Report On
Impact of Trade Settlement Delays on the Financial Performance of Listed Brokers in Bangladesh

By

Sifat Alam Jiad
Student ID: 21204007

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
January, 2026

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:
____________________________________ **Sifat Alam Jiad** Student ID: 21204007

Supervisor's Full Name & Signature:
____________________________________ **Dr. H.M. Arif, Phd** Assistant Professor, Brac Business School (Accounting) Brac University

Letter of Transmittal

Dr. H.M. Arif

Assistant Professor,

Brac Business School

BRAC University

66 Mohakhali, Dhaka-1212

Subject: Submission of Internship Report on 'Impact of Trade Settlement Delays on the Financial Performance of Listed Brokers in Bangladesh'

Dear Sir,

It is my pleasure to submit my internship report titled 'Impact of Trade Settlement Delays on the Financial Performance of Listed Brokers in Bangladesh', which I was appointed to do by your direction. I have attempted my best to finish the report with the essential data and recommended proposition in the most compact and comprehensive manner possible.

I sincerely hope that this report meets the academic standards and expectations of the course. I would be grateful for your valuable feedback and suggestions, which will help me further improve my analytical and research skills.

Sincerely yours,

____

Sifat Alam Jiad

Student ID: 21204007

BRAC Business School

BRAC University

Date: January 10, 2026

Non-Disclosure Agreement

This agreement is made and entered into by and between Shanta Securities Limited and the undersigned student at Brac University, Sifat Alam Jiad.

I hereby declare that the internship report “Impact of Trade Settlement Delays on the Financial Performance of Listed Brokers in Bangladesh” has been prepared by me based on the knowledge gained from my internship, in partial fulfillment of the requirements of the Bachelor of Business Administration (BBA) program at BRAC Business School, BRAC University.

I further declare that this report is my original work and all sources of information used have been duly acknowledged.

Acknowledgement

First of all, I am deeply grateful to Almighty Allah for watching over me and giving me this opportunity to work at Shanta Securities Limited as a Research and Strategic Planning Department intern.

I would also like to express my gratitude towards my parents for supporting me and being my pillar of support.

I would like to express my sincere gratitude towards my internship supervisor, **Dr. H. M. Arif**, Assistant Professor, BRAC Business School, BRAC University, for his guidance during the preparation of the internship report. His suggestions and support played an important role in shaping this study.

I would like to acknowledge the cooperation and assistance of all individuals and institutions whose publicly available data and reports were used in this study. Their contributions were essential in facilitating the empirical analysis presented in this report.

Finally, I would like to thank my friends for their constant encouragement, patience, and motivation throughout this journey. Their support was instrumental in helping me complete this report successfully.

Executive Summary

This internship report focuses on analyzing and examining the impact trade settlement delay has when it comes to the financial performance of listed brokerage houses in Bangladesh. This report mainly uses a quantitative approach by using the dataset of 10 years of 10 brokerage houses in Bangladesh to understand how settlement delays affect cost efficiency, profitability, and borrowing behavior of the brokerage houses. Since the data regarding settlement delays was not publicly available, measures like liquidity stress, borrowing spikes, and delay-induced cost indicators were used as proxies in order to capture the mechanisms of delayed settlements.

Through analyzing the results of the study, it can be said that trade settlement delays are a structural risk factor for the listed brokerage houses of Bangladesh. This especially applies to brokerage firms with weak liquidity or inefficiency in asset utilization. Brokerage houses that are exposed to higher liquidity stress tend to show lower asset and equity returns, a higher cost-to-income ratio, and increased dependency on short-term borrowing. These effects on the brokerage houses seem to increase even more when there are periods with higher trading activities, which amplify the financial vulnerability of these firms. The study concludes that improving settlement is critical for enhancing firm resilience.

Keywords: *Trade Settlement Delays; Liquidity Stress; Brokerage firm Performance; Short-Term Funding dependence; Cost-to-Income*

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List of Acronyms

ROA	Return on Assets
ROE	Return on Equity
T1	1 day delay
T2	2-day delay
T3	3-day delay
H1	Hypothesis 1
H2	Hypothesis 2
H3	Hypothesis 3
H4	Hypothesis 4
H5	Hypothesis 5
TCE	Transaction Cost Economics
DSE	Dhaka Stock Exchange
SSL	Shanta Securities Limited
BSEC	Bangladesh Securities and Exchange Commission

Chapter 01

Internship Overview

1.1 Student Information

- Name: Sifat Alam Jiad
- Student ID: 21204007
- Program: Bachelor of Business Administration (BBA)
- Major/Specialization: Accounting (Major) and Finance (Minor)

1.2 Internship Information

1.2.1 Internship Period, Company Name, Department/Division, Address

- Internship period: October 4th, 2025 to January 14th 2026
- Company Name: Shanta Securities Limited
- Department/Division: Research and Strategic Planning Department
- Company Address: 10), S.E (B)-2, The Glass House, 38 Gulshan Ave, Dhaka 1212

1.2.2 Internship Company Supervisor's Information

- Name: Md. Rakibul Hassan, CFA
- Position: Research Analyst
- Department: Research and Strategic Planning Department
- Organization: Shanta Securities Limited

1.2.3 Job Scope - Job Description/Duties/Responsibilities

During the internship period at Shanta Securities Limited, I worked under the Research and Strategic Planning Department, where my key responsibilities included:

- Creating "Newsflash" where I had to go through the news every day and find the ones that impact the economy domestically and internationally, impact the corporate world, and many other segments or industries like energy, politics, RMG, transportation, and commodities, and create a small summary for the patrons.
- Collecting and updating daily capital market information from Investing.com, the Dhaka Stock Exchange (DSE), and the Bangladesh Bank.
- Preparing daily summaries of top gainers, losers, and turnover from the daily capital market update.
- Making sure to keep the quarterly and annual information up to date for the daily capital market update.
- Checking daily for resumptions in order to keep the share amount accurate.
- Updating macro-economic indicators weekly.
- Monitoring and recording dividends, earnings per share (eps) announcements, board meetings, and corporate disclosures.
- Recording and emailing the growth of eps and dividend amounts of specific companies.
- Assisting in gathering financial data such as net interest income, total operating income, net operating income, net profit after tax, total assets, total loans, total deposits, total inventories, paid-up capital, and cash and short-term investments from financial statements.

- Supporting the research team by collecting and compiling company-specific and sector-wise financial information.

These activities help the department to make accurate and timely research outputs for investors and internal decision-making.

1.3 Internship Outcomes

1.3.1 Contribution to the Company

Although during my experience, I did not have any access to the inner workings because of the confidentiality requirements of financial procedures, I contributed by collecting and ensuring accurate and up-to-date market data collection and reporting.

I contributed to the functionality and accuracy of the department through daily market updates and systematic financial data compilation that supported the team in preparing reports and helped track market movements more efficiently.

I also contributed to training the two new interns in what to do and what their daily tasks will be, and taught them how to complete the daily tasks. I also made sure to explain all the anomalies that might occur and what to do in case of them happening. And to make sure that they do not get stumped if they forget any parts of their tasks, I made sure to make video recordings explaining all the tasks as well under the instruction of my senior.

All in all, despite the fact that the tasks I handled were only of the surface level, through my willingness to help wherever I could, I believe that I was able to make small yet significant contributions.

1.3.2 Gains/Benefits of the Student

This internship at Shanta Securities Limited fulfilled its roles by providing real-life experiences that helped fill the gap between theory and practice in the academic and professional fields, by providing insights about how the corporate world functions. It provided hands-on experience with the Bangladesh stock market and how a brokerage firm operates.

This internship also helped me gain adeeper understanding of financial statements, corporate disclosures, and market indicators. Not only that, but it also helped me grow and improve my analytical thinking, data handling abilities, and Excel and reporting skills. I was also able to learn and enhance my skills in communication, time management, teamwork, and personal responsibility by working with a highly efficient team.

Furthermore, this internship also helped me to be more confident when it comes to handling real-time financial data and tools, and has furthered my desire to learn more about capital markets.

