Report On

Factors affecting buying behavior of Color CI sheets of Jalalabad Steel Limited

By

Fahim Kazi
19104123

An internship report submitted to the BRAC Business School in partial fulfillment of the requirements for the degree of
Bachelor of Business Administration

BRAC Business School
BRAC University
May 2023

Declaration

It is hereby declared that

1. The internship report submitted is my/our own original work while completing degree at Brac University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I/We have acknowledged all main sources of help.

Student's Full Name & Signature:

Fahim Kazi
19104123

Supervisor's Full Name & Signature:

Shihab Kabir Shuvo
Lecturer, BRAC Business School
BRAC University

Letter of Transmittal

Shihab Kabir Shuvo
Lecturer,
BRAC Business School
BRAC University
66 Mohakhali, Dhaka-1212

Subject: Internship Report

Dear Sir,

This is my pleasure to display my entry level position as an intern at Jalalabad Steel Limited which I was appointed to. The Internship lasted for a period of four months and provided me a stable base of practical knowledge about the job field.

I have attempted my best to finish the report with the essential data and recommended proposition in a significant compact and comprehensive manner as possible.

I trust that the report will meet the desires.

Sincerely yours,

_____

Fahim Kazi
19104123
BRAC Business School
BRAC University
Date: May 03, 2023

Non-Disclosure Agreement

I, the undersigned, hereby declare that the piece of work has been prepared by me under the guidance of Mr. Shihab Kabir Shuvo, Lecturer, as a requirement for the accomplishment of BBA degree from the department of Bachelor of Business Administration of BRAC University. It is also declared that, this report has been prepared for academic purpose only and has not been/will not be submitted elsewhere for any other purpose.

This agreement is made and entered into by and between Jalalabad Steel Limited and the undersigned student at Brac University…….

Acknowledgement

While the writing of this report had been difficult, the preparation for writing had been even harder. It certainly would not have been possible without the help of many people and I would like to acknowledge my appreciation to all those who had helped during the process.

First, I must express my gratitude to Lecturer Mr. Shihab Kabir Shuvo, BRAC Business School, BRAC University and my Friends, who helped me to choose a topic that was of interest and could be of use to my organization. Their guidance in helping me to separate the important and necessary details from the unnecessary certainly helped me to stay on the correct track.

My heartfelt gratitude and respect go to Mr. Mohammad Jamil Hossain (Chairman) & Mr. Asif Ahmed (Account Manager) English Road Branch Jalalabad Steel Limited. His guidance had been invaluable and helped me to learn a great deal more than I could have otherwise learnt.

My gratitude goes out to all my friends who helped during the difficult times when I felt like work was hard and ready to give up. They gave me encouragement and hope, just by being there. Lastly, I would like to thank my family who has been with me not only these few weeks, but during all my life. They have been extremely patient and always willing to sacrifice when it came to my studies and now work

Fahim Kazi
19104123
BRAC Business School
BRAC University

Executive Summary

This report is about my experience as an Intern at Jalalabad Steel ltd. The internship lasted for a period of four months, from January to April 2023. After completing all the academic courses under the BBA program, which consist mostly of theoretical knowledge, a stable base of practical knowledge is also necessary before entering the job market, which is gained through this Internship. I got accepted to intern at an Industrial Company which is leading in the private steel industry called Jalalabad Steel Ltd. Here, I was assigned to the accounts department, where I was involved in various tasks related to financial accounting and analysis.

Jalalabad Steel Limited is the manufacturer of color CI sheets along with other products. They installed a Color Coating Line, the first in the industry in Bangladesh to manufacture pre-painted colored steel sheets. The report begins with an introduction of the company, its products and services. This is followed by a detailed description of the internship experience, including the roles and responsibilities, the projects I worked on and the skills I have developed. Throughout the Internship, I have developed various skills such as attention to detail, time management and problem solving. The Report applies performance evaluation of Jalalabad Steel Limited of Bangladesh. It means evaluating how well the company performed in its activities. The objective is achieved through Comparing years of data, Comparative analysis, Ratio analysis, SWOT analysis & Porters five forces analysis. The main data is collected from the annual financial reports of Jalalabad Steel Limited through internal means.

Table of Contents

Chapter 1
Overview of the Internship

1.1 Student Information

Fahim Kazi
19104123
BRAC Business School (BBS), Bachelor of Business Administration (BBA)
Finance & Computer Information Management (CIM)

1.2 Internship Information

1.2.1 Period - January 2023 to April 2023 (4 months)
Company Name - Jalalabad Steel Limited
Department/Division - Accounts/Finance
Address - 57, Goal Nagar Lane, English Road, Dhaka-1100, Bangladesh.

1.2.2 Internship Company Supervisor's Information:
Asif Ahmed
Accounts In-charge
+8801911116972, +8801814099959
asif.rpc@gmail.com

1.2.3 Job Scope – Job Description/Duties/Responsibilities

As an Accounts Intern, I had the opportunity to gain hands-on experience in various accounting tasks, including but not limited to:

- Assisting with accounts payable and receivable
- Recording transactions in accounting software
- Preparing financial statements
- Conducting bank reconciliations
- Assisting with budgeting and forecasting

- Providing general administrative support to the accounting department

1.3 Internship Outcomes:

1.3.1 Student's contribution to the company

As a student, my contribution to the company is dependent on my role and responsibilities. However, some the contribution includes:

1. Fresh perspective: As a student, I brought a fresh perspective to the company, which can be valuable in identifying new opportunities or innovative solutions.
2. Hard work and dedication: I have contributed to the company by working hard and showing dedication to my role and responsibilities.
3. Willingness to learn: By being eager to learn and asking questions, I contributed to my internship company's growth and development.
4. Completion of tasks: By completing tasks assigned to me on time and to the best of my abilities, I can help ensure the smooth running of the company's operations.
5. Assistance with projects: Depending on my role and responsibilities, I may be able to contribute to ongoing projects or initiatives within the company.
6. Positive attitude: By maintaining a positive attitude and being a team player, I can help foster a positive work environment and contribute to the company's culture.

Overall, as an intern, my contribution to the company may not be as significant as that of a full-time employee, but it can still be valuable and meaningful. By being engaged, hardworking, and willing to learn, I can make a positive impact on the company and set myself up for future success.

1.3.2 Benefits to the student

Internships can provide numerous benefits to me as a student, including:

1. Professional experience: Internships provide an opportunity to gain hands-on professional experience in a real-world setting, which can be invaluable in preparing for a future career.
2. Skill development: Internships can help me develop new skills and build on existing ones, such as communication, time management, problem-solving, and teamwork.

3. Networking: Internships provide an opportunity to get to know and interact with professionals in my field, which may be helpful to find a job in the future or get help when needed.
4. Career exploration: Getting an idea of what I want to do in the future, getting a better understanding of the career market as a whole can be gained through this internship.
5. Resume building: Internships provide a valuable addition to my resume and can demonstrate to future employers that I have relevant work experience.
6. Academic credit: Some internships may offer academic credit, which can help me fulfill academic requirements while gaining practical experience.
7. Personal growth: Internships can help me build confidence, independence, and a sense of responsibility, which can contribute to personal growth and development.

Overall, internships can be a valuable experience for students in terms of professional development, personal growth, and career preparation.

1.3.3 Problems/Difficulties (faced during the internship period)

Me as a student may face various problems or difficulties during their internship period. Here are some common ones:

1. Lack of guidance: I may face difficulties if I don't receive enough guidance or support from my supervisors or mentors. This can lead to confusion about my responsibilities or expectations.
2. Time management: Balancing an internship with coursework or other commitments can be challenging, and I may struggle with managing my time effectively.
3. Communication: Poor communication with supervisors or colleagues can lead to misunderstandings or mistakes.
4. Lack of training: If I am not adequately trained for my role, I may struggle to perform my tasks or may feel unprepared for certain situations.
5. Unfulfilling tasks: I may feel unfulfilled if I am given tasks that are repetitive or do not align with their interests or career goals.
6. Unpaid internships: Financial difficulties can be a challenge for me as a student who is not paid for their internships and may have to balance the costs of living with my work.

7. Discrimination: I may face discrimination or harassment based on my race, gender, or other characteristics, which can create a hostile work environment and impact my mental health.

It's essential for me to communicate any difficulties I face during my internships with my supervisors or mentors. This can help address any issues and provide an opportunity to receive additional support or guidance.

1.3.4 Recommendations (to the company on future internships)

Here listed are some recommendations which companies can consider to provide a positive internship experience for students:

1. Clear expectations: Companies should provide clear expectations and guidelines for their interns. This includes defining their roles, responsibilities, and goals for the internship.
2. Regular feedback: Providing regular feedback to interns can help them improve their skills and feel supported during their internship. Companies should schedule regular check-ins with interns to discuss their progress and provide constructive feedback.
3. Mentorship: Companies should assign a mentor or supervisor to their interns to provide guidance and support during their internship. Mentors can help interns with questions or challenges that they may face during their internship.
4. Training and development: Companies should offer training and development opportunities to interns. This can include workshops, seminars, or other opportunities to develop new skills or gain industry knowledge.
5. Meaningful work: Companies should assign meaningful work to their interns that aligns with their interests and career goals. Interns should be given opportunities to contribute to the company's work and see the impact of their contributions.
6. Inclusion and diversity: Companies should foster an inclusive and diverse workplace culture. This includes providing equal opportunities to all interns, regardless of their background, gender, or ethnicity.
7. Compensation: Companies should consider compensating their interns, even if it's a stipend or reimbursement for expenses. This can help alleviate financial stress for

students and make internships more accessible to those who may not have the financial means to work for free.

Overall, by implementing these recommendations, companies can create a positive and supportive internship experience for students that can contribute to their professional growth and development.

Chapter 2
Organization Part

2.1 Introduction

Jalalabad Steel Ltd is a leading steel manufacturing company in Bangladesh that specializes in producing high-quality steel products for various industries. The company has been operating for several years and has established itself as a trusted name in the steel industry. With a commitment to quality, innovation, and customer satisfaction, Jalalabad Steel Ltd has been able to achieve significant growth and success in the industry. In this report, I will provide an in-depth analysis of the company's operations, financial performance, and overall business strategy, along with recommendations for future growth and success.

2.2 Overview of the Company

Jalalabad Steel Ltd is a leading steel manufacturing company in Bangladesh that produces a wide range of high-quality steel products for various industries. The company was established in 1953 and has since become a trusted name in the steel industry, known for its commitment to quality, innovation, and customer satisfaction. Jalalabad Steel Ltd has a state-of-the-art manufacturing facility located in the capital city of Dhaka, equipped with modern technology and equipment to ensure the highest standards of production. The company has a strong distribution network across Bangladesh and exports its products to several countries worldwide. Jalalabad Steel Ltd product portfolio includes steel bars, rods, wire rods, angles, channels, and other specialty products, catering to the needs of construction, automotive, and other industries. The company has a team of experienced professionals who oversee its operations, ensuring efficiency, and maintaining the highest quality standards. With a focus on

continuous improvement and innovation, Jalalabad Steel Ltd is poised for continued growth and success in the steel industry.

