.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	2.75	4.16	3.3
Aramit Cement			3.5
Heidelberg Cement Bangladesh Ltd.			2.6

In this measure, MCM was in most risk in 2008 however by 2009 the company had considerably reduced this level of risk. HCB has the least risky debt/equity ratio.

Activity / Efficiency turnover ratios

Activity ratios are also called efficiency ratios or asset utilization ratios because they indicate the speed with which assets are converted into sales units (Tk). The balance between sales and assets generally reflects effective management of assets.

Work in progress turnover ratio (WPTR)

This ratio indicates the relationship between cost of goods manufactured and average work in process inventory.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	2.29	5.14	5.83
Aramit Cement			5.92
Heidelberg Cement Bangladesh Ltd.			6.02

Lower is generally regarded as better for this ratio. In this measure MCM was most efficient across the entire three-year period under study.

Raw material inventory turnover ratio (RMITR)

The raw material inventory is related to materials consumed in the production processes of a company.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	0.42	0.64	0.69
Aramit Cement			0.66
Heidelberg Cement Bangladesh Ltd.			0.74

Generally the higher the ratio, the better is the outcome. In this measure MCM showed an improving situation across time, and HCB had the strongest position in 2009.

Investment turnover ratios

These ratios are based on the relationship between the cost of goods sold and assets/investments of a company. A number of different ratios are used to understand these situations.

Fixed assets turnover ratio

This ratio indicates a company's efficiency in utilizing its long-term (fixed/capital) assets.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	1.98	2.59	3.87
Aramit Cement			4.23
Heidelberg Cement Bangladesh Ltd.			4.05

Generally the higher the ratio, the more favourably is the statistics regarded. Aramit had the best outcome in 2009 implying that its ability to manage its long term assets and investments is relatively more efficient than its two competitor companies.

Current assets turnover ratio

This ratio depicts the relationship between costs of goods sold and average current ratio.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	1.59	1.79	1.95
Aramit Cement			2.14
Heidelberg Cement Bangladesh Ltd.			2.09

Again, the higher the ratio, the more favourable it is. MCM showed its best performance in 2009, while overall, ACI had the best outcome.

Total asset turnover ratio

Assets turnover ratio shows the firm's ability in generating sales from all financial resources committed to total assets.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	0.86	1.04	1.28
Aramit Cement			1.42
Heidelberg Cement Bangladesh Ltd.			1.19

A higher ratio is expected. In this measure, MCM's performance improved through to 2009. In 2009, Aramit was the best.

&) Market ratios

Price/earnings (P/E ratio)

The price-to-earnings ratio (P/E ratio) is a measure of the price paid for a share relative to the company's net profit earned. A rising P/E ratiois generally attractive

and indicates that investors are paying more for each unit of net income of a company.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	18	11	16
Aramit Cement			12.98
Heidelberg Cement Bangladesh Ltd.			14.1

In this measure, MCM was most efficient in 2007 and had the strongest P/E ratio in 2009.

Market/book ratio

The market-to-book (M/B) ratio provides an indication of how investors view a company's operating and overall performance. It relates the market value of shares to their book value. An increasing M/B ratio is usually regarded as favourable.

Company	2007	2008	2009
Meghna Cement Mills Ltd.	46.48	29.82	44.62
Aramit Cement			40.5
Heidelberg Cement Bangladesh Ltd.			43

In this measure, MCM was most favourable in 2007. Also in 2009 MCM had a stronger M/B ratio than its two competitors.

5.   Concluding remarks

On several important measures Aramit and Heidelberg are regarded as less favourably placed or managed than Meghna. However, in some measures Meghna is not performing as well as its two competitors. These outcomes may at first glance appear to be conflicting, and the analyst must perform additional testing or investigation in order to form a well-informed opinion or run the danger of making or advising clients on inefficient investment and financing decisions.

Some implication that may be drawn from this case study analysis of six important companies in the Bangladesh economy are that to remain or to become more competitive in the cement and pharmaceuticals industries, managers must improve the figures by changing or adopting better operational, financing and management policies. The figures from the financial statement may not always be

very meaningful and performing ratio analysis mar pinpoint anomalies between the ratios provoking further analytical investigation. As such, they are a valuable tool for the detection of manipulation of the numbers in financial statements.

