THE EFFECT OF ESG ON STOCK LIQUIDITY IN MALAYSIA

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BACHELOR OF ECONOMICS (HONOURS)
GLOBAL ECONOMICS

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF ACCOUNTANCY AND MANAGEMENT
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BY

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A research project submitted in partial fulfillment of the requirement for the degree of

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DECLARATION

We hereby declare that:

(1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the research project.

(4) The word count of this research report is 9628.

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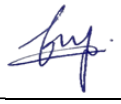
1. Chek En Ye	2003292	

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DEDICATION

Thanks to Dr Liew Ping Xin as my Final Year Project Supervisor, willing to scarified her precious time to helping and guiding me in completing this research during her maternity leave.

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LIST OF ABBREVIATIONS

CMM - Capital Markets Malaysia

CSR - Corporate Social Responsibility

CGSCORE - Governance Pillar Score

ENSCORE - Environment Pillar Score

ESG – Environmental, Social, and Governance

GRI - Global Reporting Initiative

LEV – Leverage

ROA – Return of Asset

SC - Securities Commission Malaysia

SL – Stock Liquidity

SME - Small and Medium-sized Businesses

SOSCORE - Social Pillar Score

SRI - Socially Responsible Investing

TRESGS - ESG score

Preface

The purpose of this study is to investigate the effect of ESG on stock liquidity in Malaysia. Besides that, provide the effective recommendations and implications to the governance and companies based on the findings results.

In this research, panel data analysis is used to investigate the models. The data was cover with a total of 31 publicly listed companies in Malaysia, over a 13-year sample period from 2010 to 2022, in the form of panel series data. Moreover, random effects model is the most suitable and effective model in presenting the relationship between ESG and stock liquidity.

Abstract

In the most recent years, a wider trend towards sustainable and ethical business behavior is influenced in the growing importance of Environmental, Social, and Governance (ESG) standard in the business and investment sectors. This had led to asset managers and institutional investors complying with ESG factors as become a part of investment strategies. When companies increasingly embark on ESG compliance, the expectation is that these expenditures will result in better stock returns and enhance liquidity for the firms' stocks. While this concerns have been only examined in those countries with more developed markets such as the China (Chen et al., 2022, Wang et al., 2023, Chen et al., 2023, Zhang et al., 2024), Brazil and Germany (Svanes & Øyaas, 1970), United State (Tazo & Grabovac, 1970), Indonesia (Primasari et al., 2022), or Globally (Krueger et al., 2021, Shakil, 2020), however, there is still unidentified actual result in the Malaysian stock market. Therefore, this study aims to close the gap in the literature by providing evidence and insights of the relationship between ESG score and stock liquidity in Malaysia. This study implied a total of 31 publicly listed companies in Malaysia, over a 13-year sample period from 2010 to 2022, in the form of panel series data. The main findings identify that ESG score and each ESG factors have a significant negative relationship to stock liquidity. Moreover, this study found that Malaysia' ESG is still in an early stage as there is lack of ESG compliance companies in Malaysia market which cause constraint in the liquidity. Finally, this study points out that governance acts as an important role to this problem as government should encourage and enforce the adoption of ESG principles to extend the pool of ESG compliance companies, which then help to increase the liquidity in the market.

Keywords: Environmental, Social, and Governance, ESG Score, Stock Liquidity, Panel Series Data, Malaysian Stock Market.

CHAPTER 1: INTRODUCTION

1.0 Introduction

This section presents the background of Environmental, Social, and Governance (ESG), and the importance of ESG in our current economy trend. Besides, the objective of the study, research problem and hypothesis will also provide in this section.

1.1 Research Background

Environmental, Social, and Governance (ESG) is a framework that is utilized to evaluate how well an organization performs on a range of ethical and sustainable business challenges (Mathis & Stedman, 2023). It also offers a method of evaluating business opportunities and risks in those domains. ESG investing is the practice of some investors in the capital markets using ESG criteria to assess firms and assist in determining their investment plans. ESG programmed aim to position companies for long term success through ethical corporate governance and responsible business strategies. There are three criteria under the ESG component, environmental, social, and governance. Environmental aspects involve an organization's entire environmental impact as well as the opportunities and potential risks that arise from environmental challenges, like climate change and efforts to protect natural resources. Example of environmental factors are waste management, air and water pollution, biodiversity loss, natural resource depletion and deforestation. Social aspects concern how an organization handles various social groupings such as customers, employees, and supplier. Example of social factors are workplace environment, customer satisfaction levels, privacy and data protection regulations, and equitable treatment of suppliers and customers. Governance aspects analyze the company its internal controls and

procedures for complying to regulations, industry standards, and corporate policies. For example, company leadership and management, executive compensation policies, financial transparency and business integrity, ethical business practices, and rules on corruption.

A wider trend towards sustainable and ethical business practices is reflected in the growing importance of Environmental, Social, and Governance (ESG) criteria in the business and investment sectors. ESG has a long history, and as it continues to spread around the world, more people are getting aware of how businesses affect both the environment and society. Environmental consciousness first emerged in the early 1970s. Companies felt compelled to reveal their environmental impact as worries about pollution, resource depletion, and other environmental issues grew (Team Iris Carbon, 2023). During this period, the idea of Corporate Social Responsibility (CSR) began to gain influence, encouraging companies to take into account how their business practices affect the environment and society. Moving on to 1980s, Socially Responsible Investing (SRI) gained popularity as investors started to take into account the social and ethical conduct of the businesses they were investing in, in addition to financial returns (Team Iris Carbon, 2023). The priorities of investors began to change, which had an impact on company reporting and behavior. Up to the present, ESG reporting is now an essential component of business strategy. Businesses are compelled to take ESG seriously as a result of demands for increased transparency from consumers, investors, and regulators. The task ahead involves more standardization, better data quality, and even deeper integration of ESG factors into financial reporting.