They have a vision where they will be the steel industry benchmark countrywide and provide value creation and corporate citizenship.

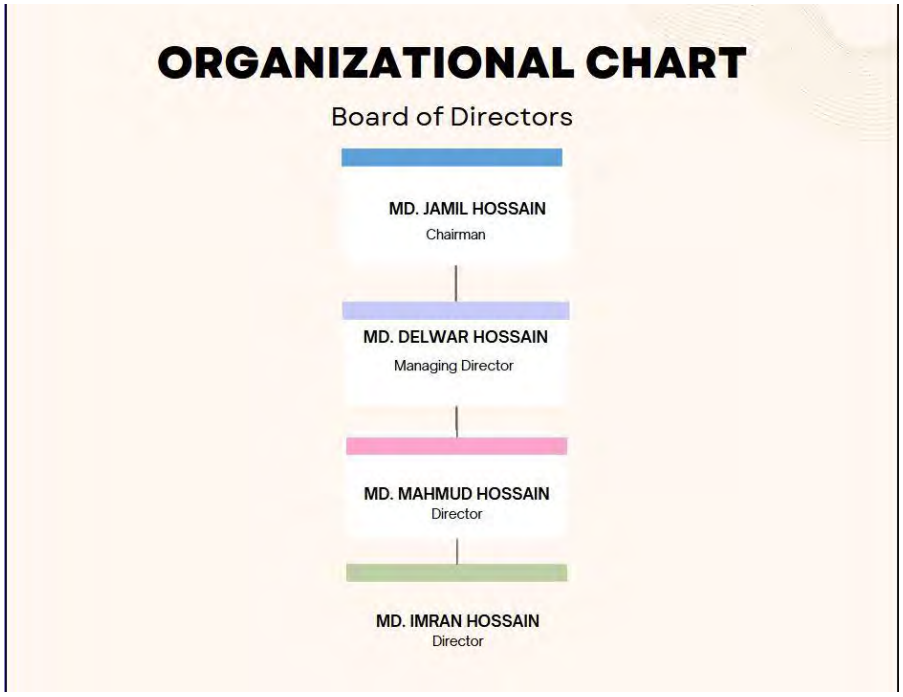
The Jalalabad Group has always been driven by five core values

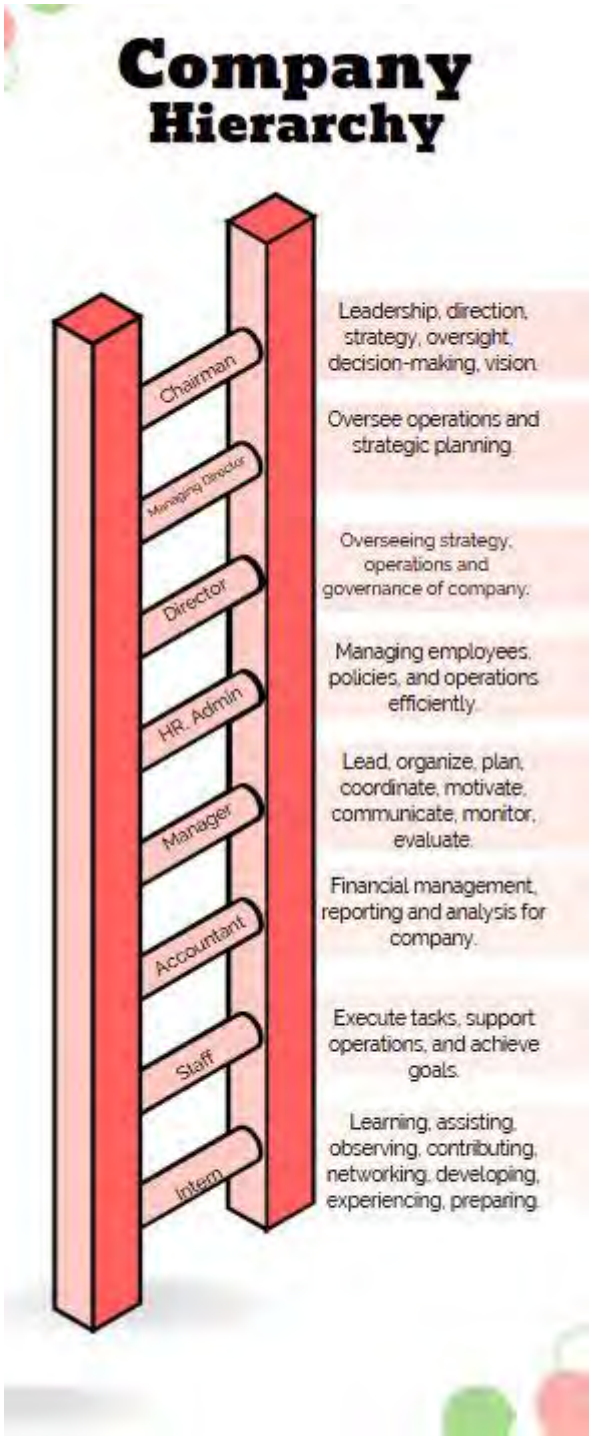
- Integrity: They do their business in an ethical, open, and transparent manner. Every action they take must withstand examination from the general public.
- Understanding: They are considerate, respectful, compassionate, and humane toward their coworkers and clients around the nation.
- Excellence: They consistently work to meet the highest standards in their everyday production in addition to the caliber of the products and services they offer.
- Unity: Together, they develop strong business ties based on tolerance, comprehension, and cooperation with their coworkers within the organization as well as with their clients and partners around the globe.
- Responsibility: They make sure that what comes from the people goes back to the people many times over because they are responsive to the ecosystems, communities, and nations in which they work.

The Jalalabad Group takes great pride in their culture of performance. In all facets of their operations across the nation, they are dedicated to the pursuit of ambitious goals as well as safety, environmental preservation, ongoing innovation, transparency, and social responsibility.

2.3 Management Practices

The organization follows a leadership style where at the top are the Board of Directors and following them are managing director, director and the rest. This will be properly represented using the diagram below-


ORGANIZATIONAL CHART
Board of Directors
MD. JAMIL HOSSAIN
Chairman
MD. DELWAR HOSSAIN
Managing Director
MD. MAHMUD HOSSAIN
Director
MD. IMRAN HOSSAIN
Director



The leadership style of an organization can greatly influences its ability to achieve its goals and objectives. A leadership style that is focused on clear communication, setting achievable targets, motivating and empowering employees, and promoting collaboration can help create a positive work culture and increase employee engagement. This, in turn, can improve productivity, creativity, and innovation, and ultimately lead to the successful achievement of

the organization's goals and objectives. On the other hand, a leadership style that is autocratic, micromanaging, or lacks communication can demotivate employees, create a negative work environment, and hinder progress towards achieving organizational goals.

JSL has a top-down approach to strategic planning. At the corporate level, top management develops strategy, which is subsequently communicated through the division to the individual goals. The choice is often made by the Board of Directors or Executive Committee. Lower level managers in this process take a detached approach to decision-making and place a greater emphasis on personal goals and operational monitoring.

There are three methods the Jalalabad Steel Limited conducts its entry-level hiring procedure. The hiring of probationary officers is one method. There is a one-year probationary period for each probationary officer. After the probationary period is over, the officer is hired as an officer grade III (b). A probationary officer's professional path leads to several management roles. A non-probationary officer who joins as an assistant officer is the second method of hiring. An assistant officer's career path is longer than that of a probationary officer. The third method of hiring involves hiring staff and support personnel for jobs like typewriter, messenger, driver, guard, attendant, cleaner, and other entry-level positions. JSL's promotion process is primarily based on seniority. Employees are occasionally elevated to a higher rank in recognition of their exceptional work. However, it has been discovered that an employee typically holds a post for five years on average.

All organizational actions are strictly under the Company's supervision. To implement controlling measures in internal operations, the Jalalabad Steel Limited has an audit and inspection department. Teams of auditors and inspectors are periodically dispatched to the branches, where they are tasked with compiling reports that will be given to the chief administration for action.

2.4 Marketing Practices

Since Jalalabad Steel has a fixed market in which they operate in and has long term customer retainment, in present they are ineffective when it comes to marketing strategies however here are some suggestions in which they can improve-

- Define target market: Identify the primary target market for the company's products, such as construction companies, building contractors, and architects.
- Conduct market research: Conduct market research to understand customer needs, preferences, and trends. This can include online surveys, focus groups, and interviews.

- Develop a brand identity: Create a unique brand identity for Jalalabad Steel LTD, including a logo, tagline, and messaging that reflects the company's values and competitive advantages.
- Use digital marketing: Create a strong online presence by creating a website, using social media, and using email marketing to connect with clients and advertise the business's goods.
- Invest in SEO: Improve the website's visibility and traffic by making it more search engine friendly.
- Participate in industry events: Attend trade exhibitions and other business gatherings to promote the brand's products and build relationships with future clients.
- Build relationships with customers: Establish strong relationships with customers through excellent customer service and follow-up, which can lead to repeat business and referrals.
- Offer promotions and incentives: Offer promotions, discounts, and other incentives to attract new customers and encourage existing customers to purchase more products.
- Monitor and measure results: Track the effectiveness of the marketing strategy by monitoring website traffic, social media engagement, sales revenue, and customer feedback. Adjust the strategy as needed to improve results.

Following these strategies, Jalalabad Steel will be able to successfully gain a larger market and be able to retain more customers in the long run.

2.5 Financial Performance and Accounting Practices

Financial Performance

Current ratio

Last 10 years the current ratio is showing that the ability to meet short-term obligations of Jalalabad steels was averagely more than 1. But in 2022 the short-term obligation ability went down to 0.96. So, it shows lack of ability to meet the short-term obligation & also shows the riskiness of the business.