1.3.3 Difficulties and Problems Faced During the Internship Period

Despite having an overall positive experience, there were certain challenges that I had to face during the internship period. The first difficulty was the sudden high learning curve after a few days of a slow learning pace. Another major difficulty was collecting financial data in a consistent and comparable manner from annual reports of over 240 companies, as reporting formats were often differnet than each other. As someone who always worked with a select few companies and their annual reports, this is something that was quite difficult for me, not to mention the number of annual reports I had to go through.

Furthermore, at the start of the internship, understanding how the internal reporting procedures and research formats worked also needed additional effort. The anomalies that would arise when doing my daily tasks were also something that created difficulties for me. However, I was able to overcome all these difficulties with the help of my supervisors and by learning continuously.

1.3.4 Recommendations to the Company on Future Internships

Based on my experience during this internship, I would recommend that Shanta Securities Limited introduce an orientation program on the first day of the internship so the interns can familiarize themselves with the research tools and the workflows of the department.

Providing them with a printed task guideline and timeline would help the interns improve their efficiency. Other steps that can help the interns be more efficient in learning and task completion would be providing them with basic training on frequently used functions or websites, such as Excel formulas, the DSE website, and financial databases.

On a final note, letting the interns get involved in live research and projects while being under the strict supervision of a senior would also help them learn and increase their practical knowledge while adding value to the organization.

Chapter 02

Organization Part

2.1 Introduction, Objective, Scope of Study, Methodology, Significance, and Limitations of the Study

2.1.1 Introduction

This chapter will focus on analyzing one of the most dynamic brokerage houses in Bangladesh, Shanta Securities Limited, and explore the operational, strategic, and managerial dimensions based on primary data that was collected through observation during the internship period and secondary data from various articles and news sources. This chapter will show the alignment of the firm and its practices with the regulatory frameworks that listed brokerage firms of Bangladesh need to abide by and the demands of the industry by analyzing all the gathered data.

Since Shanta Securities Limited is a brokerage that has positioned itself as a technologically advanced firm, it can be seen as the appropriate topic for studying how the brokerage firms of Bangladesh that are focused on providing modern financial services react to the changes in market demands. Shanta Securities Limited and its emphasis on combining digital technologies with its service to improve the operational efficiency and the experience of the customer through platforms like the Shanta EasyX and EasyTrade platforms show its dedication and determination.To maintain its competitive edge, the firm took the steps to integrate innovative technologies with traditional services provided by the brokerage (The Business Standard, 2025; Daily Star, 2025).

2.1.2 Objectives

The objective of this chapter is to critically analyze Shanta Securities Limited and its internal and external practices. This would include analyzing and understanding the brokerage firm and its different aspects, like financial performances, marketing strategies, leadership style, and HR policies. This study hopes to highlight how the mission and vision of the firm are supported by the strategic decisions it makes through analyzing all these different aspects of the firm.

2.1.3 Scope of Study

The scope of the study is the internal workings of the firm, like what type of leadership Shanta Securities Limited follows, its HR procedures, accounting practices, and its operational use of information systems. This chapter and study are based on the experience gained from the internship period and from websites, articles, or news portals that are available to the general public. The scope of the study is limited to Bangladesh, and it also does not include any affiliate firms like Shanta Asset and Equity Management unless it is needed to understand the context in any way (Shanta Securities Limited, n.d.).

2.1.4 Methodology of the Study

The approaches used for this chapter or study contain a mix of both qualitative and quantitative methods. All the primary data gathered for this chapter comes from observation and conversation with the seniors during the internship period. When it comes to the secondary data sources, they came from industry news articles and the official website of the firm. Any analytical commentary on the firm is taken from sources that are publicly available to understand its accounting practices, because Shanta Securities Limited is a privately owned firm, and its financial data is not publicly available. SWOT and Porter's Five Forces were also used to evaluate the firm's competitive standing; on the other hand, HR and marketing practices were studied by using management theory.

2.1.5 Significance

This study is significant for both students and academic researchers as it offers a real-world application of finance and management principles. As for future potential interns, it shows the culture and strategic priority of Shanta Securities.

2.1.6 Limitations

Even though an effort was made to present an accurate and thorough analysis, there were limitations that hampered the effort. Since there are no publicly available financial statements and reports for Shanta Securities, the ability to do and provide any quantitative analysis was limited. Also, most of the information regarding the firm's practices comes from the general observation during the internship, not from formal documentation. These limitations show that to further the study, direct access to the financial reports is needed.

2.2 OVERVIEW

2.2.1 Background and establishment

Shanta Securities Limited was founded under the Shanta Group in 2015. It is known as one of the most dynamic brokerage houses in Bangladesh, whose goal is to modernize brokerage services and elevate customer experience, transparency, and confidence in the capital market of Bangladesh. Ever since its establishment, the firm has made sure to integrate both advanced technology and research-driven services to set itself apart from other brokerage houses that use traditional methods that still rely too much on manual processes and minimal analytical support (Shanta Securities Limited, n.d.).

When it comes to the topic of growth in the capital market of Bangladesh, Shanta Securities Limited has contributed a big amount through its promotion of research-based decision-making, investor awareness, and ethical trading. The firm offers its services to both individual and institutional investors. This allows the firm to follow the standards set by BSEC while participating in the market smoothly. With the help of its Research and Strategic Planning Department, the firm makes sure to provide its clients with financial insights and analysis, which helps to reduce the asymmetry in awareness and increase market efficiency.

2.2.2 Mission, Vision, and Core Values of the Company

Shanta Securities Limited puts emphasis on solutions for investments that are tech-driven rather than speculative, which are available to all of its clients, so they can make informed decisions as part of its mission (Shanta Securities Limited, n.d.).

As for the vision of Shanta Securities Limited, it is to become the benchmark within the Bangladesh brokerage industry by offering clients solutions that are simple yet efficient. This shows their long-term goal of a leadership role in the brokerage industry.

The core values of the firm can be seen in its daily operations, which are integrity, professionalism, and client focus. These values are consistently present through their service and work culture, which in turn reinforces the trust and confidence clients have towards the firm.

2.2.3 Products and Services

Shanta Securities Limited offers multiple financial tech-driven services, such as stock and margin trading, IPO facilitation, BO account management, etc. The firm puts a lot of emphasis on digital transformation, which is also a big reason for the firm's evolution. In order to make it easier for the clients, Shanta Securities Limited introduced an online trading platform, such as EasyTrade, EasyX apps, and websites. While EasyTrade helps with trading stocks, EasyX provides real-time market data, and lets client monitor their portfolio, while providing access to research materials and results. These apps, websites, and initiatives of the firm have created a convenient environment for the client and have aligned with global best practices (The Business Standard, 2025; The Daily Star, 2025).

2.3 Management Practices

2.3.1 Leadership Style

Through observing the employees of the firm and how they interacted during the internship period, it was pretty evident that the leadership style of Shanta Securities Limited points towards a participative leadership style. The higher-ups of the firm, like the COO and the head of multiple departments, would constantly communicate with the employees and obtain insights. This kind of leadership helped the firm to add innovations like the EasyX app, since multiple departments need to coordinate with each other for it to run efficiently and smoothly. It also supports a culture where employees can express their own opinions regarding the tasks, since they feel seen and appreciated. This also helps the firm to keep up with the financial service industry, where constant innovation is needed.

2.3.2 HR Planning and Recruitment

At Shanta Securities Limited, Human Resource planning is driven by the need to attract, recruit, and retain talent that brings fresh perspectives to the company, can use platforms like Excel, Microsoft Word, Microsoft 365, etc., and can navigate financial markets skillfully. Along with strong analytical abilities, individuals with strong academic backgrounds are targeted during recruitment. In order to choose the best of the best, the firm makes the candidates go through a written test, a viva, and then an interview before choosing any candidates. Through this process, the firm prioritizes hiring candidates who are both capable and motivated, which helps Shanta Securities Limited to sustain a workplace that is competent and adaptable in this constantly evolving industry.

