

FINANCIAL PERFORMANCE OF ENGINEERING COMPANIES IN AN EMERGING ECONOMY: BEFORE AND AFTER COVID-19

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ABSTRACT

The COVID-19 pandemic had a significant impact on numerous companies in emerging economies, including the engineering sector, due to lockdown restrictions and supply chain disruptions. Moreover, many companies within the engineering sector witnessed a decline in their financial performance as a result of the pandemic. This study evaluates the influence of the COVID-19 pandemic on the financial performance of the engineering sector in the emerging country - Bangladesh. The study considers the secondary data from the listed companies in the Dhaka Stock Exchange, focusing on engineering companies. This study utilized a quantitative research methodology employing a thematic approach. To evaluate financial performance, changes in net profit, changes in revenue growth, and three relative performance ratios - liquidity ratio, profitability ratio, and solvency ratio are used to compare the corporate performance before and after the COVID-19 pandemic in Bangladesh. It is found that the financial performances of the listed companies in Bangladesh are not facing as many obstacles as are observed in developed economies. This result implies that the impact of COVID-19 is sharply visible in the economy but is not as risky as the developed economy. This result will help corporate people in the developing economy adopt the necessary initiatives to cope with the upcoming natural issues.

INTRODUCTION

During COVID-19, industries worldwide were operating under the threat of the world financial markets (Bahrini and Filfilan, 2020; Bakhshi and Chaudhary, 2020). The lockdown caused unemployment to increase, interest rates to decrease, and the stock market became extremely volatile (Hossain, Nesa, Dowla, & Akter, 2021). Millions of people fell into poverty as a result of the pandemic, businesses faced extinction, the workforce experienced job losses, and society saw a paradigm shift. The crisis and its effects are reflected in the stock market (Bakhshi and Chaudhary, 2020). The

COVID-19 outbreak is, therefore, essential for understanding stock price volatility. The performance and value of a firm to its shareholders can also be determined by its stock price.

The COVID-19 pandemic has affected several industries and ruined some of them globally. The COVID-19 pandemic affected almost all the economic sectors of the country, including the stock markets in Bangladesh (Hossain et al, 2021). The Bangladeshi engineering sector is a powerful sector under DSE, which plays a vital role in the economy of Bangladesh (Bhuiyan and Masum, 2010). Due to the

lockdown policy of the government, the per capita income of low-income people has been reduced by 80% during the COVID-19 period (Mohiuddin, 2020). The flow of foreign remittances also reduced (Bhuiyan, 2020), although the foreign reserve of the country increased during the COVID-19 Period. The foreign reserves of the country have increased as Bangladesh has more imports compared to exports (Hossain et al, 2021). In this empirical study, the engineering sector has been selected as its economic activities have mostly hampered during the COVID-19 pandemic (Sierra, 2022). According to Begum (2023), the performance of engineering companies during COVID-19 is encouraging, except for sales growth.

On the other hand, Fu and Shen (2020) found that the energy industries experienced a significant negative impact due to COVID-19 from the context of China. Due to this diversified view of the COVID-19 scenario in different countries, it becomes a vital issue to identify the impact of COVID-19 on different industries. Therefore, this empirical study will help corporate and regulatory bodies identify the industry-wide impact of the pandemic on the emerging economy so that in the future, emerging countries may handle any upcoming scenario promptly.

In this empirical study, out of 42 listed engineering companies, 28 companies have been selected for the availability of financial information to analyze the overall sector performance. Here, the corporate performance during the COVID-19 pandemic in the DSE-listed engineering sector has been examined. Although the stock market responded favourably to the lockdown announcement, it declined after the lockdown restrictions were lifted (Hossain et al, 2021). To have a more holistic idea about the corporate performance during the COVID-19 pandemic, the financial performance of the engineering sector both before and after the pandemic was examined. The objective of this study is to explore the impact of COVID-19 on the

financial performance of the engineering industry, which will further help the engineering sector to shape its vision mission and operating strategies. The results of the study will help the listed engineering company to allocate its scant resources to the most relevant spending. In addition, the regulatory authority can lounge their regulatory policy as well as governance policy based on the vulnerability of the industry.

LITERATURE REVIEW

The smooth running of any corporation depends on its sustainable performance. Over the last five decades, corporate performance become a vital factor for academic research (Bhuiyan and Masum, 2010; Masum, Uddin, Ahmed, & Uddin, 2019; Hassan, Masum, & Sarkar, 2022). Any unavoidable activities that hamper business operations and business performances become a key issue for academic research as the findings of the academic research will help the corporate people as well as the regulatory authority with more holistic and comprehensive solutions. The activities of businesspeople are hampered by both human-made and natural causes. One of the greatest natural hindrances to economic activities faced by human beings is the COVID-19 pandemic. The COVID-19 pandemic has affected numerous industries and caused some of them to tumble down worldwide. The COVID-19 pandemic affected almost all the economic sectors of the country, including the stock markets in Bangladesh (Hossain et al, 2021). The lockdown caused unemployment to increase, interest rates to decrease, and the stock market became extremely volatile (Hossain, Nesa, Dowla, & Akter, 2021). Consequently, it has a huge impact on corporate performance as well.