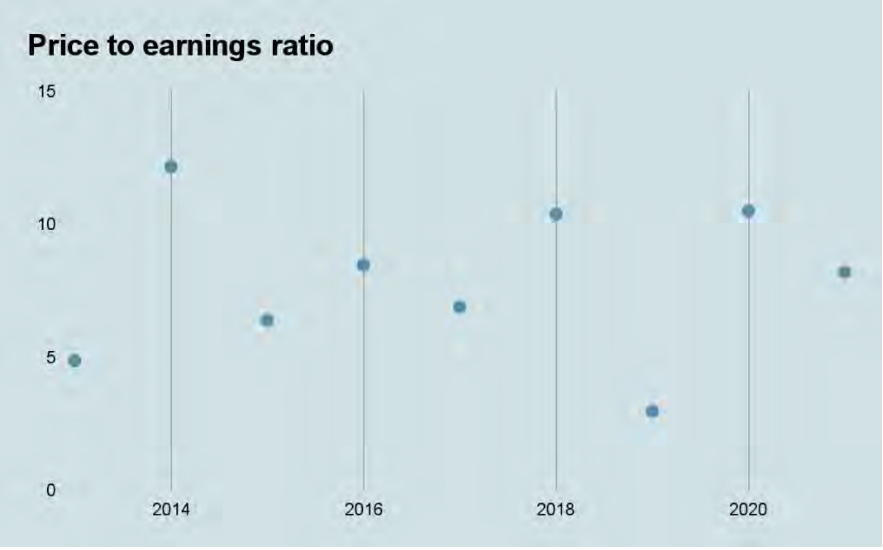
Inventory turnover (in days)

Last 10 years the inventory turnover ratio is showing that the ability/efficiency of stock utilization of Jalalabad steels was averagely 40 days. But in 2022 the inventory turnover utilization days goes up to 45 days. It increased 3 days from 2021. Therefore, it shows lack of ability/efficiency in stock utilization of Jalalabad steel.

Debtors Turnover (in days)

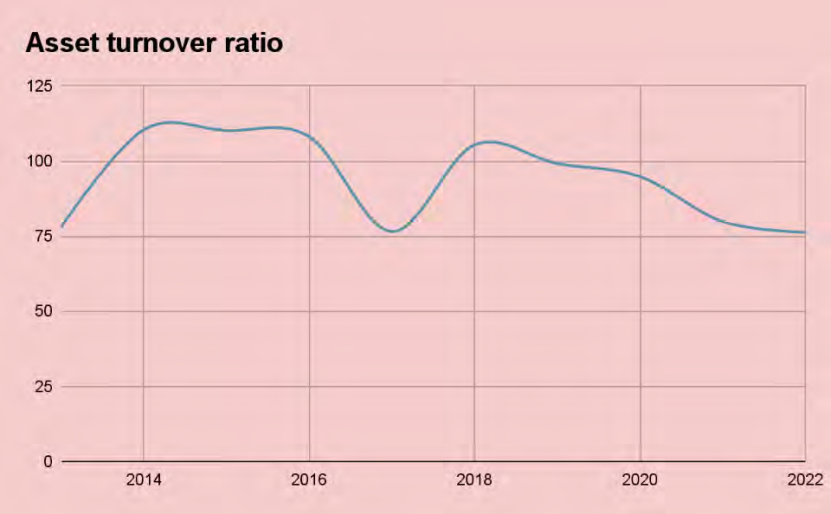
Last 10 years the debtors' turnover ratio is showing that the ability of debt collection of Jalalabad steel's is in a declining state. Every year their debt collection ability goes up. But in 2022 the debtors' turnover collection ability went down to 7 days. It increased by 2 days compared to the year of 2021. So, it shows a lack of ability in debt collection of Jalalabad steel.

Price to earnings ratio



Last 10 years the P/E ratio of Jalalabad steel's is showing that of an up & down manner. P/E ratio shows the earnings growth. In 2022 the P/E ratio went down to 6.93, meaning the earnings growth went down than the year of 2021.

Asset turnover ratio

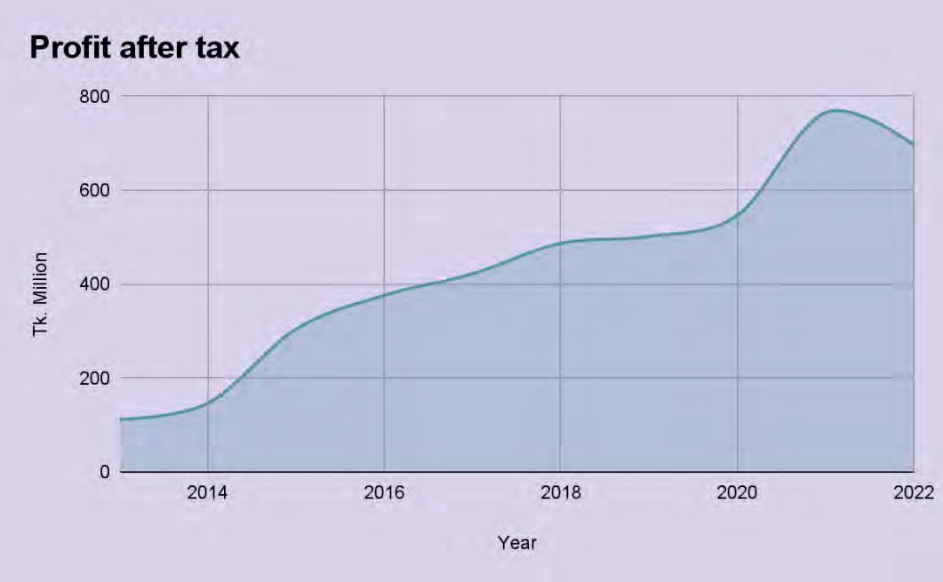


Asset turnover shows how efficiently a company's assets generate revenue. In the years 2013 to 2017 the asset turnover was fluctuating. But from the year of 2018 to 2022 the asset turnover was in a decline.

PBT/Turnover

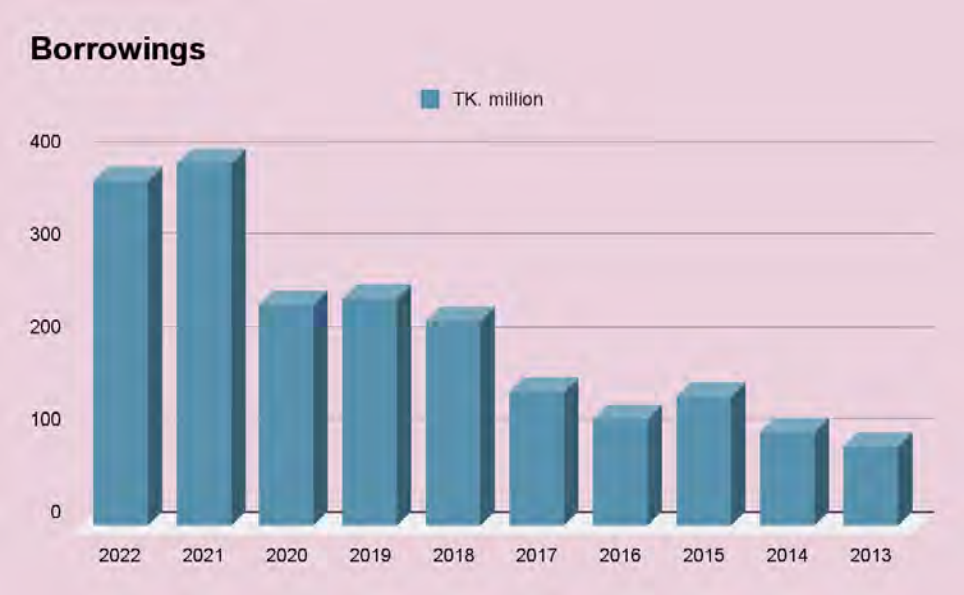
Last 10 years the PBT/Turnover percentage of Jalalabad steel has fluctuated. In 2022 the percentage of PBT/Turnover of Jalalabad steel went down to 27.54 percent. So, it means Jalalabad steel's turnover is decreasing in 2022.

Profits after Tax



Last 10 years the profit after tax of Jalalabad steel has been showing an increase over time. In 2021 & 2022 the profit after tax of Jalalabad steel crossed the Tk. 600 Million. So, it means Jalalabad steel's profit after tax increases every year. But in 2022 profit after tax will be down compared to 2021.

Borrowings



From 2013 to 2016 the borrowing amount was below Tk. 350 million. As their position & industry goes up their borrowing amount goes up. From 2017 to 2022 the borrowing amount rapidly crossed Tk. 350 million. It means Jalalabad Steel invested more to enrich their position & their investment was giving expected profit to them. But in 2022 the borrowing amount was less than the 2021.

In the year 2022 the Jalalabad Steel's financial performance wasn't good compared to the year 2021. Because-

- Their investments are increasing but as well as their expenditures are also increasing. This is one of the causes of the loss.
- Borrowing is important for the investments, but increasing borrowing can lead to higher borrowing costs. That can minimize or lead to negative effects on net profit.
- Lack of efficiency in inventory turnover, debtor's turnover creating problems in the year 2022 for Jalalabad steel.
- Asset turnover shows decreasing manners meaning the assets of Jalalabad steel aren't generating revenue**.**
- P/E ratio low means the earnings growth rate from the company share is going down in the year 2022. That de-motivates the investors & creditors.

Financial Analysis

The evaluation procedure was based on qualitative factors that take into account the company's policies in regard to its operating strategy, financial leverage, and long-term financial objectives. I've broken down the financial element of the company into five separate categories for the aim of assessing its total financial risk: profitability analysis, liquidity analysis, cash flow analysis, asset management, capital structure, and overall financial flexibility. Below, a thorough examination is provided:

Financial Statements: Jalalabad Steel Limited

Profitability Analysis

FYE: December	**2022***	**2021**	**2020**	**2019**	**2018**
Revenue (BDT in millions)	1,608.57	1,503.59	1,278.24	1,121.79	671.70
Revenue Growth (%)	28.38	17.63	13.95	67.01	23.31

COGS (BDT in Millions)	1,418.12	1,304.57	1,166.00	1,015.00	537.00
COGS Growth (%)	30.45	10.65	16.10	89.03	17.80
Operating Profit before tax (BDT in Millions)	111.10	97.54	82.05	89.32	98.15
Net Profit After Tax (BDT in Millions)	77.55	65.53	57.54	51.52	39.96
Gross Profit Margin (%)	11.84	13.24	7.76	9.47	20.02
Operating Profit Margin (%)	7.35	8.70	6.42	7.96	14.61
Net Profit Margin (%)	4.82	4.36	4.50	4.59	5.95
ROE (%)	18.45	21.04	27.27	30.05	30.57
ROA (%)	24.19	24.77	15.15	20.41	28.56

*Data obtain form Audited Financial Statements of 2018-2021, *2022 unaudited 11 months data obtained from management report*

JSL's revenue growth increased in the FY 2021 and expected to continue at the end of FY 2022, as its distribution network increased to more than 100 covering more than 30 districts. It also got support for its sales from both of its sister concerns Lucky Steel Ltd and Jalalabad Steel Building Ltd. Increased demand from Industrial building and rural areas helps to increase sales volume and revenue of color CI sheets in spite of increased sales price. Yearly increased importing raw material cost along with other direct production costs increased overall cost of production. Its GPM follows a fluctuating trend and stood at 13.24% in FY 2021 and reduced to 11.84% in the ten months of FY 2022. Operating cost controlling helps to improve OPM of FY 2021 which also went down to 7.35% in ten months of FY 2022. Increased borrowing cost of FY 2021 led down its NPM to 4.36% from 4.50%. Return of equity and assets trend of the

last five years is decreasing, indicating that cumulative retained earnings need to improve for incremental return.