According to Bloomberg Intelligence Head of ESG (2021), over USD 30 trillion of total global investment has been invested in ESG funds. The importance of ESG factors is being highlighted by governments and regulatory institutions across the globe. At the moment, there are 29 countries including the United State, United Kingdom, Singapore, Malaysia, Hong Kong, and Philippines, maintain some form of mandatory ESG disclosure regulation (Team Stacs Nexus of ESG, 2024). This information is

gathered by the European Corporate Governance Institute. Corporate strategies are becoming progressively more oriented towards implementing ESG principles. This covers initiatives aimed at lowering carbon footprints, enhancing diversity and inclusion, strengthening labor laws, and advancing moral leadership.

Besides that, ESG factors are becoming a part of investment strategies for asset managers and institutional investors. Recently, there has been a successful integration of environmental, social, and governance (ESG) considerations into the financial mainstream and seen by many investors as important to risk management and financial performance. There is growing pressure from various stakeholders, including customers, employees, and communities, for companies to operate sustainably and responsibly. In context with this, ESG ratings are being assigned to publicly traded companies more frequently, and a substantial body of research has been conducted to examine the effects of these ratings on stock liquidity, stock performance and investing decisions. However, the results of the most current research continue to be contradictory and ambiguous. Based on previous studies, numerous studies stated that ESG disclosure has a significant positive relationship with stock liquidity which is a good sign to the firms (Chen et al., 2022, Krueger et al., 2021, Wang et al., 2023, Chen et al., 2023, He et al., 2023, Tazo & Grabovac, 1970, Zhang et al., 2024, and Engelhardt et al., 2021). ESG data performance increases stock liquidity by lowering corporate risk and strengthening stakeholder support. On the other hand, Chang et al. (2019) claimed that a significant negative relationship is found between stock liquidity and the corporates' CSR scores. However, in the study of Svanes and Øyaas (2021), it depends on how highly the sustainability variables scored, the impact of the sustainability variables on stock liquidity could be either positive or negative.

On the relationship between ESG and stock returns, Liu et al. (2023) study on Japan finds that there is a positive association between the firms' ESG performance and stock returns during the COVID-19 pandemic. Conversely, Bhattacharyya and Rahman (2020) found that there is a negative relationship between CSR and stock return in India.

This indicate that increasing in the expenditure on sustainability activities will lower the firm's stock return.

Meanwhile in Malaysia, it has demonstrated a growing level of engagement and interest in the ESG area. Malaysia has taken action to incorporate ESG factors into its legal system. The Sustainable and Responsible Investment (SRI) Sukuk framework was introduced by the Securities Commission Malaysia (SC) in 2014 with the aim of promoting the integration of sustainability practices among capital market participants (Securities Commission Malaysia, 2014). As increasing number of companies are encouraged to reveal their ESG performance, the country's stock exchange, Bursa Malaysia has guidelines on ESG reporting for those listed companies. The Sustainability Reporting Framework (SRF) was established by the SC in 2018 as an optional standard for listed companies. In accordance with global standards such as the Global Reporting Initiative (GRI), the SRF pushes businesses to include pertinent ESG data in their annual reports (Team Softech360, 2023). Bursa Malaysia mandated ESG reporting for publicly listed companies in 2016. By following the use of the GRI standards, listed companies remain voluntary whether to adopt specific reporting frameworks. GRI is the most popular and widely used reporting in Malaysia (Team Softech360, 2023). On the other hand, the Malaysian government, Capital Markets Malaysia (CMM) launched a Simplified ESG Disclosure Guide (SEDG), a new ESG reporting framework with an emphasis on small and medium-sized businesses (SMEs) (Capital Markets Malaysia, 2023). For SMEs to have better accessibility to ESG data and information, the SEDG simplifies and unifies the numerous complicated local and international frameworks related to ESG. The Securities Commission Malaysia is dedicated to making sure that all the Malaysia companies, large and small, have the ability to comply with international ESG regulations.

1.2 Problem Statement

According to the previous studies, most studies have been done on the effect of ESG on firm performance (Masliza & Wasiuzzaman, 2021, Lapinskienė et al., 2023, Arx & Ziegler, 2008, Tsai & Wu, 2021, Fathonya et al., 2020, and Cho et al., 2019), however there are only few studies are available to examine the effect of ESG on firm liquidity. Even though there are studies related to ESG and liquidity, these studies are mainly done for the China (Chen et al., 2022, Wang et al., 2023, Chen et al., 2023, Zhang et al., 2024), Brazil and Germany (Svanes & Øyaas, 1970), United State (Tazo & Grabovac, 1970), Indonesia (Primasari et al., 2022), or Globally (Krueger et al., 2021, Shakil, 2020). Therefore, it may not be applicable to be generalized to Malaysia in view of the fact that its idiosyncratic stock market structure. Compared with other countries, Malaysia has a total of 38 signatories in institutional investors, among the list there some main public institutional investors such as Kumpulan Wang Persaraan (KWAP), Employees Provident Fund (EPF), Khazanah Nasional Berhad, Amanah Saham Nasional Berhad (ASNB), Lembaga Tabung Angkatan Tentera (LTAT), and Lembaga Tabung Haji (Institutional Investors Council Malaysia, n.d.). Furthermore, the Malaysian stock market is also characterized by low retail investor participation. According to Nambiar and Jalil (2024), Malaysia's stock market was more favor by the aging baby boomers which is aged around 60 and 78, in contrast to some other countries, the retail investor bases are mostly diversify in a range of age groups. As there is a unique characteristic in demographic factors, this would create a new patterns and desires of investment which the older investors and younger investors tend to have different risk hold level and investment plans. Compared to other countries' stock market, younger generations were occupied a large number and was highly active in participate in the market.