There are diversified factors to measure corporate performance in academic research (Hassan, Masum, & Sarkar, 2022; Masum, Latiff, & Osman, 2020). Corporate performance may be

measured through market, accounting-based, and a mixture of market and accounting-based indicators (Masum et al., 2020; Masum and Khan, 2018). Since Bangladesh has a fragile stock market, the market-based corporate performance measures most often provide inappropriate results (Ahmed et al., 2021; Bhuiyan and Masum, 2010). Therefore, to measure the corporate performance in this study, only the market-based indicators, namely Changes in sales growth, changes in net profit, liquidity ratio, profitability ratio, and solvency ratio, have been used. Consistent with the previous literature (Hasan, Masum & Islam, 2010), the current Ratio has been used as the proxy for the liquidity ratio, the profit margin is used as the proxy for the profitability ratio, and debt-equity Ratio has been used as the proxy of solvency ratio. These corporate performance variables are also consistent with the proposition of agency theory (Jensen & Meckling, 2019). As per the agency theory, the managers of a business are appointed by the shareholders to act as an agent of the business (Jensen & Meckling, 2019). Therefore, the managers need to provide corporate performance-related information to the shareholders so that their activities can be evaluated by the shareholders. As an agent of the business, the managers seek to minimize the agency problem by removing information asymmetries among the shareholders (Jensen & Meckling, 2019). Therefore, in the study, five corporate performance variables have been selected.

The pandemic's financial consequences have been felt worldwide, with stock markets experiencing volatility and uncertainty. Investors have faced substantial losses, and consumer spending has notably declined. The full extent of the long-term financial implications of the pandemic is still not fully understood, as they depend on factors such as the duration of the crisis, the effectiveness of containment measures, and the pace of economic revival. The pandemic significantly affected multiple economic, health, and social

sectors. Studies conducted by Kumar & Pinky (2020), Amin et al. (2021), and Ikram et al. (2021) have revealed that the COVID-19 outbreak led to a deceleration in GDP growth, elevated unemployment rates, widening inequality, and heightened poverty levels throughout the country. The implementation of lockdown measures, limitations on domestic tourism, bans on international travel, increasing unemployment rates, and changes in the human quality index all harmed the global economy, as indicated by studies conducted by Rahman & Hossain (2021) and Majumder & Rahman (2022). Das and Patnaik (2020) conducted a study in India and identified several sectors, including telecom, travel industry, avionics, auto industry, and transportation, as heavily impacted by the current crisis. The relationship between COVID-19 and economic performance has been examined by various researchers, including Goswami et al. (2021) and Debata et al. (2020), among others.

In China, Fu and Shen (2020) found that the energy industries experienced a significant negative impact due to COVID-19. They suggest that the poor performance of listed companies following the pandemic may be attributed to the organizational culture and their approach to managing challenges and crises. The existing literature primarily focuses on analyzing the impact of COVID-19 on various sectors in Bangladesh, such as manufacturing, engineering, construction, and services, as well as the overall economy. These studies rely on secondary data to assess selected financial performance indicators and provide qualitative explanations. According to Begum, F. (2023), research about engineering sector performance during COVID-19 shows a significant and positive association between most variables and finances.

Performance is encouraging, except for sales growth. To address this issue, it is recommended that the authorities.

Implement policies aimed at revitalizing sales growth and ensuring consistent production distribution across countries. The COVID-19 pandemic has posed significant challenges to human development, negatively impacting the efficiency and performance of development firms ultimately resulting in decline. To address the detrimental consequences of the pandemic, the government was forced to suspend multiple construction projects, leading to financial losses for both large and small construction companies.

Jallow et al. (2020) provided evidence that managing activities became increasingly challenging, resulting in delays. However, the scope of these studies is relatively narrow, making it challenging to draw definitive conclusions about the specific effects of COVID-19 on a particular sector in Bangladesh. Considering the significant consequences of COVID-19 on the urban informal economy, particularly the construction sector, it is crucial to examine the specific implications of the pandemic on listed engineering companies in Bangladesh.

RESEARCH METHOD

The research focuses on the engineering sector, specifically the companies listed on the Dhaka Stock Exchange (DSE), before the COVID-19 period of 2017 to 2019 and after

the COVID-19 period of 2020 to 2022. Secondary data for the study were collected from various sources, including the Dhaka Stock Exchange website, journals, and other relevant publications. The study's primary unit of analysis is the engineering firms' performances listed on the DSE. A subset of 28 companies was selected from the larger pool of 42 companies operating in the engineering sector and listed on the Dhaka Stock Exchange (DSE). A purposive sampling technique has been used to select the above companies considering the following criteria:

- The annual reports published for the year ended 2017, 2018, 2021, and 2022 either on June 30 or December 31.
- Selected companies are not delisting after COVID-19 or during COVID-19.
- Selected companies have the data to analyze their performance according to our criteria.