Liquidity Analysis

FYE: December	2022*	2021	2020	2019	2018
Cash Ratio	0.12	0.14	0.013	0.016	0.036
Current Ratio (times)	1.50	1.60	1.09	1.44	1.20
Quick Assets Ratio (times)	0.47	0.48	0.31	0.15	0.21
Trade Receivables (days)	14	21	19	5	1
Trade Payables (days)	1	1	1	2	5
Inventory Turnover (days)	69	85	92	104	132
Cash Conversion Cycle (days)	82	106	110	107	128

*Data obtain form Audited Financial Statements of 2018-2021 *2022 unaudited 11 months data obtained from management report*

Cash position of the company is capable of meeting creditors within FY 2021 and FY 2022 (ten months) though cash ratio is below than the standard. Current ratio is relatively low as its current liability increased significantly other than borrowing during the FY 2021. Inventory position over the current assets is very high, over the last five years as well as FY 2022 (10 months) consequently its quick assets ratio stood at very low position. Bulk inventory occupied its working capital. Most of the product is imported, based on the total process time. Its inventory turnover improved little bit in FY 2021 and FY 2022 (10 months) from three months of FY 2020 due to significant sales growth during the year. Credit collection improved its receivable period as well as Cash conversion cycle. The company's management should work on the improvement of the liquidity position.

Cash-flow Coverage

FYE: December	**2022***	**2021**	**2020**	**2019**	**2018**
CFO (BDT in millions)	68.64	100.83	(267.15)	(193.63)	(145.26)
CFO Interest Coverage (times)	4.39	2.44	-	1.67	-
CFO Debt Coverage (times)	0.19	0.25	-	0.13	-
CFO Short-Term Debt Coverage (times)	0.19	0.25	-	0.13	-

*Data obtain form Audited Financial Statements of 2018-2021, *2022 unaudited 11 months data obtained from management report*

Within the last five years CFO became positive in FY 2021. CFO became positive as an effect of improved operation profit and inflow during the year. JSL was not capable of meeting its finance cost from its negative operational cash flow during the last four years. Positive CFO of the FY 2021 was able to meet the debt and improved the capacity of the interest coverage of the company. For the betterment of the company it should try to improve the situation of the CFO to meet current obligations.

Leverage & Capital Structure

FYE: December	2022*	2021	2020	2019	2018
Debt to Equity (times)	0.85	0.80	1.57	1.02	1.66
EBIT Interest coverage (times)	7.57	3.16	4.63	4.89	2.53
Debt to EBITDA (times)	2.20	1.72	4.39	2.20	2.55
Short-Term Debt to Equity (times)	0.85	0.80	1.57	1.02	1.66
Debt Coverage Ratio (times)	0.40	0.46	0.22	0.42	0.34
Total Liabilities to Total Assets (times)	0.52	0.56	0.64	0.56	0.65

*Data obtain form Audited Financial Statements of 2018-2021, *2022 unaudited 11 months data obtained from management report*

Debt equity position of JSL improved in the FY 2021 as its short term debt reduced by 33.20% from previous financial year, it also to be noted that its paid up capital increased to BDT 42.02 million in FY 2021 from BDT 0.50 million of FY 2020 and cumulative retained earnings increased by 12.76% after adding BDT 65.53 million net profit. Overall equity of FY 2021 helps to improve leverage position. In FY 2021, Interest coverage by the yearly operative profit stood at 3.37 times in spite of finance cost increased to BDT 41.39 million from BDT 17.70 million of FY 2020, due to better sales and supportive operational profit. Within ten months its debt position increased and overall profit margin decreased, which can be affected at the end of FY 2022 to its overall leverage position.

Bank Facilities & Credit History

Jalalabad Steel Limited is a client of Islami Bank Bangladesh Limited Bangshal Branch from 2008. Its total LC/Bills MPI/ Bai-Murabaha bank investment limit is BDT 400.00 million with BDT 110.00 million Murabaha TR. The bank renewed the existing working capital investment limit for one-year revolving basis as per sanction letter number as per sanction letter IBBL/ HO/ CID-1/2012/301 dated April 18, 2022.

Islami Bank Bangladesh Limited		BDT in Million		
Mode	**Total limit/ Amount**	**Outstanding Liability**		
		Oct 30, 22	**Dec 31, 21**	**Nov 30, 21**
Short Term / Working Capital investment				
LC/Bills/ Bai-Murabaha	290.00	71.21	75.23	-
MPI- Industrial		34.50	26.03	66.46
Murabaha-TR	110.00	137.99	108.10	105.66
Foreign LC at Sight		35.09	3.82	3.82
Total Short-Term Facilities	**400.00**	**278.79**	**213.18**	**175.94**
Short Term Investment Limit Utilized		**69.70%**		**95.51%**

The company has taken working capital investment to import/purchase raw materials and to trading GP, CI sheet, iron sheet. As on October 30, 2022 total principal outstanding liability was BDT 278.79million. Utilization of the investment limit is 69.70% reflecting flexibility of 30.30%. The company has received rebates several times for paying the installments on a regular basis. The company doesn't have any other loan facility other than IBBL.

Security & Collateral

As per above mentioned sanction letter from the bank it is considering the following security, L/C: 5% cash security on CFR value, MPI/ Bai-Murabaha: 15% cash security on landed cost, BG: 10% cash security on guaranteed amount but 100% in case to be issued in favor of customs authority. Primary securities of LC/ bills: L/C related documents, MPI/ Murabaha TR: on goods to be released against TR till disposal and deposit of sale proceeds towards adjustment of the related investment account with the branch, and MPI/ Murabaha: Pledge imported / purchased goods including prescribed cash security duly converted to goods security.

Collateral:

Below mentioned registered land, building, machinery and vehicles mortgage to the bank under the term "registered irrevocable power of attorney" in case of default in payment of bank's dues by the company as per section-12 of Artha Rin Adalat Ain-2003. JSL has provided group collateral of BDT 477.4 million to IBBL to avail financial facility. This group (Jalalabad Steel Building Ltd, Jalalabad Steel Ltd and Lucky Steel Corporation) collateral includes land with building, machinery of the factory and TDR. Land of 353.76 decimal with building has been provided as collateral. Market value of which is BDT 885.07 million. The Forced sale value of the land with building is BDT 733.26 million.

Registered List of Collateral: Jalalabad Steel Limited	(Amount BDT in millions)		
Particulars	**Area** (Decimal)	**MV**	**FSV**
Land with buildings at Hemayetpur, Savar, Dhaka	64	87.36	70.02
Land with factory buildings	109.50	160.51	128.41
Land under District Dhaka, Jamur Muchipara, Savar	211.05	211.01	149.85
Land under district Dhaka, SRO Savar, khatian no. CS- 166, 191SA-176.219.	27.50	22.00	17.60
Land with 4 - storied buildings at plot no. U/50, Noor Jahan Road, Mohammadpur, Dhaka.	2.88	14.88	11.90
Land at Jamur, Muchipara, Savar	72	43.20	34.56
Land at Savar, Dhaka	75	42.19	33.75
Land with 4 - storied buildings at plot no. U/51, Noor Jahan Road, Mohammadpur, Dhaka owned by Chairman	2.88	14.88	11.90
Estimated Project Structure (101200) of M/s. Jalalabad Steel Building Ltd.		117.50	117.50
TDR for 6.77 + 26.87 million duly discharged in bank's favor along with a letter of authority for encashment of the same.		33.64	36.64
Machinery of Jalalabad Steel Ltd. (WDV).			93.65
Machinery of Jalalabad Steel Ltd. (WDV).		33.85	30.47

Total (Area in Decimal/ BDT in Millions)	**353.76**	**885.07**	**733.26**

Bank also took commitment from "Jalalabad Steel Limited, with other bank formalities and instructions as per sanction letter, such as Personal Guarantee of all directors, Creation of 1st charge on the present and future assets (fixed and floating) including book debts of the project company, Post-dated cheques etc.

2.6 Operations Management and Information System Practices

Since Jalalabad Steel Ltd is a prominent steel manufacturing company in Dhaka, Bangladesh, they follow a number of prominent operation management practices. The company has implemented various operations management practices to ensure that it runs efficiently and effectively including the use of database or office management software in the organization, and practices in operations management, resource allocation, scheduling, and quality management. The company uses information systems to collect, store, process, and share data with stakeholders and clients. The information systems enable Jalalabad Steel Ltd to manage and track the entire production process, from raw material acquisition to the final product. The data collected through the information systems is used to analyze and improve the company's performance, identify areas that need improvement, and optimize operations to enhance efficiency and productivity. Jalalabad Steel Ltd also uses database and office management software to improve its operations management. The company's database contains information on suppliers, customers, inventory, and other critical data that is used to plan and manage operations. The office management software enables the company to manage administrative tasks such as scheduling, document management, and communication with stakeholders and clients. The company has also implemented quality management practices to ensure that its products meet the required standards. Jalalabad Steel Ltd has a team of quality control experts who test the products at various stages of the production process to ensure that they meet the required specifications. The company also maintains a continuous improvement program that identifies areas for improvement and implements measures to address any issues. In terms of scheduling, Jalalabad Steel Ltd uses various strategies to ensure that its operations run smoothly. The company has a production schedule that outlines the production plan for each day, week, or month. The production schedule is based on the demand for the company's products and the availability of raw materials. The company also uses just-in-time (JIT) scheduling, which enables it to produce products only when there is a demand for them,

minimizing waste and reducing costs. Jalalabad Steel Ltd is also mindful of resource allocation to maximize efficiency and productivity. The company has a team of experts who manage the allocation of resources such as raw materials, equipment, and personnel to ensure that they are used optimally. Additionally, the business adheres to lean manufacturing practices, which emphasize minimizing waste and maximizing value for the consumer. In conclusion, Jalalabad Steel Ltd has implemented various operations management practices to ensure that it operates efficiently and effectively. The company uses information systems, database, and office management software to collect, store, process, and share data with stakeholders and clients. It has also implemented quality management practices, scheduling strategies, and resource allocation techniques to optimize its operations. These practices have enabled the company to improve efficiency, reduce costs, and enhance customer satisfaction.

2.7 Industry and Competitive Analysis

Bangladeshi Steel Industry has been experiencing significant growth over the years, driven by increasing demand from various sectors such as construction, infrastructure, and automobile manufacturing. The country has several steel manufacturers, including Jalalabad Steel Ltd, which has made a name for itself as a major player in the sector. This report aims to conduct a detailed analysis of the steel industry in Bangladesh and investigate the competitiveness of Jalalabad Steel Ltd using Porter's Five Forces and SWOT analysis.