Stock liquidity refers to the rate at which stock shares can be purchased or sold without significantly affecting the stock price. Low liquidity stocks can be challenging to sell and could lead to suffer a larger loss. In trading financial market, liquidity indicate that

the presence of willing buyers and sellers who are willing to exchange a specific number of securities at the stated price without any delay (Naik & Reddy, 2021). It is important that the presence of stock liquidity, which it helps a trader able to determine the amount of the returns and thereby aid in constructing appropriate trading strategies (Naik & Reddy, 2021). It acts as an important role as investors need to consider the liquidity before every position is opened or closed due to lowered liquidity often corresponds to higher risk (Team IG Group Analyst, n.d.). In 2007, the global financial crisis has caused a sharp collapse in the European stock prices and economic activity which harmed company performance and investor returns (Bessler et al., 2021). Besides that, a sharp decrease in the value of assets occurs, financial institutions face a shortage of liquidity, individuals and companies struggle to make their loan payments (Kenton, 2023). According to Naik and Reddy (2021), decreased liquidity levels has a negatively impact on the economic growth during the crisis. As a result, research on stock market liquidity gained attraction after the crisis and demonstrated the importance of market liquidity dynamics for the creation of public policy and the making of investment decisions.

When companies embark on the journey of investing in ESG, it is generally hoped that these investments would turn into better stock returns and better liquidity for the firms' stocks. While these questions have been investigated in other more developed markets such as the China (Chen et al., 2022, Wang et al., 2023, Chen et al., 2023, Zhang et al., 2024), Brazil and Germany (Svanes & Øyaas, 1970), United State (Tazo & Grabovac, 1970), Indonesia (Primasari et al., 2022), or Globally (Krueger et al., 2021, Shakil, 2020), the question on whether such investment actually result in better stock liquidity in the Malaysian stock market remains unanswered. Motivated by such lack of study done on this area of the capital market, this study thus aims to close the literature gap by giving empirical evidence and insights of the relationship between ESG score and stock liquidity in Malaysia.

1.3 Research Questions

Given the lack of research on the relationship between ESG scores and stock liquidity, coupled with the scarcity of research done on Malaysia, this study thus aims to answer the following research questions:

Research Question 1: Does ESG score have a significant relationship with stock liquidity in Malaysia?

Research Question 2: Which component in ESG has the most significant relationship with stock liquidity in Malaysia?

1.4 Research Objectives

According to the research questions, our research objectives was construct as below:

Research Objective 1: To investigate the significant relationship between ESG score and stock liquidity in Malaysia.

Research Objective 2: To investigate which component in ESG has the most significant relationship with stock liquidity in Malaysia.

1.5 Hypotheses of the Study

The below hypotheses are constructed in order to identify the relationship between ESG score and stock liquidity in Malaysia.

H0: The ESG score do not have a significant relationship with the stock liquidity.

H1: The ESG score have a significant relationship with the stock liquidity.

1.6 Significance of the Study

The significance of the study is breakdown into two section which are academic significance and practical significance. On the academic spectrum, in the context of Malaysia, this study is to investigate the significant relationship between environmental, social, and governance (ESG) scores and stock liquidity. While the concerns on issues related to ESG are becoming more and more popular in the global economy, there has not been much focus on how ESG affect stock liquidity in the Malaysian Market. In the existing literature, the relationship between ESG factors and stock liquidity has been extensively studied. However, most of the studies predominantly focus on globally and regionally such as China (Chen et al., 2022, Wang et al., 2023, Chen et al., 2023, Zhang et al., 2024), Brazil and Germany (Svanes & Øyaas, 2021), United State (Tazo & Grabovac, 1970), Indonesia (Primasari et al, 2022), and Global (Krueger et al., 2021, Shakil, 2020), which creating a significant gap in the literature about the Malaysian market. Even though there is existing study on Malaysia's ESG, it is investigated on the relationship between ESG to firm performance (Masliza & Wasiuzzaman, 2021). Therefore, this study is aimed to close the literature gap by giving empirical evidence and insights of the relationship between ESG score and stock liquidity in Malaysia, hence, expanding a better understanding of the dynamics of sustainable investing in the area.

On the practical side, with the analysis of relationship between ESG score and stock liquidity, this study delivers actionable insights that are relevant to various stakeholders such as government organizations and corporations. From the perspective of corporations, our study attempts to examine the elements of ESG and their individual

effects on stock liquidity. By determining which component in ESG have the most significant relationship to stock liquidity, companies can obtain important insights for their investment decisions. Given with this understanding, companies are able to distribute resources effectively to those areas that maximize their ability to augment liquidity. Hence, companies are able to enhance their financial performance and operations which contribute to long term sustainable growth.