The research has been done by using secondary data before and after the pandemic era. For the overall financial performance of the industries, data has been gathered from the DSE website and the annual reports of different companies. Using this data, we have analyzed the revenue growth rate and changes in net income. For their company performance, we analyze the liquidity, profitability, and solvency ratios.

Table 1. Operationalization of Variables

Variables	Description
Revenue growth rate	The revenue growth rate measures the changes in revenue. It could be positive or negative. It measures as a percentage. It can be compared with the previous year and the current year to identify the changes and financial performance of the company.
Changes in Net income	Changes in net income help to find the positive and negative changes for net income after and before COVID-19. After subtracting all the expenses from revenue, an organization gets net income, an important source for finding how efficiently the company is increasing sales and reducing expenses.

Liquidity ratio	For analysis of their liquidity performance, we analyzed the current Ratio. The current Ratio helps to know how many current assets the company has against its current liabilities, and this Ratio needs to be 1.00 or below for better performance. Calculate the Current Ratio- Current Ratio = Current Assets / Current Liabilities
Profitability Ratio	For the profitability ratio, we calculated the profit margin ratio. It helps to know how much profit is earned against our revenue, and it helps us to measure the company's profitability. Calculate profit margin- Profit Margin = (Net Profit / Revenue) x 100
Solvency Ratio	For checking the company's solvency ratio, the debt-to-equity Ratio is used to find how much debt the company has against equity, and the higher debt-to-equity ratio measures how the company borrowed more funds than its equity. Debt to Equity Ratio = (Total Debt / Total Equity)

Table 2. Changes in revenue and net profit

No.	Companies	Revenue (2017-19)	Revenue (2020-22)	Growth	Net profit (2017-19)	Net profit (2020-22)	Change	Inc./ Dec. in Net Profit
1	AFTABAUTO	1.4 B	421.7 M	-70%	8.4 M	1.1 M	-87%	(-)
2	ANWARGALV	433.4 M	610 M	41%	21.9 M	39.7 M	81%	(+)
3	BBSCABLES	7.1 B	6.3 B	-11%	807.6 M	1.2 B	49%	(+)
4	BDLAMPS	940.22M	1627.4M	73%	82.27M	92.54M	12%	(+)
5	BDTHAI	1974M	2371M	20%	96M	162M	69%	(+)
6	Bengal-WTL	1.7 B	331.9 M	-80%	292.7 M	109.7 M	-63%	(+)
7	BSRM Steal	109.4 B	122.1 B	12%	2.6B	4.6B	77%	(+)
8	Coppertech	1.2 B	1.6 B	33%	89.3 M	176.8 M	98%	(+)
9	Deshbandhu	1.7 B	1.8 B	6%	63.2 M	41.3M	-35%	(-)
10	E cables	1.7 B	1.1 B	-35%	(128.1) M	(114.6) M	-11%	(-)
11	Goldenson	1.4 B	145.3 M	-90%	28.3 M	(50.7) M	-79%	(-)
12	Kay & Que	261.7 M	209.4 M	-20%	8.8 M	7.5 M	-15%	(-)
13	KDSALTD	1.9B	3.2 B	68%	144.7M	165.7M	15%	(+)
14	MONNOAGML	252.5 M	203.6M	-19%	969.7 M	951.6 M	-2%	(-)
15	NAHEEACP	173.7 M	151.2M	-13%	377.6 M	343.8 M	-9%	(-)
16	NAVANACNG	5.9 B	4.2B	-29%	61.9 M	11.2 M	-82%	(-)
17	NPOLYMER	3.4 B	5.1 B	50%	150.3 M	213.1M	42%	(+)
18	NLTUBES	6 B	6.3 B	5%	(50.8)M	(80.6) M	-59%	(-)

19	OIMEX	953.5 M	235 M	-75%	126.8M	(105.4M)	-17%	(-)
20	QUASEMIND	1.4 B	1.6B	14%	64.2 M	91.6 M	43%	(+)
21	RANFOUNDRY	1.8 M	1.4 B	-22%	31.1 M	(36.8)M	-18%	(-)
22	RENWICKJA	140.8 M	133.6 M	-5%	48.4M	(64.7) M	-34%	(-)
23	RSRMSTEEL	3.2 B	1.5 B	-53%	106.3 M	179.8 M	69%	(+)
24	RUNNERAUTO	9.5 B	10.1 B	6%	340.8 M	473.9	39%	(+)
25	SALAMCRST	4.1 B	5.3 B	29%	51.5 M	82.3 M	60%	(+)
26	SINGERBD	13.9 B	15.8 B	14%	803.6 M	518.5 M	-35%	(-)
27	SSSTEEL	3.7 B	6.4 B	73%	436.3 M	704.4M	61%	(+)
28	WALTONHIL	41.1 B	81.7 B	99%	7.3 B	12.2 B	67%	(+)

Notes: "M", "B", (+), (-) representing "Million, Billion, Increase, Decrease".