Bangladesh's steel market is extremely competitive, with both long-standing businesses and recent entrants vying for market dominance. The industry is characterized by high barriers to entry, such as high capital requirements, stringent regulations, and the need for specialized expertise. However, the growing demand for steel products in various sectors, coupled with government initiatives to promote the industry and infrastructure development, has created opportunities for growth and expansion.

SWOT Analysis:

Jalalabad Steel's internal strengths and weaknesses, as well as external opportunities and threats, can be determined using a SWOT analysis. The company's strategic planning and decision-making can benefit from this analysis.

Strengths:

Established brand: Jalalabad Steel Ltd has established itself as a reputable and reliable steel supplier in Bangladesh.

Skilled workforce: The company has a team of skilled workers and managers with experience in the steel industry.

Strong distribution network: Jalalabad Steel Ltd has a strong distribution network that allows it to efficiently distribute products to customers.

Large production capacity: The company has a large production capacity, which enables it to meet the demand for steel products in Bangladesh.

Access to raw materials: Bangladesh has access to high-quality raw materials, such as iron ore, which provides Jalalabad Steel Ltd with a competitive advantage.

Imitable strengths:
Technology: Jalalabad Steel Ltd uses advanced technology in its production process, which helps to improve efficiency and reduce costs. However, this technology is not unique to the company and can be imitated by competitors.
Skilled workforce: The company has a skilled workforce that has been trained in the latest production techniques. However, this strength is imitable, as competitors can also train their workforce in the same techniques.

Distinctive strengths:
Customer service: Jalalabad Steel Ltd has a reputation for providing excellent customer service. This strength is difficult to imitate, as it is based on the company's culture and values.
Corporate social responsibility: The company is committed to being a responsible corporate citizen and is involved in various social initiatives, such as education, healthcare, and disaster relief. This is a distinctive strength that sets Jalalabad Steel Ltd apart from its competitors.

Weaknesses:
Domestic market dependence: Due to its reliance on the home market, Jalalabad Steel Ltd. is extremely susceptible to changes in the state of the regional economy.
Limited product offering: The company's limited offering may make it more difficult for it to satisfy the various client wants.

Limited technological capabilities: Jalalabad Steel's technological capabilities are limited, which may limit its ability to compete with companies that have invested in advanced technologies.
Limited financial resources: The company's financial resources are limited, which may make it difficult to invest in new technologies or expand operations.

Opportunities:
Infrastructure development: The government of Bangladesh is investing heavily in infrastructure development, which presents an opportunity for Jalalabad Steel Ltd to supply steel products for these projects.
Increasing demand: The demand for steel products is increasing in Bangladesh, which presents an opportunity for Jalalabad Steel Ltd to expand its product line and increase production capacity.
Export potential: Bangladesh's strategic location provides easy access to emerging markets with high demand for steel products, which presents an opportunity for Jalalabad Steel Ltd to expand its export market.
Diversification: Jalalabad Steel Ltd can explore opportunities to diversify its product line and enter new markets.
Technology adoption: Jalalabad Steel Ltd can invest in modern technologies to improve production efficiency, reduce costs, and increase product quality.
Joint ventures: Joint ventures with international steel companies can provide Jalalabad Steel Ltd with access to new markets, technologies, and expertise.
Branding: Building a strong brand can help Jalalabad Steel Ltd differentiate itself from competitors and position itself as a high-quality and reliable steel supplier.

Threats:
Intense competition: The steel industry in Bangladesh is highly competitive, which may put pressure on Jalalabad Steel's market position.
Political instability: Political instability in Bangladesh may create uncertainty and disrupt business operations.
Economic downturn: A downturn in the local or global economy may reduce demand for steel products and negatively impact Jalalabad Steel's financial performance.
Regulatory changes: Changes in government regulations or policies may impact the steel industry and affect Jalalabad Steel's operations.

Porter's Five Forces Analysis:

Threat of New Entrants:

The threat posed by new competitors in Bangladesh's steel sector is mild. The industry is capital-intensive, with significant barriers to entry such as high capital requirements, stringent regulations, and the need for specialized expertise. However, the growing demand for steel products and government initiatives to promote the industry and infrastructure development have attracted new players.

Bargaining Power of Suppliers:

In Bangladesh's steel sector, suppliers have a moderate amount of negotiating influence. The sector heavily depends on raw materials from both domestic and foreign suppliers, including iron ore, coal, and scrap metal. However, the availability of these raw materials is subject to fluctuations in global markets, which can impact prices and supply.

Bargaining Power of Buyers:

In Bangladesh's steel sector, buyers have significant negotiating leverage. The market is fiercely competitive, with a number of long-standing businesses and recent newcomers vying for market dominance. Buyers have a wide range of choices and can easily switch suppliers based on factors such as price, quality, and delivery times.

Threat of Substitutes:

Bangladesh's steel sector faces a serious challenge from replacement products. Steel products can be substituted with other materials such as aluminum, plastic, and composite materials in various applications. Additionally, the use of recycled steel and scrap metal as a substitute for raw materials can impact demand for primary steel products.

Competitive Rivalry:

Bangladesh's steel sector faces intense rivalry in the marketplace. A number of well-known businesses and recent newcomers are vying for market share in this sector. Players compete on the basis of variables like price, quality, delivery timeframes, and product selection.

Jalalabad Steel Ltd operates in a highly competitive steel industry in Bangladesh, but it has established itself as a strong player in the market with a loyal customer base and diversified

product portfolio. The company's use of advanced technology, skilled workforce, and commitment to customer service and corporate social responsibility are its key strengths. However, the company faces challenges from intense competition, fluctuations in raw material prices, and dependence on government policies. By leveraging its strengths and addressing these challenges, Jalalabad Steel Ltd can continue to grow and maintain its competitive position in the industry.

2.8 Summary and Conclusions

Jalalabad Steel Ltd is a well-established steel manufacturing company in Bangladesh, with a significant presence in the industry. Through a comprehensive analysis of its competitive environment using Porter's Five Forces framework, it is clear that the company faces significant competition from both domestic and international players. However, the company's strengths, including its vertical integration, cost-effective operations, and strategic location, have enabled it to maintain a competitive edge.

The SWOT analysis revealed that Jalalabad Steel Ltd has several strengths, including a strong brand reputation, efficient operations, and an experienced management team. The company's weaknesses include the lack of diversification in its product offerings and the dependence on a single supplier for raw materials. However, the company has several opportunities to further expand its business, including growing demand for steel in the construction and infrastructure sectors, expanding its product line, and investing in advanced technology.

Based on the findings of this report, Jalalabad Steel Ltd should focus on leveraging its strengths and opportunities to remain competitive in the steel industry. The company can achieve this by investing in research and development to improve its product quality and expand its product offerings. Additionally, Jalalabad Steel Ltd can explore strategic partnerships and collaborations to reduce its dependence on a single supplier and expand its customer base.

Overall, Jalalabad Steel Ltd is well-positioned to capitalize on the growth opportunities in the steel industry in Bangladesh. With its strong brand reputation, efficient operations, and strategic location, the company has the potential to maintain its position as a leading player in the industry. However, it must remain vigilant of its competitive environment and continue to adapt and innovate to remain ahead of the curve.

2.9 Recommendations/Implications

Here are some potential recommendations for Jalalabad Steel Ltd:

Infrastructure Development: Bangladesh has been investing heavily in infrastructure development, including roads, bridges, and buildings. This presents a great opportunity for Jalalabad Steel Ltd to supply steel products for these projects.

Increasing Demand: With a growing population and economy, the demand for steel products is increasing in Bangladesh. This presents an opportunity for Jalalabad Steel Ltd to expand its product line and increase production capacity to meet this demand.

Export Potential: Bangladesh has a strategic location that provides easy access to both India and Southeast Asia, which are emerging markets with high demand for steel products. Jalalabad Steel Ltd can take advantage of this opportunity by expanding its export market.

Diversification: Jalalabad Steel Ltd can explore opportunities to diversify its product line and enter new markets. For instance, the company can explore opportunities to produce specialized steel products for the construction of oil rigs and ships.

Technology Adoption: Technology is changing the steel industry, and companies that embrace new technologies will have a competitive advantage. Jalalabad Steel Ltd can invest in modern technologies to improve production efficiency, reduce costs, and increase product quality.

Government Incentives: The government of Bangladesh provides various incentives to attract investment in the steel industry. Jalalabad Steel Ltd can take advantage of these incentives to expand its operations and improve its competitive position.

Green Initiatives: There is growing concern about the environmental impact of steel production. Jalalabad Steel Ltd can seize the opportunity to differentiate itself from competitors by adopting green initiatives such as using renewable energy sources, reducing carbon emissions, and implementing sustainable production practices.

Joint Ventures: Joint ventures with international steel companies can provide Jalalabad Steel Ltd with access to new markets, technologies, and expertise. Such partnerships can also lead to increased investment and a wider customer base.

Product Innovation: Innovation is essential for companies looking to stay competitive in the steel industry. Jalalabad Steel Ltd can explore opportunities to develop new and innovative steel products that meet the evolving needs of customers.

Strategic Partnerships: Strategic partnerships with suppliers, distributors, and other stakeholders can help Jalalabad Steel Ltd improve its supply chain and distribution network. This can lead to increased efficiency, reduced costs, and improved customer satisfaction.

Branding: Building a strong brand is essential for companies looking to differentiate themselves from competitors. Jalalabad Steel Ltd can invest in branding initiatives to enhance its reputation and position itself as a high-quality and reliable steel supplier.

Human Resource Development: The steel industry is highly dependent on skilled workers. Jalalabad Steel Ltd can invest in human resource development initiatives to attract, retain, and develop talented employees. This can improve productivity, reduce employee turnover, and enhance the company's competitive position.

Financial Management: Effective financial management is critical for companies looking to maintain a strong competitive position. Jalalabad Steel Ltd can explore opportunities to improve financial management practices, including budgeting, cost control, and investment analysis.

Vertical Integration: Vertical integration involves controlling multiple stages of the production process, from raw materials to finished products. Jalalabad Steel Ltd can explore opportunities to vertically integrate its operations to reduce costs, improve quality, and increase efficiency.

Strategic Location: Jalalabad Steel's location in Bangladesh provides access to a large market of customers and suppliers. The company can take advantage of its strategic location by developing close relationships with suppliers and customers, and by providing timely and reliable service.

Chapter 3
Project Part
3.1 Introduction

3.1.1 Background

Jalalabad Steel Limited was established in 2002 as a privately-owned company with the aim of producing colored CI sheets for the potential market. In 2003, the company became a pioneer in Bangladesh by setting up a Color Coating Line to manufacture pre-painted color steel sheets. Today, JSL is a leading market player, offering 20 years of color guarantee on its colored CI sheets. Paid-up capital of the business has grown from BDT 0.50 million at the time of incorporation to BDT 42.02 million presently. Mr. Al-Haj Mohammed Osman Ali founded the company with six directors, but it currently operates with four directors who have equal shares. These directors also hold management positions to ensure efficient monitoring and control of operations. The company employs skilled staff at every level of work. More than 100 dealers

in over 30 districts of the country receive sales support from JSL's sister concern, Lucky Steel Limited. Additionally, JSL supplies pre-engineering steel building materials to another sister concern, Jalalabad Steel Building Ltd.