2.3.3 Training, Development, and Performance Appraisal

The employees of Shanta Securities Limited are trained and developed through on-site training, assigning a mentor for monitoring, and through the help of their peers. Constantly developing the employees is vital for the firm, since the financial service industry is constantly evolving and changing. As for the performance appraisal of the employees working on the firm, it is done based on accuracy, client outcomes, and efficiency, which creates an environment where one needs to continuously improve oneself.

2.4 Marketing Practices

2.4.1 Marketing Strategy and Target Segment

From the information gathered, it seems that the strategy of Shanta Securities Limited regarding marketing is based on building long-term trust and relationships with the investors. The firm focuses on both the individual and institutional investors who seek brokerage services that are reliable. The firm focuses on gaining the trust and reliance of its clients by providing them with market data, research insights, and reputational credibility.

Following this strategy helps the firm to tailor its services so that it can meet the needs of diverse investors, including investors who are new to this industry and investors who have been in the industry for a long time.

2.4.2 Channels and positioning

To communicate with the clients, the firm uses its digital platform EasyTrade and EasyX, emails, phone calls, and in-person client meetings. Through digital platforms or websites of Shanta Securities Limited, investors can monitor and trade while receiving real-time insights (The Business Standard, 2025; Daily Star, 2025). These platforms also serve the purpose of marketing touchpoints for the firm. It helps the firm to reinforce its brand presence among more tech-savvy investors.

2.4.3 Branding, Advertising, and Digital Marketing

Shanta Securities Limited focuses on its digital presence, visibility, and client education instead of doing aggressive mass advertising. The firm continues to maintain an active social media presence while making sure to highlight its innovations in technology as part of the firm’s branding efforts.

2.4.4 Marketing Gaps and Challenges

Even though Shanta Securities Limited has a strong digital presence, it is facing problems when it comes to expanding the reach of the firm beyond its already existing investor base. The firm can overcome the hurdle by focusing on the younger and emerging investors who are searching for online financial services and marketing itself to them.

2.5 Financial Performance and Accounting Practices

2.5.1 Financial Performance Descriptive Analysis

Because Shanta Securities Limited is a privately owned firm, there are no detailed financial statements available to the general public. But through industry recognition and service expansion, the firm's performance can be estimated. An example would be the firm getting recognized as one of the top three brokerage houses in Bangladesh at the BSEC Independence Golden Jubilee Award 2023, which honors their strong operational performance and market reputation (The Business Standard, 2024). This award highlights the strong fundamentals of Shanta Securities Limited. On top of that, introducing digital platforms like EasyTrade and EasyX also shows their emphasis on operational efficiency and customer convenience, which are important aspects for sustainable revenue growth in the brokerage industry.

2.5.2 Accounting Practices

Shanta Securities Limited follows accrual accounting, which is consistent with industry norms and regulatory requirements. In accrual accounting practices, the firm needs to keep systematic records of all the operating expenses, client transactions, and brokerage commissions. While there are no external sources that were able to verify the method the firm uses for depreciation or its internal accounting disclosures, the regulatory recognition and service integrity of the firm support the fact that Shanta Securities Limited complies with financial reporting standards.

2.6 Operations Management and Information System Practices

Shanta Securities Limited combines modern information systems with its services in order to support research, trading, and client research. Its digital platforms, like EasyTrade and EasyX, help clients to execute buy and sell orders, do real-time data processing, and help to share information like daily market summaries with the clients. The firm is able to maintain its operational efficiency by making sure to comply, ensure accuracy, manage quality, and implement proper internal controls.

2.7 Industry and Competitive Analysis

2.7.1 Porter's Five Forces Analysis

The competitive environment of the brokerage industry can be analyzed as follows by using Porter's Five Forces Analysis:

- Competitive Rivalry (High): There is a large number of brokerage houses in Bangladesh, indicating that the competition is very high. This tension also gets heightened because of the lack of product differentiation.
- Threat of New Entrants (Moderate): Because of the need for high capital and costs at the initial stages, along with the requirements of BSEC, the threat of new entrants is not high, but not low either.
- Threat of Substitutes (High): Multiple brokerage houses are on the same level as Shanta Securities, which can be seen as alternatives. Direct investments through banks and asset management companies also pose a threat to the firm.

- Bargaining power of Clients (High): Clients have the option to easily switch to another firm or broker. On top of that, the availability of online trading platforms gives the clients even more options to choose from.

  Bargaining power of Suppliers (Low): Because there is limited pricing and negotiating power, it works in favor of brokerage firms since one supplier will not be able to exert much influence on a brokerage firm.

2.7.2 SWOT Analysis of Shanta Securities

- Strengths: Shanta Securities Limited has a strong online presence and brand reputation. It also has digital trading platforms like EasyX and EasyTrade to help its clients create a more convenient environment, which attracts tech-savvy investors. It is also known to have strong research and analytical capabilities and is associated with a well-reputed financial group.
- Weaknesses: The firm seems to be quite limited when it comes to its promotional activities. This might limit their growth and reach to new customers. The service cost of the firm also seems a bit higher when it is compared with its peers.
- Opportunities: The firm’s strong online presence provides it with the opportunity to grow and expand its online platforms. The younger generation has started to grow an interest in the stock market, so being able to capture the young audience would be perfect for Shanta Securities Limited and its online platforms.
- Threats: The competition between brokerage firms to acquire and maintain customer loyalty is something that keeps the firm on edge, always. On top of that, high volatility also affects trading volume and regulatory changes, which increases the cost of the firm.

Economic stability is also something that affects the firms, since it impacts the investors' confidence in the market.

2.8 Recommendations and Implications

For Shanta Securities Limited, recommendations would be to focus on making their digital marketing more prominent in order to reach more people. The firm should also make changes to its method of training the intern into a more standardized way. It should also focus on expanding its research-driven services.

2.9 Summary and Conclusions

This chapter provided an overview of Shanta Securities Limited, along with the type of leadership style the firm practices, its organizational and management practices, and its marketing strategies. The findings also show how the firm combines human resources, operational practices, and digital platforms to sustain performance in the highly competitive industry of the stock market.

Chapter 03

Project Part

'Impact of Trade Settlement Delays on the Financial Performance of Listed Brokers in Bangladesh'

3.1 Introduction

3.1.1 Background

Trade settlement is known to be one of the most important functions of the secondary markets. It refers to the process of the securities getting transferred to the buyer while the cash or other securities of equal value get transferred to the seller.

Completing the settlement quickly helps brokerage firms to maintain liquidity, reduce their risk related to operations, and make the cost of transactions more predictable for the firms. But if, for some reason, the settlement gets delayed, it affects both the brokerage houses and the wider market in a negative way. The global literature does point to the consequences of settlement delays, such as reputational damage, higher operational risks, higher settlement failure rate, which leads to clients leaving and, in turn, a drop in revenue and profit (BIS, 2018; Harris, 2003; Gurrola-Perez, 2019; ECB, 2011). When seen from the level of a brokerage firm, this kind of inefficiency in trade settlement can lead to low profits, high costs, and squeezed margins. But for some reason, most of the researches focus on either the developed market or on market-level outcomes, which creates a gap in emerging markets and at the level of the brokerage firm.

When it comes to an emerging market like Bangladesh, there is limited evidence regarding trade settlement speed and its link to brokerage firms and their financial performance. Because of manual processes, limited exposure to technology and its adaptation, broken reconciliation systems, and inefficiency in trade settlement are much more prominent in Bangladesh (Islam & Khaled, 2020; The Financial Express, 2025). Despite all these problems, the area related to settlement delay seems to be severely understudied. Addressing this gap in the study is important, since a market like Bangladesh will be significantly impacted by inefficiency in trade settlement. This study will address this gap by looking at settlement trades and their influence on the brokerage houses in Bangladesh.

3.1.2 Research Problem Statement

In an emerging market like Bangladesh, settlement delays have been reported to create funding problems, higher operating costs and stress, increase counterparty risks, and reputational risks for brokerages. However, there is not much empirical evidence that measures how inefficient settlements affect the brokerage firms and their financial performances. This study investigates whether delays in settlements put a big dent in the profitability and liquidity position of brokerage houses.