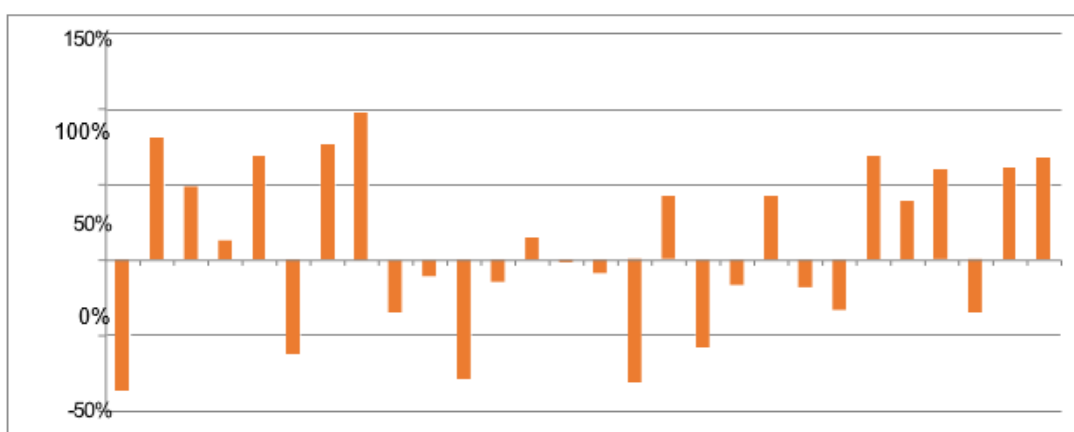


Figure 1. Changes in revenue growth rate

RESULT AND DISCUSSION

Analysis of revenue growth and net profit of the engineering sector

Table 2 shows the growth and profitability of engineering sector companies under the Dhaka Stock Exchange. In Table 2, we visualized our data of the analysis result. In Figure 1, we visualized a bar Figure to show the overall growth rate result. Figure 2 shows that some engineering sector companies' growth rate has become high, and some have become lower. However, in most cases, it goes high. That means that after COVID-19, the engineering sector became a strong sector in

the Dhaka stock exchange. During COVID-19, the revenue became lower for some companies, and they could not return due to their poor financial planning and management or other issues. So, some companies lost their growth rate, and those whose growth rate went down also lost their net profit. We analyze the 2017 to 2019 and 2020 to 2022 data to find their overall performance after COVID-19 and before COVID-19. However, we got a good impact or effect from the changes in the engineering sector after COVID-19. Most companies grow highly, but some cannot grow high; their growth rate decreases.