Literature Review

The annual corrugated sheet market in Bangladesh has witnessed stable growth because of the improvement in purchasing power of the lower income groups, who are the core customer for the product. More low-income people in Bangladesh can afford corrugated sheets for their houses because of their rising incomes. Corrugated sheets are easy to move and install, which suits the poor people's needs. However, corrugated sheet production is very costly and only five companies are doing it. Bangladesh should produce more steel to meet its own demand and compete with China and India, who are also increasing their steel output. Japan became a developed country partly because of its steel sufficiency. Corrugated tin is the main product of corrugated sheet and its price varies depending on the economic situation of different regions. Most of its buyers are rural farmers who are sensitive to price changes. The government should have a clear steel policy and adjust the duty structure according to the international and regional market prices. Corrugated iron and steel are common building materials that are mostly used for industrial purposes in North America, but some modern architects have experimented with them. They were invented in 1828 and were used in the first prefabricated buildings that were shipped from Britain to other parts of the world, but they became less popular as local building industries grew.

Corrugated steel is a modern and tough material that is used for external cladding on many buildings, such as homes, libraries, and schools. It is made by rolling hot-dipped galvanized steel into sheets with a linear pattern. Corrugated steel is favored for its lightweight and easy transportability, as well as its durability and aesthetic appeal. CI buildings only need simple maintenance to last long, but they should be checked regularly if they are not used often. Corrugated metal sheet roofing has many advantages, such as being weatherproof, fire resistant, and safe from lightning strikes. It is also eco-friendly and recyclable, and can help lower your heating and cooling bills by reflecting some sunlight. Corrugated metal roofing is also light and easy to install, which makes it cheap and simple to use. Corrugated roofing is a durable and long-lasting material that can save homeowners money and hassle in the long run, despite its high initial cost.

Jalalabad Steel Limited is the first company in Bangladesh to have a Color Coating Line for producing pre-painted color steel sheets. This line has a capacity of 34,000 tons per annum and uses the most advanced two coat two bake systems and Japanese technologies brand new coil coating equipment to meet exact quality specifications with maximum cost efficiency. In addition to color coating, the company also produces trapezoidal roofing and walling profiles, corrugated sheets, plain sheets, and slit strips.

Jalalabad Steel Limited also works on a project called Jalalabad Steel Building Limited, which is focused on creating heavy structural steel elements and pre-engineered steel buildings for significant building projects. The company offers cutting-edge design and manufacturing capabilities to effectively complete large-scale or highly technical projects such sports centers, industrial complexes, conference centers, multi-story buildings, bridge, and airport facilities. They offer specialized and added-value building solutions, such as Pre-Engineered metal building systems, Mezzanine Systems, Crane Systems, Residential solutions, and Architectural building systems, for a variety of building requirements. The company's all-inclusive solution approach, which incorporates value engineering, design, manufacture, project management, transportation, on-site consultancy, construction services, and local support, is created to address particular demands.

Resistance to Corrosion

The Corrugated Iron (CI) corrosivity zones can be identified by using the corrosion rate of low carbon steel or zinc that complies with the ISO 9223 standard, which categorizes the corrosivity of atmospheres. Low carbon steel and zinc corrosion rates are correlated by the ISO standard, and ISO 12944-2 and AS/NZS 2312 define the categories and give examples of typical settings. For instance, in an environment where low carbon steel corrodes at a rate of 50 microns per year, the ISO standard assumes that zinc will corrode at 2.1 microns per year. However, research on CI has shown that this correlation is often not valid, particularly in Australia, where zinc corrosion rates are significantly higher than those estimated from steel corrosion rates using the ISO categories. Nonetheless, the ISO standard definitions are widely used and convenient, and they serve as a useful basis for relating zinc corrosivity to corrosivity categories.

A study conducted many years ago and quoted in corrosion textbooks found that the method of applying a zinc coating, whether by electroplating, sherardizing, hot dip galvanizing, or

metal spray, did not significantly affect coating life. In a given environment, the thickness of the coating was the critical factor, not the application method. It should be noted that this research was conducted in a severe industrial environment, and the application method may be significant in other environments. Nevertheless, the general consensus is that the application method does not impact coating life in Corrugated Iron, as stated according to the Sixth Report issued by the Corrosion Committee, Special Report No. 66, which was released in 1959 by the London-based Iron and Steel Institute.

H1: Higher the resistance to corrosion, Higher the intention of buying C.I sheets.

Durability

The recommended maintenance level for Corrugated Iron paint coating systems is when the coating breakdown reaches Ri 3, which equates to about 1% breakdown according to the International Organization for Standardization's (ISO) 12944. However, when it comes to the single-coat solvent-borne inorganic zinc (system A) in GI/CI, there is a wide range of figures. Inorganic zinc silicate provides "significantly" more longevity than hot dip galvanizing of the same thickness, in line with the research published in Corrosion Prevention by Protective Coatings by G Munger. Another recent study of bridges in Melbourne coated with inorganic zinc suggested a durability of at least 25 years for such a coating at the aggressive end of C2 or benign end of C3, provided that the film thickness was maintained above 75 microns, as reported in Corrosion & Prevention (2000) by R A. Francis and A Sokolich.

H2: Higher the durability, Higher the intention of buying C.I sheets

Ease of prefabricated building

According to Proofer and Farr (2013), the usage of CI technology in the 20th century is a prime example of how technology has impacted design and innovation. According to Hashemi (2013), the two world wars had a profound impact on prefabrication in Britain. Hashemi (2013) also pointed out that industrialization was condemned by society for prioritizing quantity over quality, which had a negative influence on socio-economic conditions. The author concentrates on manufacturing facilities and the key factors that led to the switch from conventional to premade construction methods, offering a useful history and system building's impacts.

The 1851 Morewood and Rogers catalog featured a variety of prefabricated buildings, including cottages, demonstrating the essential role corrugated iron played in prefabricated housing. According to Thomson (2006), prefabricated structures were delivered to California and Australia between 1849 and 1851 to accommodate persons taking part in the gold rush. Furthermore, Thomson and Banfill (2005) discussed how the method of attaching corrugated sheets to buildings received a patent in 1829.

H3: Higher the ease of prefabrication in building, higher the intention of buying C.I sheets.

Fire resistance

Due to its thinner tubing wall, corrugated stainless steel tubing (CSST) is being employed as a replacement for traditional black iron gas piping for more than 20 years. However, lightning-related activity that reaches a structure and causes wall perforation or possibly starts a fire might cause damage to CSST. Haslam, Galler, and Eagar (2016) suggested enhancing fire resistance against CSST to address this issue. A two-story, four-bay (9.8m 12.2m in plan), composite steel-framed building was subjected to a significant structural fire test by Jeanes (1982) in order to evaluate overall performance and certify the FASBUS II software modeling program for structural reaction to fire. The operating temperature of metal induced by an arc depends on the quantity of energy that is transferred, time range, heat conductivity within the solid, and the depth of the solid (Uman, 2010). Intriguingly, Hagenguth (1949) showed that the dimension of lightning-induced cracks in steel corresponds to the charge passed on, with smaller penetrations that require fewer electrons for their formation, thereby improving fire protection. Having a dielectric jacket surrounding the corrugated irons also reduces the charge needed to melt a hole.

H4: higher the fire resistance, higher the intention of buying C.I sheets.

Light weightiness

According to Evans et al. (2001) and Wadley et al. (2003), corrugated cellular irons are lightweight, highly porous materials that typically comprise 20% or less metal by volume. In order to create lightweight sandwich panels with features like energy absorption during impacts, reduced thermal transport between sandwich panel faces, and acoustic dampening,

hexagonal honeycombs are frequently employed in corrugated irons (Zhang & Ashby, 1992). Additionally, Bitzer's (1997) work on generating unidirectional flows mentions that corrugated metals are a sort of lightweight material.

H5: Higher the light-weightiness, higher the intention of buying C.I sheets.

Strength

According to "Corrosion Engineering" by M.G. Fontana, cast iron can be used in applications involving aggressive environments instead of steel forgings, steel castings, and gray iron castings because of its excellent tensile strength and quantifiable lengthening in the as-cast condition, as well as the enhancement of its characteristics through heat treatment and alloying. The erosion-corrosion wear parameters and process of martensitic iron casting with various alloying compositions were examined by Zhou et al. (2007) in quartzite fluids with variable pH values. They discovered that increasing the amount of metals like copper, nickel, and chromium as well as adjusting the pH of the fluid and the erosion angle all helped to increase the resistance to wear of martensitic cast iron. Corrugated iron and ductile cast iron alloyed with vanadium were tested for corrosion and strength in nitric acid at 30°C by Aigbodion et al. in 2007. They noticed that the resistance to corrosion and strength of ductile cast iron rose when vanadium was added, up to a maximum amount of 0.25% V.

H6: Higher the strength, higher the intention of buying C.I sheets.

Ductility

Ductile iron (DI) is recognized for its exceptional blend of tensile strength, ductility, toughness, and wear resistance. Corrugated iron, on the other hand, is incredibly ductile, highly tough, and possesses excellent wear resistance properties, all while being more cost-effective than steel casting. Industrial items including gears, crankshafts, and cylinder heads are made using CIs because of their superior features and cheaper production costs. A bainitic matrix can be produced in DI in two different ways: (i) by alloying with elements like Ni, Mo, and Cr in the as-cast form; and (ii) by using a particular heat treatment called austempering, which is found in contemporary CI. These findings have been documented in various research papers, including Materials and Design 5 (1992) by Cast Metals Development Ltd. and Wear 138

(1990) by L. Ping, Bahadur, and D. Verhoeven. Similarly, the Indian Foundry Journal (1992) has published research by S. Muthukumarasamy, A. J. S. Sabu, and S. Seshah, which indicates that CI is gaining traction in the industry due to its excellent properties and low production cost.

H7: Higher the ductility, Higher the intention of buying C.I sheets.

Versatile application

Akoy et al. (2004) state that CI sheet is a highly suitable and widely used material for various engineering applications due to its excellent mechanical properties, including strength, toughness, and ductility. In addition, CI sheet is easily produced, has good formability, weldability, and paint ability, and is available at a low cost. Furthermore, it is ferromagnetic, recyclable, and has other positive properties. However, it is prone to corrosion in moist environments and oxidation at high temperatures, so some form of protection is necessary for successful use, as noted by Dafydd et al. (2005).

H8: higher the versatility, higher the intention of buying C.I sheets.