While from the perspective of government, our study offers more precise advice and guidance to policymakers in implementing efficient government policy formulations by demonstrating the connection between ESG score and stock liquidity. Governments can impose policies that encourage companies to adopt sustainable practices and, in turn, advocate economic durability and stability. Moreover, governments would be able to accelerate the transition to a more sustainable economy, which will benefit the environment and society.

1.7 Chapter Layout

This final year report is structured in the following way. The first Chapter provides an overview of ESG and outlines the research question, research objectives and significance of the study.

Following to the Chapter 2, it presents an overview of the literature review based on the dependent and independent variables, and relevant variables that discusses in the existing studies.

Moreover, in Chapter 3 will address the theories that relevant in this study such as signaling theory, stakeholders' theory, and agent theory. The chapter also give a details information about the source of data and methodology in the study. This includes stock liquidity (*SL*) as dependent variable, environment pillar score (*ENSCORE*), social pillar

score (*SOSCORE*), governance pillar score (*CGSCORE*), and ESG score (*TRESGS*) as independent variables. Besides that, control variables will also be outline such as size (*size*), return of asset (*ROA*), leverage (*Lev*), profitability (*profitability*), and return index (*RI*). Additionally, the chapter will also explain the measurement use for indicating stock liquidity. Finally, the model specifications in the study will provide in end of this chapter.

Chapter 4 discusses the study's findings and provides an insight and interpretation of these outcomes. Besides, the chapter will illustrate the descriptive statistics and correlations test between independent variables. Finally, in the end of the chapter will provide the outcome result of the model specifications that constructed in Chapter 3.

This study is concluded in Chapter 5, which summaries the key findings and discusses their implications. The chapter will also list restrictions derived from the findings of the investigation.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

In chapter 2, section 2.1, discusses the literature on Socially Responsible Investing. Next, section 2.2 presents the literature on Environmental, Social and Governance, along with its measurement. While in Firm-Level stock liquidity will be discusses in section 2.3. Section 2.4 will explain the control variables that included in this study. Lastly, the theoretical framework and hypothesis development will be discussing in section 2.5 and 2.6, respectively.

2.1 Socially Responsible Investing

Socially Responsible Investing (SRI) is mainly concerned with investments made by investors in companies that share their social, ethical, and environmental values. For instance, it doesn't include companies that produce specific goods or earn profits from environmentally harmful activities. SRI emphasizes the values of the investor throughout the financial performance of the company. In contrast, ESG investing strategies priorities high corporate conduct standards and frequently take company performance into account along with ESG factors. Ankiewicz (2021) shows that using social responsibility as a guide to investment decisions is substantially more advantageous. The results of the analysis demonstrated the value of being socially conscious and involved in charitable and social initiatives, as these factors increase investment attraction (Ankiewicz, 2021). Same with the study of Berry and Junkus (2012), discover that investors would rather reward companies with generally positive social policies than exclude companies with specific policies or products. Kempf and Osthoff (2007) examine the relationship of socially responsibility and portfolio

performance found that investors can benefit from knowing historical SRI ratings. High abnormal returns can be achieved by using a straightforward trading strategy based on publicly available data. However, different finding from Revelli and Viviani (2014) show that investing in SRI has no true costs or benefits on a global basis, but that the performance level is clearly dependent on the methodological decisions researchers make when examining the issue or the capacity of SRI fund managers to generate results.

2.2 Corporate Social Responsibility

Corporate Social Responsibility (CSR) is a management concept or business model that intention to improve the society and environment through the business operation. CSR is one of the strategies that mostly used by the firms which it promotes a positive brand image to the public. Environmental impacts, ethical responsibility, philanthropic endeavors, and financial responsibilities are some common categories in CSR. CSR was further defined as the corporates' capital of allocation, which revealed how an organization's social behaviour might fulfil societal expectations of the organization (Wood, 1991, as cited in Wang, 2011b). In the trend of globalization, the concept of CSR has gained attention in the global capital markets. Lots of international organization evaluated a company's socially responsible investment (SRI) in society in order to assess CSR as a new corporate value (Wang, 2011b). Based on the studies that had reviewed, most of the studies concluded that CSR performance is positively link to firms' financial performance and firms' value (Arx & Ziegler, 2008, Harjoto & Jo, 2014, Tsai & Wu, 2021, Anggraini, 2015, Cho et al., 2019). Based on Harjoto and Jo (2014), CSR initiatives will increase firm value while lowering analyst dispersion, stock return volatility, and cost of equity. Besides that, Tsai and Wu (2021) provide evidence to prove that financial performance and CSR performance have a positive relationship, although it varies depending on the CSR dimensions and changes between non-crisis and crisis situations. Same with Wang (2011b), study the short-run and long-

run stock returns relative to those of benchmark portfolios show that company's stock performance is in conjunction with the market and its expansion portfolios, is positively impacted when it tries to fulfil its corporate social responsibility. In contrast, Bhattacharyya and Rahman (2020) and Kim et al. (2014), claimed that CSR performance is negatively related with firms' stock returns supports by the perspective view of shareholders.