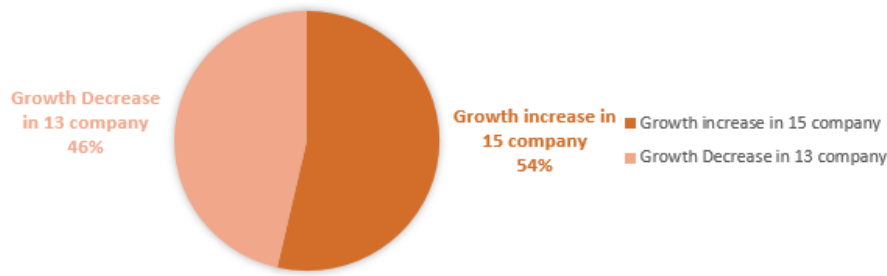


Figure 2. Impact of revenue growth changes

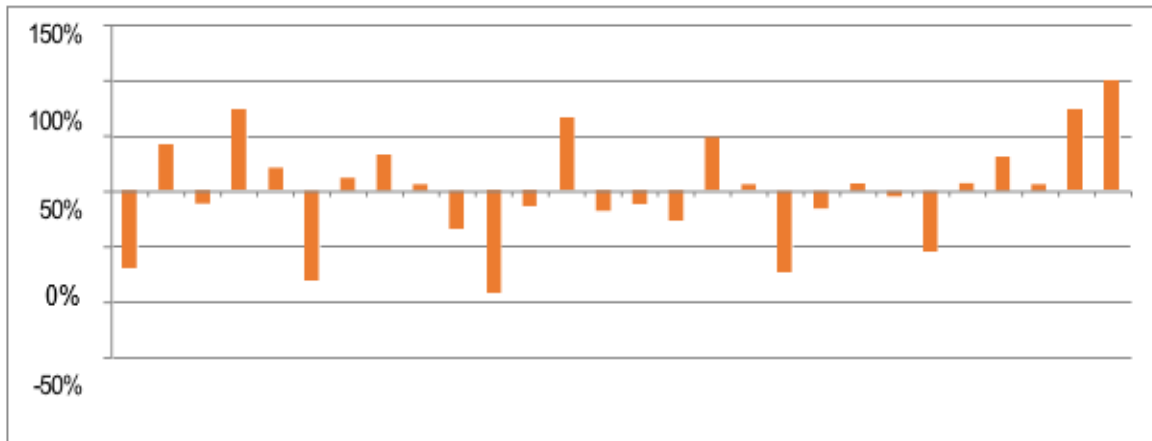


Figure 3. Changes in net profit

Figure 3 reports the result of the changes in net profit of the selected 28 companies.

Among these 28 companies, 14 net profits decreased, and 14 net profits increased. After COVID-19, these changes or increases in the net profit happened because of their excellent management and planning. Also, maybe decreases in net profit happened due to poor planning and management or the Issue of COVID-19 making these changes for some companies because every company does not have the same ability

to do the same production as others. Before COVID-19 and after COVID-19, the net profit for most companies increased, and most of them decreased, but the rate of increasing and decreasing Ratio is 1:1, so we can say that COVID-19 did not create much more effect in changes of net profit because some companies became the gainer and some become the looser if the COVID-19 create much more problem than most of the companies will be the looser but it does not happen.



Figure 4. Impact of changes in net profit

Table 3. Changes in revenue growth rate

Top 5 Growth in revenue changed company			
Growth Increased		Growth Decreased	
Company	Growth Rate	Company	Growth Rate
WALTONHIL	99%	GOLDENSON	-90%
SSSTEEL	73%	BENGAL-WLT	-80%
BDLAMPS	73%	OIMEX	-75%
KDSALTD	68%	AFTABAUTO	-70%
NPOLYMER	50%	RSRMSTEEL	-53%

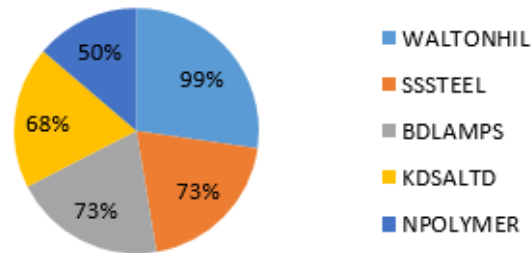


Figure 5. Growth increased

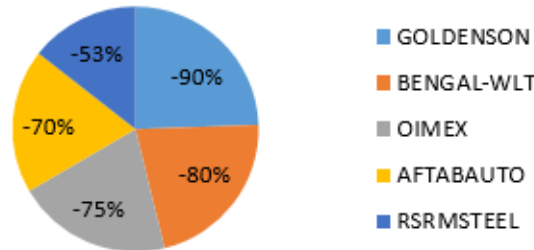


Figure 6. Growth decreased

Figure 5 and Figure 6 show the results of the top 5 growths increased, and top 5 growth decreased companies. Out of 28 companies, the top 5 growth companies are WALTONHIL, SSSTEEL, BDLAMPS, KDSALTD, and NPOLYMER. From this top 5 increased list, we have seen that WALTONHIL Company's growth rate increased almost double, 99%, and NPOLYMER Company's growth rate increased by 50%, the highest minimum growth rate from the top increased list. On the other hand, the proper side pie shows the result of the top 5 growths decreasing

companies' results. We can see that of the 28 top companies whose growth decreased significantly. They are GOLDENSON, BENGAL-WLT, OIMEX, AFTABAUTO, and RSRMSTEEL. From this top 5 decreased list, we have seen that the GOLDENSON Company's growth rate decreased highly due to poor management or coronavirus Issues like lockdowns, etc.

Table 4. Changes in net profit

Top 5 Net profit changed company			
Net profit Increased		Net profit Decreased	
Company	Growth Rate	Company	Growth Rate
ANWARGALV	81%	AFTABAUTO	-87%
BDTHAI	69%	NAVANACNG	-82%
BSRMSTEEL	77%	GOLDENSON	-79%
COPPERTCH	98%	BENGAL-WLT	-63%
RSRMSTEEL	69%	NILTUBES	-59%