3.1.3 Research Objectives

Based on the problem statement, the aim of this study is to investigate the effects of trade settlement delays and how it influences the financial performance of listed brokerage houses of Bangladesh.

3.1.4 Benefits or Significance of this Research

3.1.4.1 Theoretical Contributions

This study or research fills a significant gap by linking settlement conflicts to financial markets at the firm level in an emerging market. The existing studies seem to concentrate largely on liquidity, volatility of price, and stability effects of settlement delays or failures in developed markets. But when it comes to how this kind of friction influences the performance of brokerage firms, there are limited studies available. Through focusing on the consequences at the intermediary level, this study shows market microstructure theories that are beyond pricing and liquidity outcomes in order to include financial risk and operational vulnerability at a firm level (Gurrola-Perez, 2019; IOSCO, 2012).

This research or study will show an empirical framework that is coherent and cohesive. The empirical framework also includes liquidity hazards, which in turn make the broker require more funds and make the profitability of the firm grow weaker. These show that there is consistency with theoretical explanations of how trade settlement delay spreads instability financially (Devriese & Mitchell, 2005; BIS, 2018). Thus, this empirical framework will be of help to any researcher who would want to model how delay in trade settlement affects liquidity and financial performance of brokerage firms.

3.1.4.2 Practical Benefits

<u>For brokerage management</u>

This study or research helps to see the financial costs that are associated with settlement delays in a quantifiable manner, which will help to ensure that an informed decision is taken. It will also help firms to prioritize liquidity planning, investment in potential risk controls, and automation for efficiency by highlighting the negative impact of trade settlement on liquidity, profit, and capital of the firms.

For investors and creditors

This research or study aims to improve transparency and risk assessment by identifying operational risk as a driver of financial fragility. Investors and lenders will be able to evaluate the reliability of the broker and the price risk more precisely, which will allow them to be able to make well-informed decisions when choosing which trading services they would want to align themselves with. This will lead to a market where discipline will be more enhanced.

For academic researchers

This study provides a framework that future researchers will be able to use for their studies or use as a comparison. It adds to the growing discussions on financial infrastructure and its resilience in emerging markets by linking operational risk with financial theory.

3.1.5 Scope of the Study

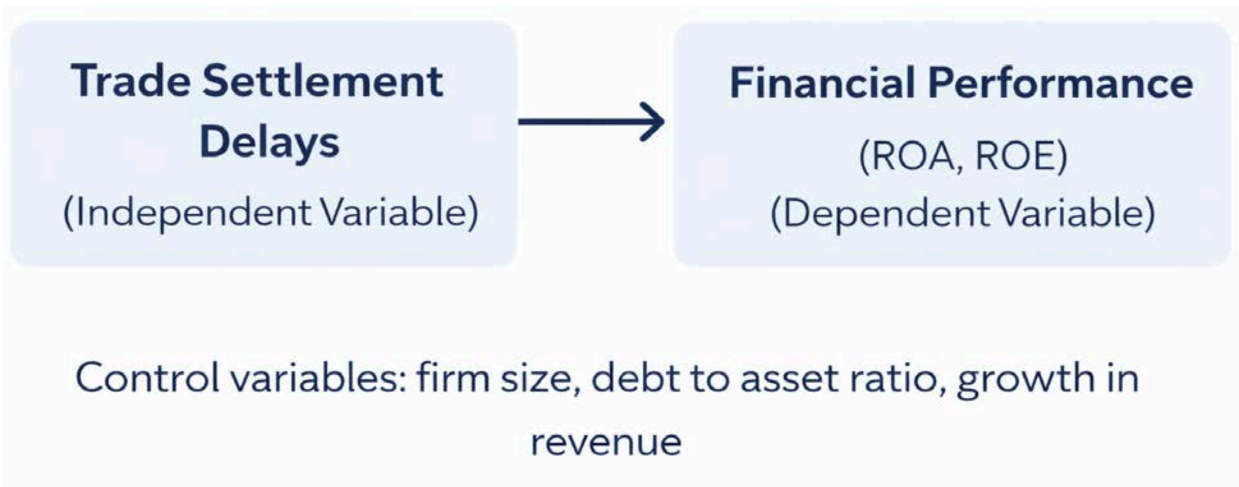
This study focuses on analyzing the delay in trade settlement and the impact it has on the financial performance of brokerage houses in Bangladesh. The data used for this study were taken from publicly available sources from ten listed brokerage firms over a period of over ten years. This study examines profitability, stress, and reactive borrowing behavior of the firms. Cost efficiency has been calculated in this study by using proxy measures, since settlement delay data is not publicly available.

The study only focuses on settlement-related financial effects and does not take into consideration the behavioral factors, settlement issues from the client's side, or cross-border transactions.

3.1.6 Theoretical / Conceptual Framework

Theories used for the study:

- Liquidity Risk Theory: Delays in settlement increase the risk of settlement, liquidity, especially when trades aggregate.



3.2 Literature Review

3.2.1 Settlement Delays and Financial Performance

Research on inefficient post-trade settlement has shown that settlement delays or failures carry serious systemic and firm-level risks regarding financial performance. An example of this would be the network-analysis study by Gurrola-Perez, He, and Harper (2019) on UK bond and equity settlement data, which revealed that settlement fails are not random. It seems that participants trigger failures repeatedly, which then spread through "fail-chains, creating liquidity stress on many participants and undermining overall market functions. The study that they have done shows how even a market that is mature with a good infrastructure can also remain vulnerable in the face of trade settlement delays. But the study done by them fails to show any relation between settlement delays or failures and the financial performances of individual brokers or brokerage houses, which ultimately leads to a gap in understanding and consequences on a micro-level.

On a similar note, the simulation-based research done by Devriese and Mitchell (2006) points out the fact that, despite having a good amount of liquid assets or cash at their disposal, there is no guarantee of a full settlement in a multi-security, multi-period settlement system. They also point out how this kind of default or delay can lead to a decrease in investor confidence and persistent settlement failures. This shows that having enough liquid cash will not guarantee that there will be no risk of settlement because the settlement systems are vulnerable under stress, which in turn creates credit pressures for participants and downward liquidity for the brokers and brokerage firms. As with Gurrola-Perez et al. (2019), this work or study seems to have a gap in the research discussing firm-level financial outcomes because this work is not empirical and does not trace effects into firm-level profitability.

Another study that examines settlement delays in money market instruments shows that delays in settlement are often done intentionally, used by the participants in order to manage liquidity shortages or overdraft risks (Musto, Nini & Schwarz, 2010). The delay in settlements creates funding stress. While the context might be different from equity brokerages, it still strengthens the general expectation which is that settlement delays in any segment of financial markets influence liquidity risk for intermediaries or participants. But still, these do not show any result in terms of brokerage profitability.

The theoretical reasoning behind the link between settlement delays and firm performance is based on the theory of liquidity risk. If the brokerage firm fails to access the expected funds because of settlement delays, it will be forced to seek alternative sources of finance. Funding liquidity risks may cause higher market stress and lower profitability and performance, as proposed by Brunnermeier & Pedersen (2009). Liquidity risks may cause higher funding costs and lower financial performance of the firms.

The financial performance of the brokerage firms is generally evaluated based on the financial ratios such as Return on Assets (ROA) and Return on Equity (ROE). These ratios reflect the efficiency of the firm as well as the profitability of the shareholders. The corporate finance theories highlight that the financial performance of the firms is significantly influenced by various factors specific to the firm. For instance, the financial leverage of the firm, as reflected by the debt-to-asset ratio, is an important determinant of the profitability of the firm. The trade-off theory of financial leverage highlights that the financial risk associated with high financial leverage results in a high level of fixed financial costs that could adversely impact the profitability of the firm (Modigliani & Miller, 1963; Kraus & Litzenberger, 1973). The size of the firm is another important determinant that could positively impact the financial performance of the firm. Larger firms could enjoy the advantage of economies of scale as well as diversification (Berger & Humphrey, 1997). Moreover, revenue growth is another important determinant that could positively impact the financial performance sustainability of the firm (Penrose, 1959).