2.3 Environmental, Social, and Governance

2.3.1 Measurement

Firm's ESG performance could be measure by several sources such as Thomson Reuters' database (Luo, 2022, Tazo & Grabovac, 1970); Bloomberg ESG rating scores (Chen et al., 2022, Chen et al., 2023, Lapinskienė et al., 2023); Refinitiv Eikon database (Svanes & Øyaas, 2021, Engelhardt et al., 2021, Shakil, 2020); Sino-Securities Index (Wang et al., 2023, Li et al., 2022); Limkriangkrai et al., 2016; Morgan Stanley Capital International (MSCI) (Shanaev & Ghimire, 2022), and so on. In this study, we follow the previous literature on global market (Svanes & Øyaas, 2021; Engelhardt et al., 2021, Shakil, 2020), using the Refinitiv ESG rating scores as the evaluation of a firm's ESG disclosure. Based on a company's performance, a score is given to each ESG factor. Three "pillar scores" are then created by rolling these category scores. Refinitiv examine the rating and scoring of firms overall ESG performance, it is calculated by aggregating each pillar scores. Refinitiv's ESG score range from 0 (worst) to 100 (best), for example, 0-19: very poor; 20-39: poor; 40-59: average; 60-79: good; 80-100: excellent (KnowESG, 2023). The three main categories of environment, social, and governance comprise the Refinitiv ESG scores.

2.3.2 ESG and Firm Performance

According to research by Nollet et al. (2016), there is a substantial inverse relationship between return on capital and corporate social performance in developed markets. In a different study, Buallay (2019) looks at banks in developed and developing nations and finds varying conclusions about how ESG affects performance. Performance is found to be positively impacted by environmental disclosure, but performance and corporate social responsibility disclosure are found to be negatively correlated. However, a study conducted by Buallay et al. (2020) on businesses in the Middle East and North Africa (MENA) region discovered that ESG had a positive effect on performance. Same with the study that examine in Malaysia, it is support that there is a significant positive relationship between Malaysia's ESG score and firms performance (Masliza & Wasiuzzaman, 2021). A company's sustainability initiatives can enhance its ability to manage resources more effectively, conduct business as usual, and address societal problems (Masliza & Wasiuzzaman, 2021).

2.3.3 ESG and Volatility

The ESG performance of companies is highly valued by stakeholders, and any unresponsive ESG actions could negatively impact the financial performance of the companies and increase their stock price volatility. Based on the previous studies, firms with high ESG performance experience less risk in term of financial and crash in different industry sectors (Benlemlih et al., 2016; Albuquerque et al., 2019; Chollet & Sandwidi, 2018). According to Albuquerque et al. (2019), CSR significantly reduces systematic risk. Companies with a high CSR experience a lower equity cost (Albuquerque et al., 2019). Benlemlih et al. (2016) discover that while the impact of environmental and social disclosures on systematic risk is not significant, they have significant adverse effects on overall risk and idiosyncratic risk. The adverse effect of social and environmental disclosures on overall risk is brought about by a company's

corporate transparency, which enhances stakeholders' perception and confidence (Benlemlih et al., 2016). Trust among stakeholders is essential for reducing a firm's overall risk. Chollet and Sandwidi (2018) discover a significant negative relationship between financial risk and social and governance performance. Effective governance and enhanced environmental practices of businesses are the reasons behind the negative impact of social and governance performance on risk (Chollet & Sandwidi, 2018).

2.3.4 ESG and Liquidity

Stock liquidity is a key metric for assessing the quality of the capital market, which in turn reveals how well companies are managed and able to develop sustainably. When non-financial information is disclosed, like in the case of ESG disclosure, it is also considered a positive signal that others may take into consideration when making decisions. Investors may respond favorably to a company's disclosure of non-financial data regarding its social, environmental, and corporate governance practices. As a result of attracting stakeholders' attention, the company's sustainability initiatives will increase demand and accelerate growth for the company (Buallay, 2019). Moreover, stock market value is a reflection of the value that corporate ESG performance creates for companies (Ramchander et al., 2011). The potential for stock liquidity to reflect the economic impact of a company's ESG performance is present.

2.4 Firm-Level Stock Liquidity

2.4.1 Stockholder Base

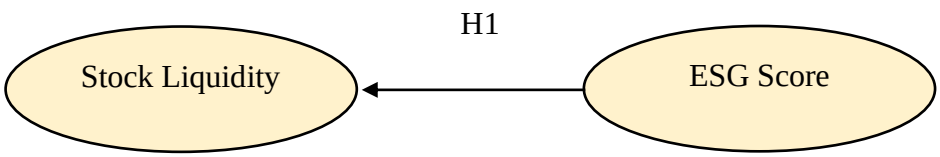
The liquidity of a company is largely determined by the composition of its stakeholder base. Previous studies have emphasized how different investor types affect liquidity

levels. Because professional investors trade, institutional ownership, for example, tends to increase liquidity (Brennan & Subrahmanyam, 1996). On the other hand, liquidity may be hampered by concentrated ownership by insiders or block holders (Huddart & Lang, 2001). Furthermore, liquidity dynamics are also influenced by the presence of retail investors and how they trade (Chordia et al., 2002). Comprehending the effects of varying stockholder compositions is crucial to understanding the differences in liquidity among firms.