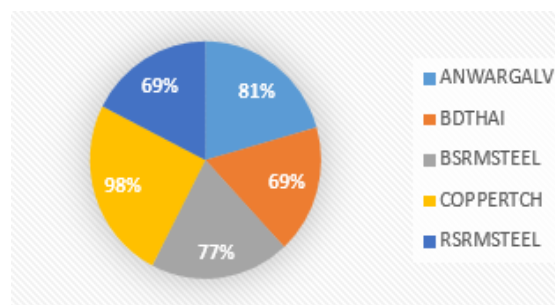


Figure 7. Net profit increase

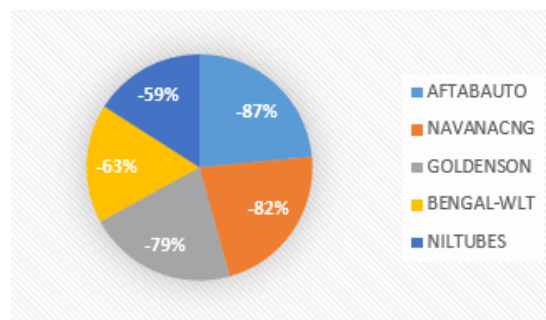


Figure 8. Net profit decreased

The upper pie Chart shows the result of the top 5 net profits increasing and the top 5 net profits decreasing companies. We can see that from 28 companies, the top companies whose net profit increased are ANWARGALV, BDTHAI, BSRMSTEEL, COPPERTCH, and RSRMSTEEL. From this top 5 increased list, we have seen that ANWARGALV Company's net profit change rate increased 81% and RSRMSTEEL Company's net profit change rate increased by 69%, the highest minimum growth rate from the top increased list. On the other

hand, the proper side pie shows the result of the top 5 growths decreasing companies' results. We can see that from 28 companies, the top companies whose growth decreased are AFTABAUTO, NAVANACNG, GOLDENSON, BENGAL-WLT, and NILTUBES. From this top 5 decreased list, we have seen that the AFTABAUTO Company's growth rate decreased highly due to poor management or coronavirus Issues like lockdowns, etc. Also, we have seen that the minimum.

The growth rate from the top 5 decreased lists is 59%, which is for NILTUBES.

Table 5. Current Ratio

No.	Companies	Current Ratio			
		2017-19	2020-22	Change	Favourable/Adverse
1	AFTABAUTO	1.34	1.29	-0.04	Adverse
2	ANWARGALV	1.57	1.34	-0.15	Adverse
3	BBSCABLES	2.18	2.37	0.09	Favourable
4	BDLAMPS	2.38	2.43	0.02	Favourable
5	BDTHAI	3.78	4.57	0.21	Favourable
6	Bengal-WTL	8.36	8.95	0.59	Favourable
7	BSRM Steal	1.15	1.14	0.01	Adverse
8	COPPERTECH	1.36	1.14	0.22	Adverse
9	DESHBANDHU	1.23	1.75	0.52	Favorable
10	E CABLES	1.62	1.27	0.35	Adverse
11	GOLDENSON	1.97	2.38	0.41	Favourable
12	KAY&QUE	0.84	1.02	0.21	Favourable
13	KDSALTD	1.35	1.3	-0.04	Adverse
14	MONNOAGML	1.98	2.39	0.21	Favourable
15	NAHEEACP	6.04	6.51	0.08	Favorable
16	NAVANACNG	1.92	3.06	0.59	Favourable
17	NPOLYMER	1.02	1.2	0.18	Favourable
18	NLTUBES	3.32	3.28	-0.01	Adverse
19	OIMEX	5.97	4.46	-0.25	Adverse
20	QUASEMIND	1.003	1.04	0.04	Favourable
21	RANFOUNDRY	2.77	2.7	-0.03	Adverse
22	RENWICKJA	1.15	1.07	-0.07	Adverse
23	RSRMSTEEL	3.9	3.33	-0.15	Adverse
24	RUNNERAUTO	1.26	1.23	-0.03	Adverse
25	SALAMCRST	0.88	0.88	0	Favourable
26	SINGERBD	1.82	1.49	-0.19	Adverse
27	SSSTEEL	1.98	2.22	0.13	Favourable
28	WALTONHIL	1.68	1.88	0.12	Favourable

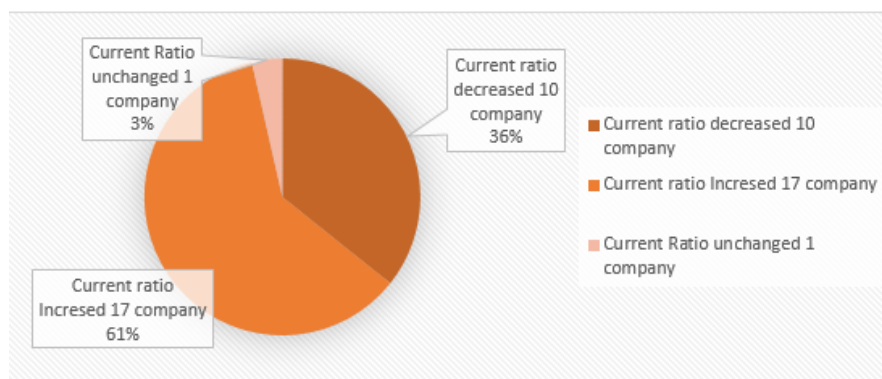


Figure 9. Changes in the Current Ratio

Analysis of the Current Ratio

Table 5 shows the result of the change in the current Ratio. Every company has current assets and current liabilities. Every company needs to make a balance on their current asset with current liabilities. If the current Ratio becomes more than one, it is suitable for the company, and if it is below 1, it is not suitable for the company because it indicates that a company cannot manage its current liabilities with its current assets. This situation is not suitable for the company. We analyze 28 companies' changes in the current Ratio. We find a good