Resistance against lightning

A CSST-based distribution system is used by about 6 million houses with gas service, or roughly 10% of all fuel-serviced homes. This puts a significant amount of homes and residents in danger. About 100 lightning-related fires are thought to occur annually, according to corrugated iron producers. The number of complaints toward CI manufacturers has dramatically increased as a result of documented CI failures that resulted in major monetary losses and fatalities. This has sparked ongoing discussions over the efficacy of CI bonding as a defense against electrical damage. This issue has prompted manufacturers to introduce design alternatives.

According to research, heavier steel is more immune to being penetrated by lightning due to the greater mass and arc root fluctuation brought on by self-magneto hydrodynamic forces. Impacts of 40 and 90 Coulombs failed to penetrate metal densities of 1.27 mm (stainless steel) and 2.03 mm (copper), according to experimental data collected from direct hits on metal

surfaces. However, studies done in the 1940s shown that as metal thickness is decreased, the resistance to lightning perforation drastically declines. An electricity discharge of 0.2 or fewer Coulombs may easily puncture stainless steel that has a width of 0.25 mm, exactly the same depth as CI. Since the majority of strikes from lightning are more powerful than 5 Coulombs, positive as well as negative lightning strikes can result in a discharge strong enough to pierce CI.

H9: Higher the resistance against lightning, higher the intention of buying C.I sheets.

Scratch resistance

The quality of a coating can be significantly determined by the strength of the bond between the coating and the substrate, claim numerous studies including Ferreira et al. (1999), Sazou (2001), and Tan and Blackwood (2003). The coating might peel or fall off if the binding is poor, which would result in an early failure. The need for creating top-notch coverings for corrugated iron is critical given the complicated and fluctuating corrosive conditions. A metric ton of metal corrodes per minute worldwide, which is a common problem. Coatings that can withstand corrosive and abrasive environments are very successful at preventing corrosion in CI (Guillaumin and Landolt, 2002; Liu et al., 2005; Chaliampalias et al., 2008).

The adherence of Tin coating in CI was examined by Valli et al. (1985) utilizing their scratch test technique. Park and Kwon (1997) proposed utilizing an energy technique to evaluate the strength of adhesion from critical loads in scratch resistance. Additionally, the effect of the indenter diameter on the critical load in scratch resistance tests was examined by Randall et al. (2001) and Ichimura and Ishii (2003). These research discovered that under specified parameters, including the identical film thickness, film hardness, interface shape, and pressure head, critical loads could assess the interface bonding strength between the film and substrate.

H10: Higher the scratch resistance, higher the intention of buying C.I sheets.

The hypothesis mentioned above was used to create and derive the association between the 10 characteristics and the purchasing behavior of CI sheets. The construct of buying habits is the dependent variable, while the 10 influencing elements are independent variables. This study will concentrate on how each independent component relates to purchasing behavior.

3.1.2 Objective(s)

Broad Objective: -

The study's goal is to learn more about the “Factors that affect the buying behavior of color CI sheets of Jalalabad Steels Limited”.

Specific Objectives: -

To find out the resistance to corrosion, durability, ease of prefabricated building, fire resistance, light weightiness, strength, ductility, versatility, resistance against lightning and scratch resistance regarding buying behavior of color corrugated sheets.

3.1.3 Significance

As corrugated iron sheets are a sophisticated form of iron with many usages, in recent days many Bangladeshi iron sheets brands are coming forward and making revolutionary changes in the steel industry. Like PHP Arabian horse CI sheets, Cow brand, Rani brand CI sheets and so on. But now people are fashion conscious and trendy so they look for colored CI sheets. Jalalabad steels Limited is a flagship company of producing color CI sheets and they are pioneers of making color CI sheets in this country. But competition in the steel industry is intense and other competitors are constantly and progressively producing color CI sheets resulting in people highly interested to buy those color CI sheets. I believe that my research on this subject will assist them in building an effective brand and highlighting the crucial aspects of consumer purchasing decisions for colored CI sheets.

3.2 Methodology

Description of data

Over the course of three weeks, the study involved many Dhaka clients. The current research has utilized both primary and secondary data. Primary data have been gathered through the use of survey techniques. On clients of various steel brand names, a survey employing non-probability quota sampling methods was undertaken. Respondents used CI sheets from a variety of brands, including Cow, PhP Arabian Horse, and Rani. I listed several places where

respondents provided feedback on the significance of color CI sheet purchasing patterns and the usage of enhanced regression testing to draw conclusions from primary data.

Sample Size and Data Collection

There were 100 responders in the entire sample. Adults (defined as those 20 years of age and older) who used at least a few branded CI sheets were required to fill out the study. Non-probability quota sampling was used to begin the sample process with respondents in the 5 locations of Dhanmondi, Nazirabazar, Bangshal, Bakshibazar, Kamrangirchor, and Azimpur. The respondents ultimately completed out 100 full surveys. The secondary data were gathered from company websites, brochures, personnel information, articles, and journals. Data regression was the method used to analyze the data.

3.3 Findings and Analysis

The assumptions behind the use of multiple regression were investigated prior to doing the regression analysis. For determining whether there is a strong or weak link between the independent and dependent variable, many researchers employ Cohen's criterion (Cohen, 1983). The link in this study was accurately classified as strong using Cohen's criteria for effect size (less than.01 = trivial;.01 up to 0.30 = weak;.30 up to.50 = moderately strong;.50 or above = strong). The majority of the variance in the dependent variable is accounted for by a model with a high regression sum of squares. The relative significance of every parameter in the model can be ascertained with the aid of the t statistics. The coefficient is deemed significant if its statistically significant value is low (less than, say, 0.05).

A multiple linear regression analysis was performed to analyze the research issue and see whether the independent factors could foresee the dependent variable (the criterion). In a multiple linear regression, the influence of a number of ordinal, interval/ratio, or dichotomous predictor factors on a single interval/ratio criterion variable is evaluated. The dependent variable in this case is dependent variable, and the independent variables in this case are independent variables 1, independent variable 2 and independent variable 3. The main effects model's regression equation was as follows: Y is the estimated dependent variable; b are the regression coefficients; x is each independent variable; and c are constant (which includes the error term).

Regression equation is = C + b1(scratch resistance) + b2(Durability) + b3(Light Weightiness) + b4 (Resistance to Corrosion) + b5 (Ductility) + b6 (Fire Resistance) + b7(Strength) + b8 (Resistance Against Lightning) + b9(Versatility) + b10 (Ease of Pre-Building).

Table 1 : Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.791	.625	.588	.490

Dependent Variable: Buying behavior of Color CI sheets

Predictors: (Constant), Scratch resistance, Durability, Light weightiness, Resistance to corrosion, Ductility, Fire resistance, Strength, Resistance against lightning, Versatility, Ease of Prefabricated Building

From the model summary, it can be seen that the R value is.791. As a result, the R value (.791) for the general factors influencing customers' buying behavior, such as scratch resistance, durability, light weight, resistance to corrosion, ductility, fire resistance, strength, resistance against lightning, versatility, and ease of prefabricated buildings, suggested that these ten independent variables have a significant impact on consumers' decisions to purchase color CI sheets. The table also shows that the coefficient of determination, or R square (R2) value, is.625, indicating that 62.5% of the variation in the dependent variable is impacted by the independent variables, demonstrating the regression's potent explanatory ability.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.961	.621		6.380	.000
Scratch resistance	.041	.047	.042	.867	.386
Durability	.018	.050	.018	.357	.721
Light weightiness	.065	.051	.065	1.289	.198
Resistance to corrosion	.159	.050	.159	3.196	**.002**
Ductility	-.105	.053	-.105	-1.981	.078
Fire resistance	.083	.050	.083	1.668	.096
Strength	-.094	.034	-.138	-2.796	**.005**
Resistance against lightening	-.050	.049	-.052	-1.035	.301
Versatility	-.083	.039	-.107	-2.146	**.033**
Ease of Prefabricated building	.085	.037	.115	2.303	.062

When the other variables that are independent are maintained constant, unstandardized coefficients show the extent to which the dependent variable fluctuates with an independent variable. The beta coefficients demonstrated how and to what extent influencing factors, such as scratch resistance, durability, light weight, corrosion resistance, ductility, fire resistance, strength, resistance against lightning, versatility, and ease of prefabricated building, affect the customer's decision to purchase color CI sheets.

Beta values of.159 for resistance to corrosion,.138 for strength, and.107 for versatility are found here. The regression model is [3.961+.041+.018+.065+.159-.105+.083 -094-.050 -083+.085] for purchasing behavior of color CI sheets.

Therefore, resistance to corrosion, strength and versatility helps to buy the color CI sheets for customers as they consider these factors while they are using CI sheets. Based on the sample, resistance to corrosion, strength and versatility has the greatest effect while they choose CI sheets. Color coated sheets always come with extra protection against corrosion. While customers are buying CI sheets they emphasize strength as well. Stronger the sheets are, more user friendly and long lasting they are. Another factor is versatility meaning there are various usages of CI sheets making them user friendly and gives customers a highly effective outcome.

3.4 Summary and Conclusions

In summary, there are several factors that influence the buying behavior of customers towards colored CI sheets in Bangladesh, and they are progressive and positive. Customers look for strong, versatile, and corrosion-resistant CI sheets, as well as other factors like durability, ductility, and resistance to lightning. Color CI sheets are also attractive and add aesthetic charm to society, making them popular among customers. Manufacturers should focus on these factors to encourage more people to buy CI sheets, which will lead to a flourishing economy. Local producers can produce sufficient amounts of CI sheets and export the surplus portion worldwide, which can create employment opportunities in the country. The steel industry is rapidly progressing and has a bright future in our country, and the government should play a helpful role in maximizing profits for entrepreneurs and contributing to our national economy.

3.5 Recommendations/Implications

The study has identified three major findings that are important in determining the buying behavior of color CI sheets. These include resistance to corrosion, strength, and versatility. Although these three factors have significant value, the other independent variables should also be considered as they contribute to positive outcomes in buying behavior. Therefore, customers should also consider other factors when choosing color CI sheets.

It is highly recommended that customers look for CI sheets that are resistant to corrosion. This is important as it will reduce potential headaches that may arise from corrosion. In addition, the strength of the CI sheets is also an important consideration. Stronger sheets are less vulnerable to rot and corrosion. Moreover, versatility is also a key factor to consider. Customers nowadays look for products that have multiple uses. Therefore, CI sheets should be produced in a way that ensures versatility.

References

1. Acosta, C.A., Salvarezza, R.C., Videla, H.A. and Arviya, A.J. (1985), "The pitting of mild steel in phosphate-borate solutions in the presence of sodium sulfate", Corrosion Science, Vol. 25, p. 291

2. Akoy et al., 2004 Dafydd et al., 2005 Kumar, 2002 Steels Science p 246

3. American Iron and Steel Institute (2001), Annual Statistical Report 2000, American Iron and Steel Institute, Washington, DC

4. An Investigation of the Erosion-Corrosion Characteristics of Ductile Cast Iron, Mater. Design, 2007,28, p 260–265

5. Ashasi-Sorkhabi, H. and Rafizadeh, S.H. (2004), "Effect of coating time and heat treatment on structures and corrosion characteristics of electroless Ni-P alloy deposit", Surface and Coatings Technology, Vol. 176, p. 318.