2.4.2 Performance – Tobin's Q

A popular indicator for evaluating company performance is Tobin's Q, which calculates the correlation between an organization's market value and its asset replacement costs. Numerous research has examined at the connection between Tobin's Q and stock liquidity, offering important insights into how liquidity affects business performance. Tobin's Q indicates that research indicates a positive correlation between improved firm performance and higher stock liquidity (Amihud & Mendelson, 1986). Increased liquidity has a beneficial effect on investment decisions and company value by facilitating more effective price discovery and lowering the cost of capital (Boudoukh et al., 2007). Complex analysis is necessary since the relationship between liquidity and Tobin's Q can change based on a number of contextual factors, including business characteristics and market conditions.

2.5 Theoretical Framework



2.6 Hypothesis Development

H1: There is a relationship between ESG score and stock liquidity in Malaysia.

Based on the articles that had review, there is a mixed result on the relationship between ESG score and stock liquidity, as a number of the studies concluded that there is a significant positive relationship between ESG score and stock liquidity. According to (Chen et al., 2022; Krueger et al., 2021; Wang et al., 2023; Chen et al., 2023; He et al., 2023; Tazo & Grabovac, 1970; Engelhardt et al., 2021; Zhang et al., 2024), ESG data performance leads to a higher stock liquidity by decreasing the risk of corporate and building up stakeholders' support (Wang et al., 2023). The better the ESG score the higher the stock liquidity (Chen et al., 2022). Whereas Svanes and Øyaas (2021) stated that depending on the sustainability variables' scores and the shape of their relationship on market liquidity, the impact on the latter could be either positive or negative. However, in a global perspective view, Shakil (2020) show that there is an adverse influence of ESG on stock price volatility. Liu et al. (2023) study on Japan finds that there is a positive association between the firms' ESG performance and stock returns during the COVID-19 pandemic.

By contrast, several studies have a opposite conclusion and claimed that ESG score (Shakil, 2020) and CSR score (Bhattacharyya and Rahman, 2020; Kim et al, 2014) have an adverse relationship with stock return which supports by the principle-agent theory. Besides, the research of Luo (2022) which investigate the impact of the UK's ESG performance on stock return, concluded that compared to those firms with higher ESG performance, lower ESG performance firms generate higher returns. The result is aligned with Brammer et al. (2006) that it proves mandatory CSR spending lowers the stock returns for companies, supporting the "shareholders" expense argument. Excessively high or low CSR performance could cause investors to react negatively (Wang et al., 2011a).

However, there are few neutral empirical evidence proves by the past research. Svanes and Øyaas (2021) stated that depending on how highly the sustainability variables scored and how their relationship to market liquidity was shaped, the impact on liquidity may be positive or negative. Besides, Fathonya et al. (2020), claimed that stock return is unaffected by CSR factors.

CHAPTER 3: DATA AND METHODOLOGY

3.0 Introduction

The results and discussions from the study of Malaysia's yearly panel data analysis from 2010 to 2022 are presented in this chapter. In Section 3.1, the theories related to the present study are discussed. Section 3.2 outlines the factors and sources that were included in the study, as well as the reasoning behind the selection process. Lastly, Section 3.3 is the model specifications of the study.

3.1 Theories

3.1.1 Signaling Theory

According to signaling theory, there is an information asymmetry between the company's management and the parties receiving the information (Akelof, 1970, as cited in Primasari et al., 2022). Based to signal theory, businesses should indicate to those who read their financial statements. An organization will send out signals via communicating and behaving in order to make use of these signals to make hidden qualities visible to stakeholders. In this case, the ESG disclosure can have an impact on institutional ownership and stock liquidity by reducing information asymmetry and appealing to environmental preferences. According to Chen et al. (2022), by lessening information asymmetry and appealing to environmental preferences, ESG disclosure can improve stock liquidity performance and have a beneficial effect on institutional ownership. According to Creyer (1997) as cited in Harjoto and Jo (2014) research,

companies that uphold high standards of business ethics have a notably favorable influence on the purchasing decisions of their customers. Customers favor the products of ethical companies over those of unethical ones (Creyer, 1997, as cited in Harjoto & Jo, 2014).

3.1.2 Stakeholders Theory

The theory of stakeholders (Freeman and Evan, 1990, as cited in Wang et al., 2023), firm takes into account the wants and interests of its stakeholders since a company's ability to survive and grow depends on how well its business operations are received by both internal and external stakeholders (Kostova et al., 2008, as cited in Wang et al., 2023). As a non-financial method of valuation, corporate ESG performance represents a company's approach to sustainability and social responsibility, building reputation capital to assist the company survive challenging times (Wang, 2011b, Cho et al., 2019). To support this point of view, previous studies find that ESG performance (Wang et al., 2023, He et al., 2023, Engelhardt et al., 2021, Masliza & Wasiuzzaman, 2021) and CSR performance (Harjoto & Jo, 2014, Tsai & Wu, 2021, Anggraini, 2015) initiatives improve company reputations and reduce a variety of possible problems amongst diverse stakeholders, and therefore improves stock liquidity. This will increase the value of the company over the long run in addition to the short-term financial performance.