result in the current asset ratio. Most of the company's current ratios have become higher after COVID-19 than before COVID-19, and some of them have become lower, maybe due to the issue of COVID-19 or poor management after COVID-19. Nevertheless, most of the company's current Ratio does not go down under or below one, which indicates that after and before COVID-19, changes happened in the current Ratio. However, it does not negatively impact the engineering sector because most of the company's current Ratio does not go below one, but it changes in most cases.

Analysis of profit margin ratio

Table 6. Profit margin ratio

Companies	Revenue	Net profit	Net profit margin 2017 to 2019	Revenue	Net profit	Net profit margin 2020 to 2022	Changes in Profit Margin
	2017 to 2019	2017 to 2019		2020 to 2022	2020 to 2022		
AFTABAUTO	1.4 B	8.4 M	0.60%	421.7 M	1.1 M	0.26%	(-)
ANWARGALV	433.4 M	21.9 M	5.05%	610 M	39.7 M	6.51%	(+)
BBSCABLES	7.1 B	807.6 M	11.37%	6.3 B	1.2 B	19.05%	(+)
BDLAMPS	940.22M	82.27M	8.75%	1627.4M	92.54M	5.69%	(-)
BDTHAI	1974M	96M	4.86%	2371M	162M	6.83%	(+)
Bengal-WTL	1.7 B	292.7 M	17.22%	331.9 M	109.7 M	33.05%	(+)
BSRM Steal	109.4 B	2.6B	2.38%	122.1 B	4.6B	3.77%	(+)

Coppertech	1.2 B	89.3 M	7.44%	1.6 B	176.8 M	11.05%	(+)
Deshbandhu	1.7 B	63.2 M	3.72%	1.8 B	41.3M	2.29%	(-)
E cables	1.7 B	(128.1) M	-7.54%	1.1 B	(114.6) M	-10.42%	(-)
Goldenson	1.4 B	28.3 M	2.02%	145.3 M	(50.7) M	-34.89%	(-)
Kay & Que	261.7 M	8.8 M	3.36%	209.4 M	7.5 M	3.58%	(+)
KDSALTD	1.9B	144.7M	7.62%	3.2 B	165.7M	5.18%	(-)
MONNOAGML	252.5 B	969.7 M	0.38%	203. 6 B	951.6 M	0.47%	(+)
NAHEEACP	173.7 B	377.6 M	0.22%	151.2 B	343.8 M	0.23%	(+)
NAVANACNG	5.9 B	61.9 M	1.05%	4.2B	11.2 M	0.27%	(-)
NPOLYMER	3.4 B	150.3 M	4.42%	5.1 B	213.1M	4.18%	(-)
NLTUBES	6 B	(50.8)M	-0.85%	6.3 B	(80.6) M	-1.28%	(-)
OIMEX	953.5 M	126.8M	13.30%	235 M	(105.4M)	-44.85%	(-)
QUASEMIND	1.4 B	64.2 M	4.59%	1.6B	91.6 M	5.73%	(+)
RANFOUNDRY	1.8 M	31.1 M	1.73%	1.4 B	(36.8)M	-2.63%	(-)
RENWICKJA	140.8 M	48.4M	34.38%	133.6 M	(64.7) M	-48.43%	(-)
RSRMSTEEL	3.2 B	106.3 M	3.32%	1.5 B	179.8 M	11.99%	(+)
RUNNERAUTO	9.5 B	340.8 M	3.59%	10.1 B	473.9	4.69%	(+)
SALAMCRST	4.1 B	51.5 M	1.26%	5.3 B	82.3 M	1.55%	(+)
SINGERBD	13.9 B	803.6 M	5.78%	15.8 B	518.5 M	3.28%	(-)
SSSTEEL	3.7 B	436.3 M	11.79%	6.4 B	704.4M	11.01%	(-)
WALTONHIL	41.1 B	7.3 B	17.80%	81.7 B	12.2 B	14.93%	(-)

Notes: "M", "B", (+), (-) representing "Million, Billion, Increase, Decrease"