6. Belahcen et al., 2014; Cullity and Graham, 2008; Fujisaki et al., 2004; Skomski, 2008.

7. Belahcen, A., Singh, D., Rasilo, P., Martin, F., Ghalamestani, S. and Vandelvelde, L. (2014), "Anisotropic and strain-dependent model of magnetostriction in electrical steel sheets", Conference on Electromagnetic Field Computation – CEFC, Annecy.

8. Bernhard, E. Maura, C. Mariano Andrea, S. and Antonella, R. (2008), "Electroless deposited Ni-P alloys: corrosion resistance mechanism", Journal of Applied Electrochemistry, Vol. 38, p. 1053.

9. Bitzer, T. 1997 Honeycomb technology, London: Chapman and Hall

10. C G Munger, Corrosion Prevention by Protective Coatings, NACE, Houston, (1984)

11. Cast Metals Development Ltd., Materials and Design 5 (1992) 285, (Butterworth Heinemann Ltd.).

12. Cast Metals Development Ltd., Materials and Design 5 (1992) 285, (Butterworth Heinemann Ltd.).

13. Chikazumi, S. (1997), Physics of Ferromagnetism, Oxford University Press 14. Cleveland Society for Coatings Technology Technical Committee (1994), Fujiwara and Tahara (1997a, b) and Ting et al. (2002, 2003),

15. Cleveland Society for Coatings Technology Technical Committee (1996), “Correlation of accelerated exposure testing and exterior exposure sites. Part II: one-year results”, Journal of Coatings Technology, Vol. 68 No. 858, pp. 47-61

16. Evans, A. G Hutchinson, J.W & Ashby, M.F 1999 Multifunctional metals

17. Ferreira et al., 1999; Sazou, 2001; Tan and Blackwood,2003

18. Francis and A Sokolik, Corrosion & Prevention 2000, Paper 071, Auckland, New Zealand, (19-22 November, 2000

19. Fujiwara, H. and Miyake, M. (2003), “Quantitative analysis on deterioration and remaining life steel bridge painting based on field data”, Journal of Structural Mechanics and Earthquake Engineering, Vol.

20. 2, pp. 149s-62s. 20. Fujiwara, H. and Tahara, Y. (1997b), “Research on the correlativity of field exposure test of painting test specimen with corrosion test for steel bridge painting”, Journal of Structural Mechanics and Earthquake Engineering, Nos 570/I-40, pp. 129-40

21. G.A. King and J.R. Duncan, Corrosion and Materials, Vol. 23 (1), 8 – 21, (Feb 1998).

22. Guillaumin and Landolt, 2002; Liu et al., 2005; Chaliampalias et al., 2008

23. Hagenguth JM (1949) Lightning stroke damage to aircraft. AIEE Trans 68:1036–1046

24. Hashimoto, M. and Tanaka, T. (2002), “Development of cold rolling mill rolls of high-speed steel type by using continuous pouring process for cladding”, ISIJ International, Vol. 42 No. 9, pp. 982-989.

25. Haslam B, Galler D, Eagar TW (2016) Fire safety of grounded corrugating stainless steel tubing in a structure energized by lightning. Fire Technol

26. Haslam B, Galler D, Eagar TW (2016) Fire safety of grounded corrugating stainless steel tubing in a structure energized by lightning. Fire Technol 52:581–606

27. Iron and Steel Institute, Sixth Report of the Corrosion Committee, Special report No. 66, London, 1959

28. ISO 12944, Paints and varnishes – Corrosion protection of steel structures by protective paint systems, International Organization for Standardization, (1998). 29. ISO 9223, Corrosion of metals and alloys – Corrosivity of atmospheres – Classification, International Organization for Standardization, (1992).

30. Japanese Standards Association, 1992

31. Japanese Standards Association, 1999

32. Jeanes D: Predicting fire endurance of steel structures. National ASCE Convention, Las Vegas; 1982:82–033. April 26–30. Preprint pgs

33. L. PING, BAHADUR and D. VERHOEVEN,Wear 138 (1990)

34. L. PING, BAHADUR and D. VERHOEVEN,Wear 138 (1990)

35. Lenard, J. (2004), "The effect of roll roughness on the rolling parameters during cold rolling of an aluminum alloy",Journal of Materials Processing Technology, Vol. 152 No. 2,

36. M. A. Uman, Lighting Protection at the YuccaMountain Waste Storage Facility, 2008

37. M.G. Fontana, Corrosion Engineering, 3rd ed., McGraw-Hill, NY, 1986Y. Zhou, Z. Lu, and M. Zhan,

38. Metal Research Investigation Committee (2001), "Estates of Purchasing Amount of Thin Steel Sheets for Important Automakers in 2000", Weekly of Iron and Steel Research, No. 39, pp. 3-12.

39. Néel, L. (1944), "Les lois de l'aimantation et de la subdivision en domaines élémentaires d'un monocristal de fer", J. Phys. et Radium, Vol. 5 No. 11, pp. 241-251.

40. S. MUTHUKUMARASAMY, A. J. S. SABU andS. SESHAH, Indian Foundry Journal (1992) 23

41. S. MUTHUKUMARASAMY, A. J. S. SABU and S. SESHAH, Indian Foundry Journal (1992) 23.

42. Saito, M. and Moriya, S. (2001), "Research on accelerated exposure test and correlativity with field exposure test", Bouseikannri, No. 11, pp. 395-401

43. Soete de, D. and Pans, D. (1997), "EBT technology and its applications", Iron a. Steel Engineer, PA, pp. 36-40. Utsch, M. and Vinke, P. (2005), "EDT: roll texturing technology as a base of modern surfaces in automotive cold mill flat products", Iron & Steel Technology, PA, pp. 50-55.

44. V.S. Aigbodion, O.Y. Mohammed, S.I. Yakubu, and J.O. Agunsoye,Corrosion Characteristics of Vanadium Alloyed Ductile Cast Iron inNitric Acid, J. Appl. Sci. Res., 2007, 4(10), p 1267–1271

45. Valli et al. (1985) studied TiN coating adhesion Park and Kwon (1997) scratch resistance Randall et al. (2001) and Ichimura and Ishii (2003) scratch resistance testing

Appendix A.

JALALABAD STEEL LIMITED BALANCE SHEET Amount in BDT

Financial Year Ending: December	2022*	2021	2020	2019	2018
NON-CURRENT ASSETS					
Fixed and Operating Assets	230,245,892	240,542,708	201,605,734	83,605,235	88,816,849
Other Non-Current Assets	0	0	0	0	5,000,000
	230,245,892	240,542,708	228,348,187	110,347,688	93,816,849
CURRENT ASSETS					
Inventories	328,121,810	311,636,005	296,700,000	295,246,485	281,663,317
Trade Receivables	75,045,125	67,974,705	109,022,650	27,534,125	1,847,500

Other Receivables	0	0	0	0	49,210,325
Cash and Bank Balances	5,852,988	5,701,101	8,077,900	7,876,137	7,719,203
Net Loans, Advances and Financing	26,742,453	26,742,453	0	0	0
Deposits And Placements With					
Financial Institutions	31,914,520	31,914,520	0	0	0
	477,676,896	443,968,784	413,800,550	330,656,747	340,440,345
CURRENT LIABILITIES					
Borrowings	282,685,537	240,741,785	360,388,067	196,848,680	250,142,239
Trade Payables	1,515,225	4,025,115	3,545,125	3,080,576	6,780,770
Other Payables	150,330	440,125	435,150	3,700,194	0
Provisions For Liabilities	33,545,125	32,018,596	14,811,725	26,640,094	26,640,094
	317,896,217	277,225,621	379,180,067	230,269,544	283,563,103

NET CURRENT					
ASSETS/ (LIABILITIES)	**159,780,679**	**166,743,163**	**34,620,483**	**100,387,203**	**56,877,242**
	390,026,571	**407,285,871**	**262,968,670**	**210,734,891**	**150,694,091**
FINANCED BY: SHAREHOLDERS' EQUITY					
Share Capital	**42,016,000**	**42,016,000**	**500,002**	**500,001**	**500,000**
Reserves	**10,000,000**	**10,000,000**	**10,000,000**	**10,000,000**	**5,000,000**
Retained Profits/(Losses)	**289,795,221**	**247,244,871**	**219,264,949**	**181,719,540**	**145,194,091**
	341,811,221	**299,260,871**	**229,764,951**	**192,219,541**	**150,694,091**
NON-CURRENT LIABILITIES					
Borrowings	**0**	**0**	**0**	**0**	**0**
Other Non-Current Liabilities	**48,215,350**	**108,025,000**	**33,203,719**	**18,515,350**	**0**
	48,215,350	**108,025,000**	**33,203,719**	**18,515,350**	**0**

	390,026,571	407,285,871	262,968,670	210,734,891	150,694,091

Appendix – B

Financial Year Ending: December	2022*	2021	2020	2019	2018
Revenue	1,608,565,595	1,503,590,090	1,278,240,000	1,121,790,810	671,704,582
Less: Cost of Sales/Services	(1,418,123,321)	(1,304,571,155)	(1,179,054,429)	(1,015,554,058)	(537,254,843)
Gross Profit	190,442,274	199,018,935	99,185,571	106,236,752	134,449,739
Other Operating Income	2,174,647	2,071,092	0	0	0
Less: Operating Cost	(74,447,745)	(70,282,914)	(17,135,521)	(16,916,221)	(36,295,777)
Profit/(Loss) From Operations	118,169,176	130,807,113	82,050,050	89,320,531	98,153,962
Net Finance Costs	(15,619,051)	(41,393,464)	(17,703,040)	(18,275,406)	(38,721,335)
Non-Operating Income	8,545,350	8,130,277	8,010,125	7,525,450	7,167,609
Profit/(Loss) Before Tax	111,095,475	97,543,926	72,357,135	78,570,575	66,600,236
Tax Expense	(33,545,125)	(32,018,596)	(14,811,725)	(27,045,125)	(26,640,094)
Profit/(Loss) After Tax	77,550,350	65,525,330	57,545,410	51,525,450	39,960,142
Restated Retained Profit/(Loss) Brought Forward	247,244,871	181,719,541	181,719,540	145,194,091	110,233,950
Profit/(Loss) Available for Appropriation	324,795,221	247,244,871	239,264,950	196,719,541	150,194,092

Unappropriated Profit/(Loss) Carried Forward	**289,795,221**	**247,244,871**	**219,264,949**	**181,719,540**	**145,194,091**