3.1.3 Agency Theory

The agency theory states that there is a significant information asymmetry between investors and management. Therefore, it is quite possible for management to employ information to make decisions about the business that will harm investors and increase agency costs (Chen et al., 2023). According to the previous studies, strong ESG

performance minimizes agency costs and increases stock liquidity as it helps to improve information transparency (Chen et al., 2023). A company with strong ESG performance is likely to have a strong corporate governance framework, be able to adhere to legal requirements, have fewer operational risks, and have a greater sense of social responsibility, therefore reducing investment risks (Chen et al., 2023). Conversely, other studies found that it is negative or insignificant relationship between ESG considerations and stock market returns (Albuquerque et al., 2019, Liu et al., 2023), as the accomplishment of ESG objectives by management may occur at the expense of shareholder value (Anggraini, 2015), thus, ESG investments are inefficient and could be harmful to stakeholders. Moreover, businesses that participate in CSR are more likely to experience agency issues and are linked to decreased share value (Hillman and Keim, 2001, Kruger, 2015, as cited in Tsai & Wu, 2021).

3.2 Data and Sources

The data for this study cover a total of 31 publicly listed companies in Malaysia, over a 13-year sample period from 2010 to 2022, using the panel series data. This study identifies the connectivity between the dependent variables, Stock Liquidity (SL), and key independent variables, including the Environment Pillar Score (ENSCORE), Social Pillar Score (SOSCORE), Governance Pillar Score (CGSCORE), ESG Score (TRESGS). Furthermore, several control variables are included in the study, such as Size (Size), Return of Asset (ROA), Leverage (Lev), Return Index (RI), and Profitability (Profitability). As the availability of the ESG scoring data among the listed companies in Malaysia, the sample period is chosen from 2010 to 2022. Thereby, this study analyses how the ESG score affect the stock liquidity of the firm.

3.2.1 ESG Data

The ESG Score (*TRESGS*) is a comprehensive measure of a company's performance based on self-reported data in the environmental, social, and corporate governance pillars. The data was collected from the Refinitiv DataStream. *TRESGS* measures an organization's ESG performance by using the rating score from 0 -100 (Engelhardt et al., 2021). This *TRESGS* index have also been adopted by previous studies to examine the impact of ESG performance on stock liquidity in United Kingdom (Luo, 2022), Brazil and Germany (Svanes & Øyaas, 2021), China (Chen et al., 2022, Chen et al., 2023, Wang et al., 2023), and Global (Shakil, 2020, Krueger et al., 2021). Besides, *TRESGS* index have also been used to investigate the impact of ESG performance on stock performance in China (He et al., 2023) and Europe (Engelhardt et al., 2021). On the other hand, to investigate which component affect the stock liquidity the most as well as the most important component to the stock liquidity, ESG score will enter the model individually, such as the Environment Pillar Score (*ENSCORE*), Social Pillar Score (*SOSCORE*), Governance Pillar Score (*CGSCORE*). All of this data is collected from Refinitiv DataStream. Environment Pillar Score (*ENSCORE*) is a company's weighted average relative rating determined by incorporating the scores for each of the three environmental categories obtained from the reported environmental data. *ENSCORE* measures an organization's environmental performance by using the rating score from 0 -100. Moreover, Social Pillar Score (*SOSCORE*) is the weighted average relative rating of a company derived from the four social category scores and the reported social information. *SOSCORE* measures an organization's social performance by using the rating score from 0 -100. In addition, Governance Pillar Score (*CGSCORE*) is the weighted average relative rating of a company derived from the three governance category scores and the reported governance information. *CGSCORE* measures an organization's governance performance by using the rating score from 0 -100. In the previous studies, three pillar score were used to identify the individually performance on stock liquidity (Svanes & Øyaas, 2021, Krueger et al., 2021, Chen et al., 2023, Luo, 2022).

3.2.2 Stock Liquidity

In this study, the computation of stock liquidity (*SL*) indicators namely "Closing Percent Quoted Spread" (*CPQS*) are used, which is the most accurate substitute for liquidity when there is a high degree of liquidity. It calculated using the daily ratio of the difference between the ask and bid prices to the midpoint of these prices (Liew et al., 2016). On day (*t*), the liquidity for stock (*i*) can be expressed as (Equation 1):

$$Closing\ Percent\ Quoted\ Spread_{i,t} = \frac{Closing\ Ask_{i,t} - Closing\ Bid_{i,t}}{\left(Closing\ Ask_{i,t} + Closing\ Bid_{i,t}\right)/\ 2} \quad (1)$$

where: *Closing Ask* $_{i,t}$ = closing ask prices of stock *i* on day *t*
Closing Bid $_{i,t}$ = closing bid prices of stock *i* on day *t*

From this ratio, greater illiquidity is indicated by a higher value for the "Closing Percent Quoted Spread", as a wider spread suggest that trading the stock is more challenging due to larger supply and demand imbalance. Investors may ultimately pay more for trading as a result of this. The data was collected from the Refinitiv DataStream. In this study, the final CPQS index is times by 10000, it is because to make the number more meaningful when running the coefficient data, otherwise the coefficient data may become very small which led to not meaningful. In the previous research that examine the relationship between ESG scores and stock liquidity, stock liquidity data are mostly collected from China Stock Market and Accounting Research Database (CSMAR) for those studies done on China (Chen et al., 2023, Chen et al., 2022, Wang et al., 2023, He et al., 2023, Zhang et al., 2024), and Refinitiv Eikon DataStream database for those study in US (Tazo & Grabovac, 1970), Brazil and Germany (Svanes & Øyaas, 2021), and global (Krueger et al., 2021). Thus, as our study is on Malaysia, Refinitiv DataStream will be adopted.