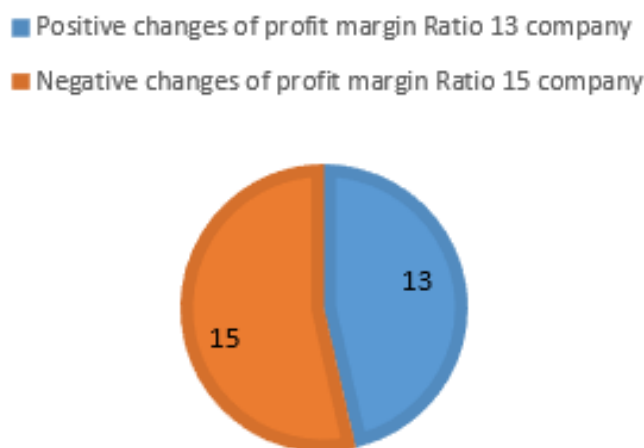


Figure 10. Changes in profit margin ratio

The profit margin ratio is the Ratio of checking the company's profitability. We found all the company's profit margin ratios and compared them before and after COVID-19 results, and we got some positive and negative results in profitability changes. There are 13 companies whose profit margins have positive changes and 15 with negative margins. That means we can say that most of the company's profit margin goes down, which is a bad situation, and it

indicates the performance of the engineering sector under DSE for profitability is not good at all. Also, research said that a profit margin below 5% is not good, more than 10% is average, and more than 25% is awesome. After researching 28 companies, we saw that most of the company's profit margins are below 5%, which indicates the bad performance of the engineering sector after and before COVID-19.

Analysis of debt to equity ratio

Table 7. Debt to equity ratio

No.	Companies	Debt to Equity Ratio		Changes
		2017-19	2020 to 22	
1	AFTABAUTO	1.6	2.3	44%
2	ANWARGALV	2.63	2.44	-7%
3	BBSCABLES	0.9	0.7	-22%
4	BDLAMPS	1.09	1.69	55%
5	BDTHAI	0.66	0.68	3%
6	Bengal-WTL	0.12	0.11	-8%

7	BSRM Steal	1.62	1.89	17%
8	Coppertech	1.31	1.06	-19%
9	Deshbandhu	1.72	1.26	-27%
10	E cables	1.42	0.28	-80%
11	Goldenson	0.72	1.23	71%
12	Kay & Que	0.6	0.67	12%
13	KDSALTD	1.29	1.35	5%
14	MONNOAGML	1.36	1.62	19%
15	NAHEEACP	1.52	1.69	11%
16	NAVANACNG	0.81	0.32	-60%
17	NPOLYMER	2.43	2.08	-14%
18	NLTUBES	5.08	0.15	-97%
19	OIMEX	1.36	1.52	12%
20	QUASEMIND	0.48	0.67	40%
21	RANFOUNDRY	0.6	0.54	-10%
22	RENWICKJA	1.38	1.59	15%
23	RSRMSTEEL	1.66	1.85	11%
24	RUNNERAUTO	1.23	1.46	19%
25	SALAMCRST	5.3	5.98	13%
26	SINGERBD	2.27	3.39	49%
27	SSSTEEL	1.29	1.54	19%
28	WALTONHIL	1.39	1.52	9%

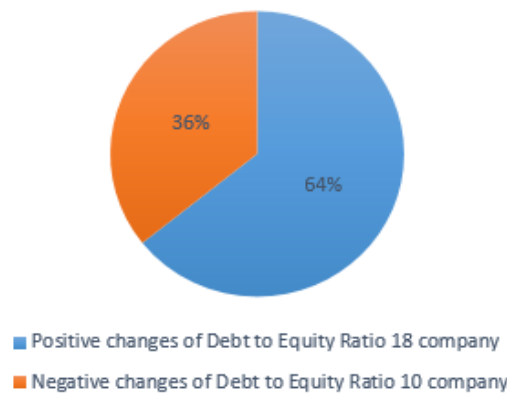


Figure 11. Changes in debt to equity ratio

CONCLUSIONS

The objective of this study is to examine the impact of COVID-19 on the financial performance of the engineering industry from a thematic approach. In this study, the changes in corporate performance based on selected performance indicators have been used to compare the periods before COVID-19 and after COVID-19. It is expected that the findings will assist the engineering sector in shaping its vision, mission and operating strategies considering any upcoming uncertain and unavoidable atmosphere. In this research, the overall company's financial performance has been investigated by comparing the changes in Ratio. Based on the five corporate performance variables, it can be concluded that the selected companies' term and short-term performances are good, which indicates that the engineering sector become a stronger sector under DSE and can overcome any sudden adverse situations. It cannot be denied that the overall government policy during COVID-19 is also very congenial for corporations to recover from the pandemic situation.

This study has several limitations as well. Here, no causal relationship has been examined as these studies are most common in academic research during COVID-19. A further study can be conducted to explore the comparative causal relationship between the pandemic Period and the post-pandemic Period. Furthermore, sufficient

laps of time are required for the representative samples to have such a comparison. In addition, this study has been conducted based on secondary data. Primary data based on managerial perceptions of corporate performance during COVID-19 might provide additional milestones in academic research. Furthermore, the study only considers the engineering companies operated in Bangladesh; a comparative study considering multiple country contexts might provide some robustness in similar studies.

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