All in all, it can be said that even though international and industry literature clearly show the existence and nature of settlement risk, there seems to be little to no research that connects trade settlement delays with financial performance at the broker level. This gap shows the justification for the need for firm-level studies, especially in emerging markets. It can also be said that while emerging markets and cross-segment evidence support the argument that settlement delay does affect market liquidity and risk, no link is shown between settlement efficiency and firm-level financial performance, which leaves significant room for research. Also, when seen from the Bangladeshi context, it can be seen that a weak settlement infrastructure, capital adequacy, and structural liquidity issues among brokers all point to a promising area for empirical research on how settlement delays or inefficiencies impact broker-level financial performance.

3.2.2 Hypothesis:

- H0 (Null Hypothesis): There is no significant relation between settlement delays and the financial performance of brokerage houses.
- H1: An increase in trade settlement delays or failures is associated negatively with brokerage firms' financial performance, such as a lower ROA and ROE.

3.3 Methodology

3.3.1 Research Design and Approach

The research design that this study follows is quantitative and explanatory in order to highlight how delays in trade settlement affect the financial performance of listed brokerage firms of Bangladesh. While analyzing for this study, ten years' worth of data was taken form financial statements of ten listed brokerage houses of Bangladesh. This lets the study show how trade settlement delays make an impact on short-term liquidity stress.

A proxy-based empirical framework has been used for the analysis and study since settlement delays are not available to the general public. Using proxy-based frameworks is actually quite common when direct data needed for the research is not available (BIS, 2018; Gurrola-Perez, 2019). The methodology of this chapter combines the concept of liquidity risk theory in order to understand and highlight the impact of settlement delays on broker and brokerage performance.

3.3.2 Sources and Sample Selection

The sample for this study contains data from ten financial years of ten listed brokerage firms in Bangladesh. All these data were taken from sources that are publicly available, such as:

- Disclosures from the Dhaka Stock Exchange (DSE).
- Annual reports of listed brokers from their official websites or the LankaBangla website.
- Financial statements compiled during the internship.

If any kind of information was missing or publicly unavailable, it was assumed to be zero (0), which makes sure that the results are not overstated in any way and remain consistent.

3.3.3 Financial Calculations and Variable Construction

In order to measure the financial performance of the brokerage houses, the following indicators were used:

Return on Assets (ROA)

$$\mathrm{ROA}_{it} = \frac{\text{Net Income}_{it}}{\frac{\text{Total Assets}_{it} + \text{Total Assets}_{it-1}}{2}}$$

ROA is used to measure the firm's capability to use its assets to generate profits efficiently.

Return on Equity (ROE)

$$\text{ROE}_{it} = \frac{\text{Net Income}_{it}}{\frac{\text{Equity}_{it} + \text{Equity}_{it-1}}{2}}$$

ROE is used to see the profitability that is generated for shareholders.

Since there is a lack of data regarding settlement delays, this study makes liquidity stress proxies to simulate the financial impact that settlement delays would have.

Liquidity Stress

$$\text{Liquidity Stress}_{it} = \frac{\text{Short-Term Borrowings}_{it}}{\text{Current Liabilities}_{it}}$$

Liquidity stress will be used as a proxy for trade settlement delay, since data about trade settlement is not available publicly.

Regression

Regressions were done to see the relationship between financial performance and settlement delays. Control variables like debt-to-asset ratio, firm size, and growth in revenue were also used during regression. The formulas used for these variables are:

Firm size:

$$\text{Firm Size} = \ln(\text{Total Assets})$$

It is used to measure how big a firm is.

Debt to Asset ratio:

$$\text{Debt to Asset ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

It is used to see the financial risk of the firm by measuring how much of a firm's assets is being financed through debt.

Revenue Growth:

$$\text{Revenue Growth} = \frac{\text{Revenue}_t\text{-Revenue}_{t-1}}{\text{Revenue}_{t-1}}$$

It is used to see the growth or decline of the revenue over the years.

3.4 Findings Analysis

This section of the study will present and interpret the empirical findings from the calculations done in the Excel file for 10 listed brokerage firms over 10 year period. The study will focus on how settlement delay affects the financial performance of these brokerage firms.

3.4.1 Descriptive Statistics

Table 01 provides an overview of distributional characteristics by presenting the descriptive statistics of the variables used in this study.

Descriptive Results (Table 01)	Minimum	Maximum	Median	Mean
Trade Settlement Delay	0.00	3.23	0.33	0.40
Debt-to-Assets Ratio	0.00	0.73	0.23	0.24
Firm Size (ln Total Assets)	19.44	23.24	22.33	22.11
Revenue Growth	0.00	11.53	0.28	0.71
Return on Equity (ROE)	-0.37	0.43	0.04	0.06
Return on Assets (ROA)	-0.13	0.20	0.02	0.03

It can be seen from Table 01 that the range of trade settlement delay is 0.00 (minimum) and 3.23 (maximum). The mean and median for this variable are 0.40 and 0.33. These values suggest that the distribution for this variable is relatively symmetric, with a few occasional extreme delays in settlement.

The minimum and maximum range for the debt-to-asset ratio is 0.00 to 0.73, with a mean and median of 0.24 and 0.23. This data shows that the leverage across firms is quite moderate, with some of the brokerage firms being heavily dependent on short term loan or debt financing.

Firm size, which has been calculated as the logarithm of total assets, has a range of 19.44 and 23.24, along with 22.33 and 22.11 as median and mean. This suggests that when it comes to the scale of the sampled firms, the dispersion is actually quite limited.

The range for revenue growth is 0.00 to 11.53, which shows that it has a very large variability. The mean and median for it are 0.71 and 0.28. These values for this variable indicate that there are a lot of outliers.

Return on assets ranges from -0.13 to 0.20, with a median of 0.02 and a mean of 0.03. These values show that the profitability is usually positive but low.

The range for return on equity is from -0.37 to 0.43, with a mean and median of 0.06 and 0.04, which suggests that, compared to asset returns, there is higher volatility when it comes to shareholding returns.

3.4.2 Regression Analysis

Table 02	Return on Equity (ROE)	Return on Assets (ROA)
Trade Settlement Delay	0.012	0.002
	(0.227)	(0.680)
Debt to Assets Ratio	-0.183***	-0.083***
	(0.004)	(0.005)
Firm Size (Total Assets)	0.018	0.005

	(0.122)	(0.339)
Revenue Growth	0.030***	0.010***
	(0.000)	(0.001)
Constant	-0.328	-0.074
	(0.191)	(0.525)
Number of Observations	100	100
R-squared	0.214	0.167
Adjusted R-squared	0.181	0.132
Root Mean Squared Error	0.094	0.044

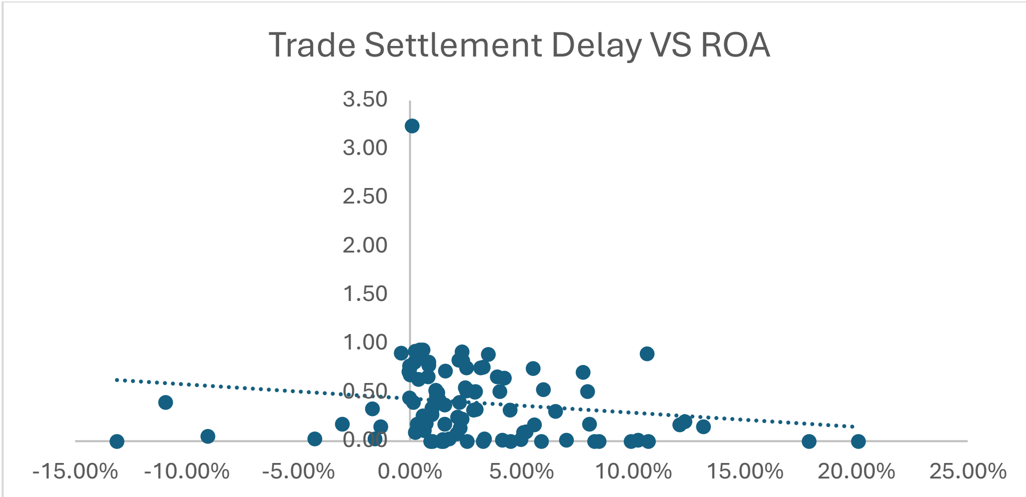
Note: p-values in parentheses. * p<0.10, ** p<0.05, *** p<0.01

Return on Assets (ROA)

Return on Assets (ROA) is a measure of efficiency in the use of total assets to generate profit. The regression equation explains about 16.7% of the variation in ROA ($R^2 = 0.167$), which is a moderate explanation.