Generally companies that have well defined policies to manage the company and its operations are attractive to investor and finance providers, as they maximize their performance. However, ratio analysis is but one tool that can be and is utilized by analysts seeking to understand the intricacies of corporate management and performance. Other techniques might also be needed to assist in the understanding of whether window dressing (financial statement manipulation) may have occurred, or indeed whether or not the company is a viable long-term investment target. Thriving in a competitive environment requires an assessment of socio-economic as well as managerial and operational as well as current knowledge of policy makers' decisions and the threat of entrance of domestic companies and also foreign companies into the mix.

References

1.   Annual Report (2008, 209 and 2010), Aramit Cement, Heidelberg Cement Bangladesh Ltd., Meghna Cement Mills Ltd.

2.   Annual Report (2009, 2010, and 2011) of Beximco Pharmaceuticals Limited, Square Pharmaceuticals Limited, and ACI Pharmaceuticals Limited

3.   Bierman, Harold and McAdams, Alan K. (1996). "Financial Decisions and New Decision Tools", "*Readings in contemporary financial Management* ", Johnson, Keith B. and Fischer. Donald E. (edited), Scott, Foresman and Company, UK.

4.   Bringham. Eugene F. and Houston, J. F. (2001). *Fundamentals of Financial Management*, Hartcourt Asia Pte. Ltd. 9th edition, Singapore

5.   Emran, Md. Al, Hossain, Md. Akram (2005)."Current status and Prospect of Pharmaceuticals industry in Bangladesh", *Journal of the People's University of Bangladeh*,Volume:2,No.2,July

6.   Gitman lawrence J. (2003). *Principles of Managerial Finance*, Pearson Education (Singapore) Pte. Ltd., Indian Branch, India, 10th edition.

7.   Hampton, John Jr. (1989) : *Financial Decision Making : Concepts, Problems and Cases*, Prentice- Hall. Inc. N.J, USA, 4th edition.

8.   Hashmi, Abdul Malik (1998). "Use of Accounting ratios by a Banker" *,"Financial Management and Project Appraisal",* The Institute of Bankers in Pakistan, Pakistan.

9.   Horne, James C. (1998) : *Financial Management and Policy,* Prentice - Hall of India private Limited, 10th edition.

10.   http://www.va-interactive.com/inbusiness/editiorialfinance/ibt/ratio-analysis.html

11.   Hyder, M. Shafiuddin (1998). "Financial Statements as a basis for lending Decisions", *Financial Management and Project Appraisa*, The Institute of Bankers in Pakistan, Pakistan.

12.   Kevin, S (2000) : *Portfolio Management*, Prentice – Hall of India Private Limited, India.

13.   Khan, M. Y. & Jain, P. K. (1996) : *Financial Management- Text & Problems*, Tata McGraw Hill Publishing Co. Ltd., New Delhi,India.

14.   Kmhagen (2005)."Reading Financial statement with an Analytical eye," http://www.finetuning.com/ articles/po-s96-reading-financial-statements-with-an-analytical-eye.html.

15.   Mostyn, Gregory (2008). *Essentials of Financial Statement Analysis-An Introduction to Financial Statement Analysis,* Worthy and James Publishing.

16.   Moyer, R. Charles et al. (1990). *Contemporary Finaical Management*, West Publishing Company, USA, 4th edition

17.   Pandey, I.M. (1995). *Financial Management,* Vikas Publishing House(Pvt) Ltd., 7th edition, India.

18.   Ross, Stephen A. et.al. (1996).*Essentials of Corporate Finance*, Irwin Mcgraw-Hill, Newyork, USA.

19.   Weygandt, J.R. et. al. (2003). *Accounting Principles*, John Willey & sons Inc., NY. 6th edition

20.   Schall, Lawrence D. and Haley, Charles W. (1980). *Introduction to Financial Management*, McGraw Hill Book Company, NewYork, 2nd edition.

21.   Shabnam, Saadia and Biswas, Kohinoor(2008)."Export Potential of Bangladesh Pharmaceutical Industry: Situational Analysis using TOWS Matrix", *Business Review*, Khulna University, Vol.06,No.1 &2, January to December.