Trade Settlement Delay

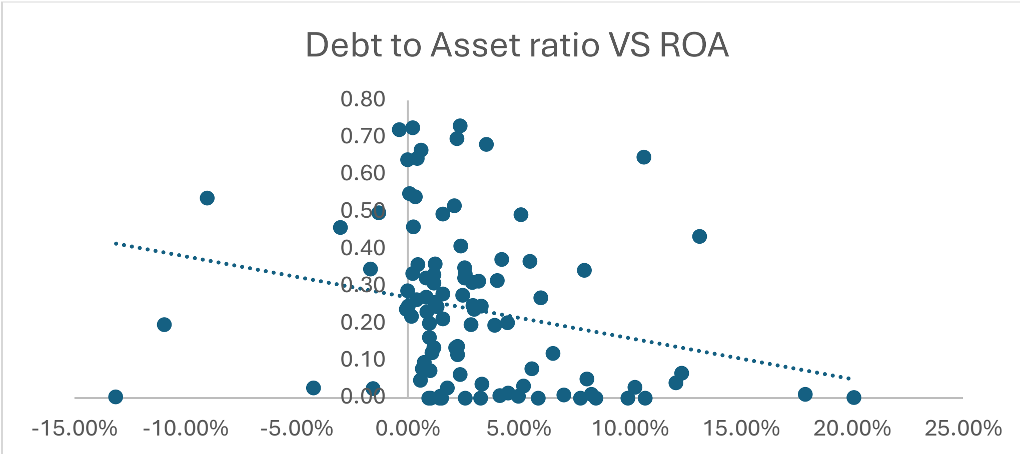
Though the mean is 0.40 and there is some variation up to 3.23, the regression analysis shows that Trade Settlement Delay is statistically insignificant in explaining ROA. The regression coefficient of 0.002 with a p-value of 0.680 shows that there is no significant relationship between asset profitability.



From the scatter diagram, it can be noted that the relationship between trade settlement delay and Return on Assets (ROA) is very weak and negative, as the trend line is slightly inclined towards the negative direction. Most of the data points are scattered around the lower regions of trade settlement delay (around 0-1), while the data points for ROA are concentrated around positive returns of a small magnitude. Although there are some data points that are extreme in trade settlement delay (above 3), they do not appear to have any specific effect on ROA. The scatter of data points around the trend line suggests that the data is not being explained by the trend line. This further supports the result of regression analysis that trade settlement delay does not have any significant effect on asset profitability.

Debt-to-Assets Ratio

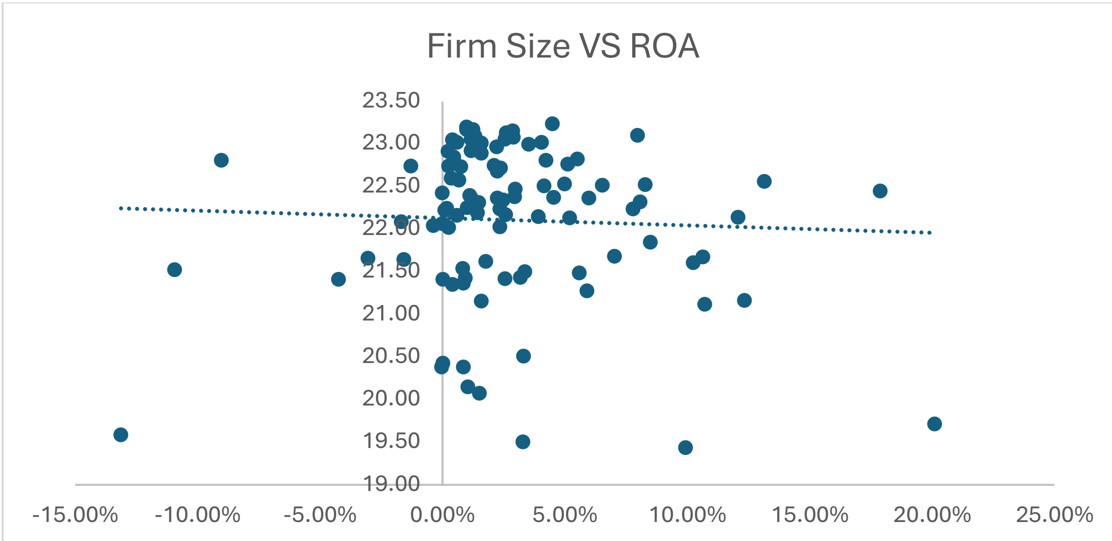
The Debt-to-Assets ratio, with an average of 0.24, has a statistically significant negative relationship with ROA. The regression coefficient of -0.083 ($p = 0.005$) shows that as leverage increases, asset profitability significantly decreases. This is because companies with higher debt ratios have higher financial costs, thus resulting in lower profits generated from total assets.



This scatter diagram clearly reveals the negative relationship between the variables of leverage and ROA. The downward-sloping trend line clearly illustrates that as the debt-to-assets ratio rises, the ROA falls. The firms with higher leverage (beyond 0.4-0.5) have lower or almost zero ROA. However, the firms with lower leverage have relatively better asset profitability. Although there is some fluctuation, the overall movement is clearly downward. This finding clearly supports the regression analysis and indicates that higher financial leverage substantially reduces asset profitability.

Firm Size (Log of Total Assets)

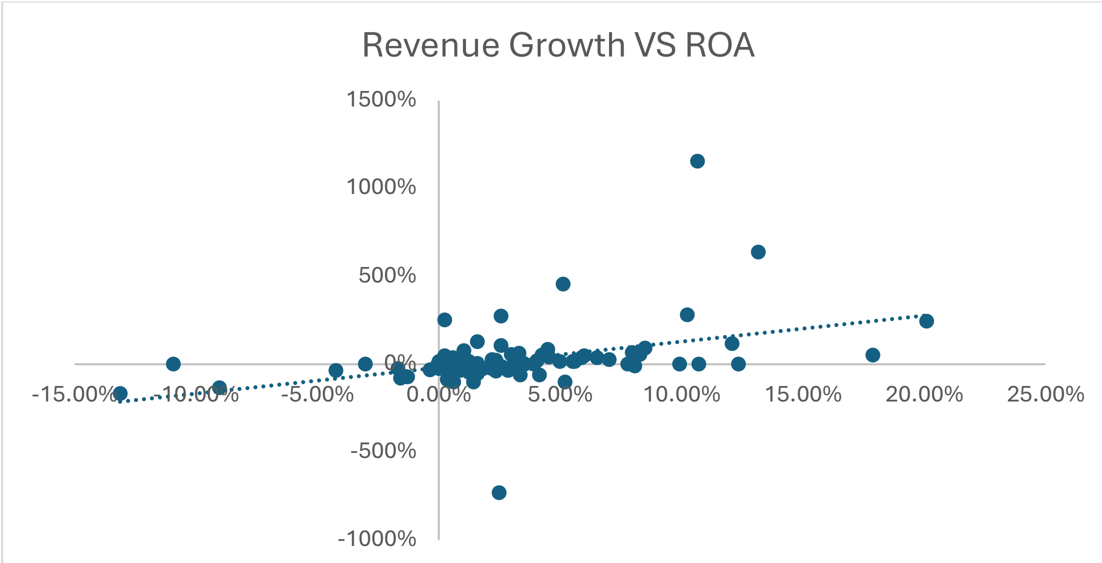
Firm Size has very little variation (mean = 22.11; median = 22.33), and the effect of Firm Size on ROA is not statistically significant (coefficient = 0.005; p = 0.339). Although larger firms have the ability to realize economies of scale, there is no support for the significance of size on asset profitability.



The scatter diagram shows that there is a very weak and almost flat negative correlation between the size of the firm and ROA. The trend line is slightly inclined towards the negative direction but is almost a horizontal line, which is a very obvious indication of the absence of effect. The points are scattered all over the size scale (19-23), and there are similar levels of profitability for all sizes of firms. Small and large firms have both positive and negative ROA. This means that firm size is not a significant determinant of asset profitability.

Revenue Growth

Revenue Growth has high variability, with a maximum of 11.53, and a significant impact on ROA. The positive coefficient (0.010; $p = 0.001$) indicates that firms with higher revenue growth perform better in terms of asset profitability. The increasing trend in the graph indicates that growth is responsible for enhancing the efficiency of asset utilization.



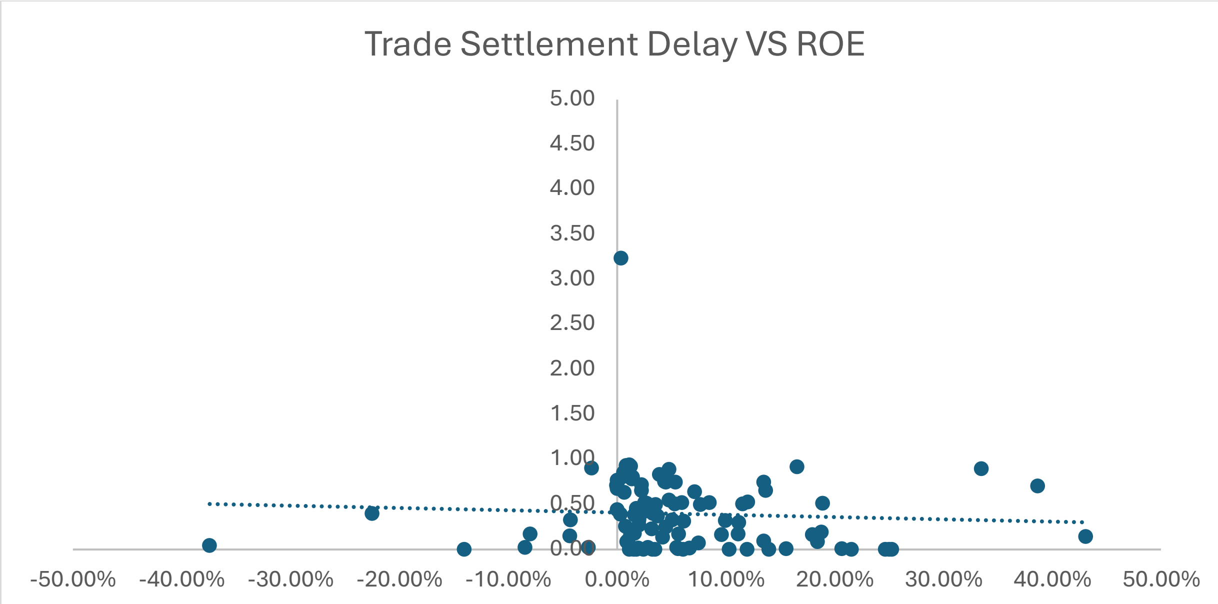
From this scatter diagram, there is a moderate positive correlation between revenue growth and ROA. From the positive trend line in this scatter diagram, it is clear that those firms that experience high revenue growth perform better in terms of asset profitability. Although most firms are scattered around the average level of revenue growth, the outliers depict high revenue growth, which is related to high ROA.

Return on Equity (ROE)

Return on Equity (ROE) is a measure of profitability from a stockholder's perspective. The regression equation explains approximately 21.4% of the variation in ROE ($R^2 = 0.214$), which is a stronger explanation than that of the regression equation for ROA.

Trade Settlement Delay

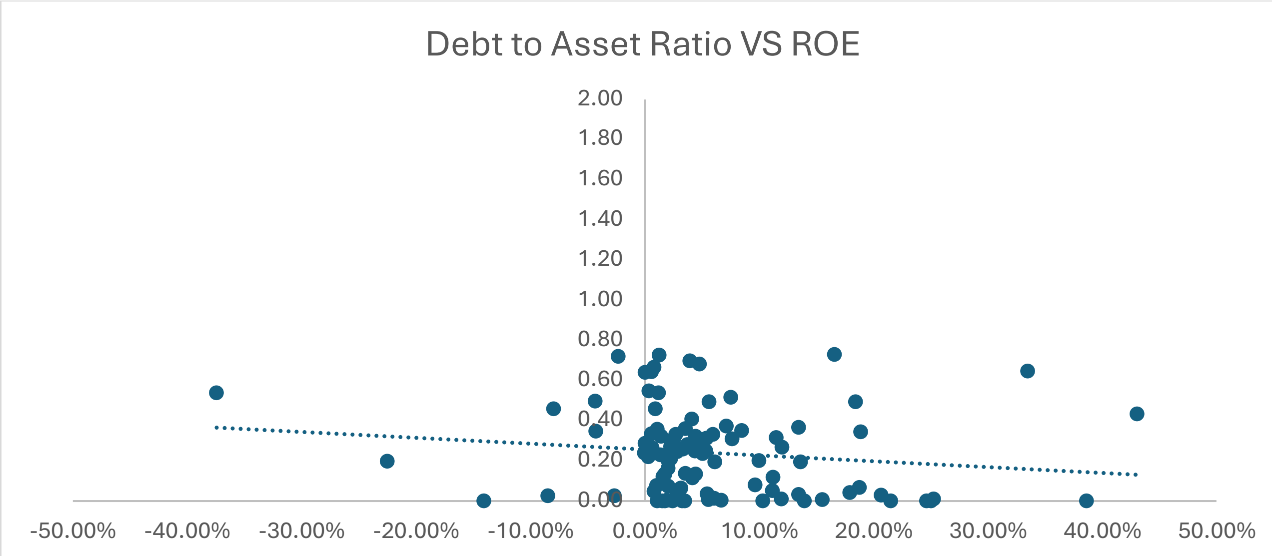
Although there is variation in trade settlement delays (mean = 0.40), the regression coefficient (0.012) is statistically insignificant ($p = 0.227$).



From the scatter plot, it can be seen that there is a very weak negative correlation between trade settlement delay and Return on Equity (ROE), as indicated by the slightly declining trend line. The majority of the data points are clustered around the low values of trade settlement delay and moderate values of ROE. There are some outliers in the ROE variable, which include some extremely high and low returns, but none of them indicate any particular pattern in relation to trade settlement delay. The high variability of the data points suggests that trade settlement inefficiencies do not have any particular impact on lowering returns to shareholders.

Debt-to-Assets Ratio

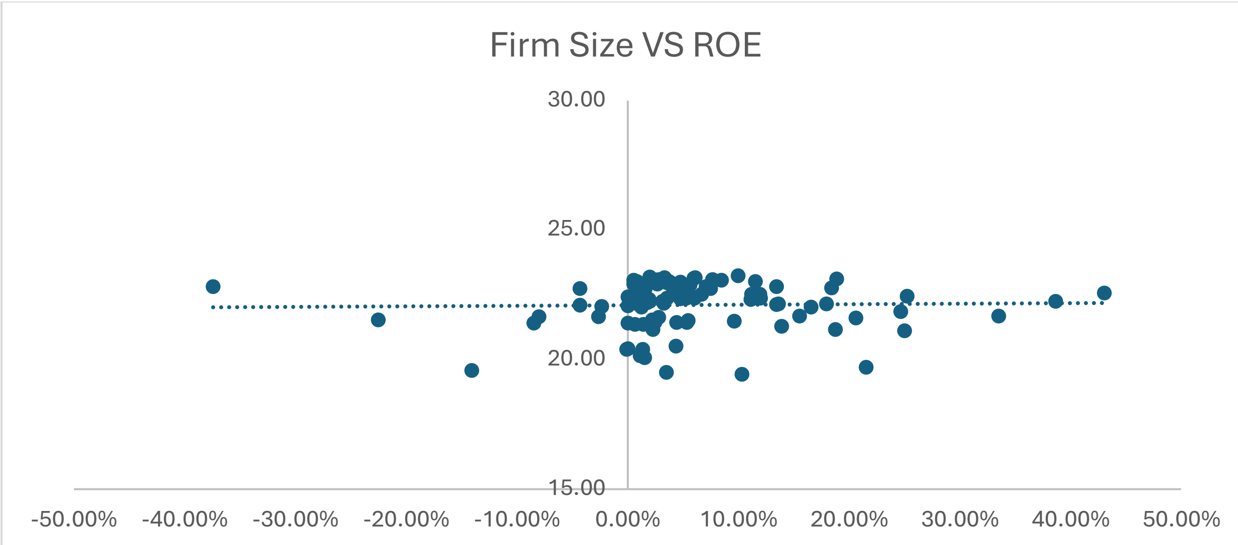
Leverage is a highly significant negative factor in ROE. The coefficient of -0.183 ($p = 0.004$) indicates that higher debt is significantly harmful to shareholder returns. As ROE is highly variable between -0.37 and 0.43, leverage magnifies financial risk and equity profitability as a factor that is susceptible to unfavorable outcomes.



In this graph, the negative correlation between the variables "leverage" and "ROE" can be seen. The downward-sloping trend line shows that firms with high leverage have low ROE. Firms with high leverage are plotted around the lower values of ROE, while firms with lower leverage are plotted around relatively better-performing equity. There is some variation, but the overall trend is downward. This suggests that too much leverage can be detrimental to shareholder returns.

Firm Size (Log of Total Assets)

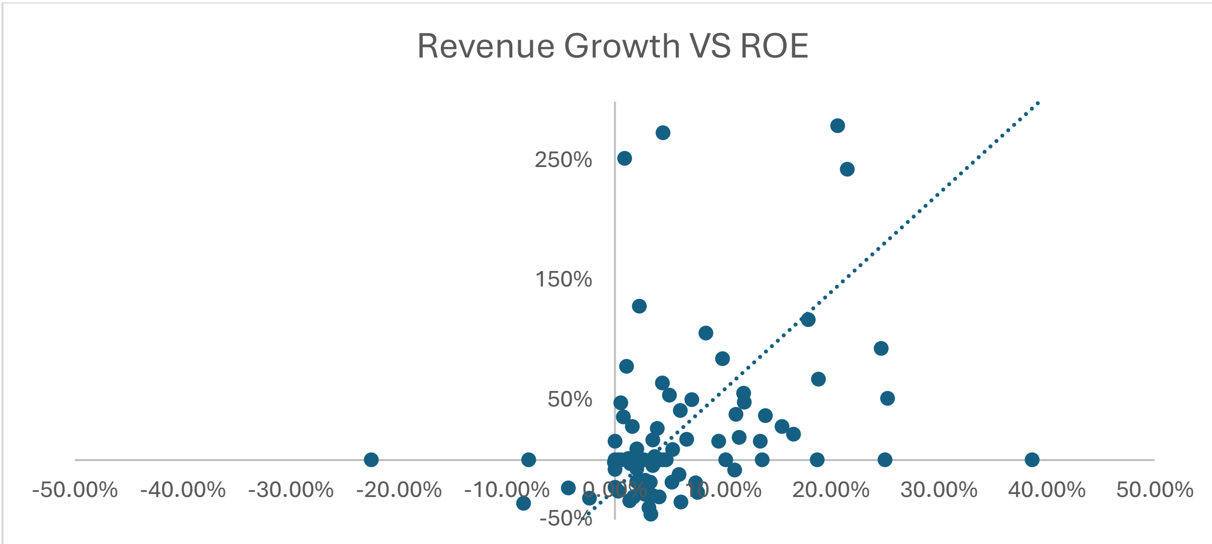
Firm Size is positively but insignificantly related to ROE (coefficient = 0.018; p-value = 0.122). Even though large firms can benefit from market power and synergy, there is no statistical evidence of its significance in explaining equity returns.



The scatter diagram reveals a very weak and almost flat correlation between the size of the firm (log of total assets) and ROE. The trend line is almost flat, which indicates that the size of the firm does not have any influence on equity profitability. Small and large firms have a large variation in ROE, which indicates that profitability is not size-dependent.

Revenue Growth

Revenue Growth is significantly related to higher ROE. The positive coefficient of 0.030 (p-value = 0.000) indicates that firms with high revenue growth outperform in equity returns. Taking into account the mean ROE of 0.06 and the median of 0.04, revenue growth is highly significant in enhancing equity profitability.



This graph indicates a strong positive correlation between revenue growth and ROE. The trend line is steeper than the other models. The firms that experience high revenue growth perform better in terms of equity returns. Although there are some exceptions and fluctuations, the positive trend is clear and significant. This indicates that growth is highly important for enhancing equity returns.

Overall, the analysis reveals that leverage and revenue growth are the most significant variables affecting the company's profitability. Leverage has been found to impact both ROA and ROE negatively, which indicates the potential risk associated with the overuse of leverage. At the same time, revenue growth has been found to positively influence profitability, which emphasizes the importance of growth strategies.

The trade settlement delay and the size of the company are statistically insignificant, indicating that inefficiencies in business operations and company size, per se, cannot explain the differences in the profitability of brokerage companies.

This indicates that the null hypothesis is not rejected, while hypothesis 1 does not have enough data to be supported.

3.5 Recommendations and Implications

3.5.1 Policy and Regulatory Implications

Despite the statistically insignificant relation, the regulatory authorities should focus on prioritizing the infrastructure of the settlement. Although it seems that the direct impact of settlements is limited, proper efficiency is still essential for client confidence. Making the settlement cycle go from T2 to T1, as they are discussing doing, would be perfect get lower liquidity stress by getting liquid funds faster. This would help reduce the dependency on the external borrowing that some firms are so dependent upon, especially if these firms are of smaller caliber or with liquidity constraints.

3.5.2 Implications for Brokerage Firms

From the above regression results, we have concluded that trade settlement delays have no impact on the Return on Equity ($p = 0.227$) and the Return on Assets ($p = 0.680$) of the brokerage firms. Even though the values are positive in nature, the impact of trade settlement delays on the Return on Equity and the Return on Assets is not significant. Hence, we have concluded that trade settlement delays have no impact on the profitability of the brokerage firms.

The debt asset ratio has a strong negative impact on the Return on Equity and the Return on Assets. This indicates that a high debt asset ratio has a significant impact on the profitability of the firms. Revenue growth has a strong positive impact on the firms. This indicates the significance of growth and revenue generation for the firms.

3.6 Summary and Conclusions

This study was conducted in order to examine and understand how trade settlement delays affect the brokerage houses of Bangladesh and their financial performance. To be able to conduct and analyze the study, the financial statements of ten years were taken from ten brokerage houses in Bangladesh. Since no data were available about the settlement, proxy-based quantitative approaches were used for the study. The study calculated the firm's average ROA, ROE, liquidity stress, firm size, debt-to-asset ratio, revenue growth, and used the values in order to capture the mechanisms that are financially linked to the performance of the brokerage firms.

The findings from this analysis provide insufficient evidence to support the fact that settlement delay is a risk that is persistent and structural, instead of being a short-term or small convenience for the firms. The study also finds, through analysis, that when it comes to the financial performance of brokerage houses have a statistically insignificant relationship with settlement delays.

All in all, it can be said that the evidence gathered through this study was insufficient to support hypothesis 1 presented in the study, and proves that the null hypothesis is not rejected.

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