3.2.3 Control Data

To avoid other variables that will affect the stock liquidity, our studies control size (size), return of asset (ROA), leverage (Lev), return index (RI), and profitability (profitability). All of the control variables are collected from Refinitiv DataStream. Size is measured by the total asset, which refers to the total of every current asset, long-term receivables, investments in unconsolidated subsidiaries, net property plant, and equipment, and other assets. Based on Chen et al. (2022) and Engelhardt et al. (2021), size was employed as a control variable and was found significant relationship on stock liquidity and stock return. In our study, size value will divide by 1000000 as to make the number more meaningful when run the coefficient data. Besides, ROA calculates the profitability of a company in relation to its total assets. It demonstrates how effectively a company can turn revenue from its assets. Following the research by (Chen et al., 2022, Krueger et al., 2021, Chen et al., 2023, He et al., 2023, Tazo & Grabovac, 1970), ROA had been adopted as a control variable and was found significant relationship on stock liquidity and stock return. Moreover, Lev is measured by total debt divided by total asset, total debt refers to all capitalized and paying interest lease obligations, including all short and long-term debt. Lev was found significant relationship on stock liquidity and stock return as proved by (Chen et al., 2022, Krueger et al., 2021, He et al., 2023, Liu et al., 2023, Zhang et al., 2024). Furthermore, RI is the annual return of the equity market in a year, it is available for individual equities and unit trusts. Followed by the research from Krueger et al. (2021), return index has a significant relationship on stock liquidity. In our study, RI value will divide 100 as to make the number more meaningful when run the coefficient data. Lastly, Profitability is measured by net income before extraordinary items divide by preferred dividends which refers to income after operating and non-operating income and expenses, reserves, income taxes, minority interest, and equity in earnings, but before extraordinary items, preferred, and common dividends. According to the research by Masliza and Wasiuzzaman (2021), Liu et al. (2023), Zhang et al. (2024), and Engelhardt et al. (2021), profitability has significant relationship on stock liquidity and

stock performance. In our study, profitability value will divide by 1000 as to make the number more meaningful when run the coefficient data.

3.2.4 Summary of Data and Source

The table below present the summary of data and sources employed in this study.

Table 0.1: Summary of Data and Sources

Variable	**Units**	**Type**	**Sources**
Stock Liquidity (*SL*)	Index	DV	Refinitiv DataStream
Environment Pillar Score (*ENSCORE*)	Index	IV	Refinitiv DataStream
Social Pillar Score (*SOSCORE*)	Index	IV	Refinitiv DataStream
Governance Pillar Score (*CGSCORE*)	Index	IV	Refinitiv DataStream
ESG Score (*TRESGS*)	Index	IV	Refinitiv DataStream
Size (*Size*)	Index	Control Variable	Refinitiv DataStream
Return of Asset (*ROA*)	%	Control Variable	Refinitiv DataStream
Leverage (*Lev*)	%	Control Variable	Refinitiv DataStream
Return Index (*RI*)	Index	Control Variable	Refinitiv DataStream
Profitability (*Profitability*)	Index	Control Variable	Refinitiv DataStream

3.3 Model Specification

This study employs panel data analysis to identify the effects of ESG score to stock liquidity in Malaysia from 2010 to 2022 yearly. By definition, a panel dataset refers to a cross-sectional time series dataset that normally offers such measurements of a number of variables over time on observed units, for example like a group of individuals, firms, or nations (Tae et al., 2007). In constructing the panel data model, Hausman test will be used as to determine whether the fixed effect model or random effect model is the most suitable and effective model. Hausman test (Hausman, 1978) is used to distinguish both the random effect model and fix effect model when the research is using panel analysis. Null hypothesis is random effect model is more preferred as it is more efficiency, on the other hand, alternate hypothesis is fixed effect model is more preferred. In figure 3.1, there is insufficient to reject null hypothesis, thus, we conclude that random effect model is more suitable and efficient.

Table 3.2: Hausman test results

DV: SL	***Random Effects (OLS)***			
Model	1 ($ENSCORE$)	2 ($SOSCORE$)	3 ($CGSCORE$)	4 ($TRESGS$)
IV	0.1593***	0.0871**	0.1394***	0.2019***
Size	-0.0075	-0.0010	-0.0007	-0.0097
ROA	0.0331	0.0138	0.0153	0.0144
Lev	0.2217***	0.2690***	0.2801***	0.2282***
RI	-0.1021***	-0.9377**	-0.0933**	-0.0935**
Profitability	-0.0025***	-0.0025***	-0.0024***	-0.0023***
R2	0.1476	0.1227	0.1343	0.1468
Hausman test:				
Chi-Sq Stat	25.0953	26.5461	27.4966	25.9790
Prob.	0.0003	0.0002	0.0001	0.0002

Note: *SL* represents Stock Liquidity, *ENSCORE* represents Environmental Pillar Score, *SOSCORE* represents Social Pillar Score, *CGSCORE* represents Governance Pillar Score, *TRESGS* represents ESG Score, *Size* represents size of firms, *ROA* represents Return of Asset, *Lev* represents Leverage, *RI* represents Return Index, *Profitability* represents Profitability.

Besides that, in this study, ESG will enter the model individually and will also enter the model as in aggregate ESG indicators. This is because we aim to test which of the component affect the liquidity the most or which component are most important to the liquidity. Thus, there is total four models constructed to examine the significance of the ESG score, which are *ENSCORE* in Equation (2), *SOSCORE* in Equation (3), *CGSCORE* in Equation (4) and *TRESGS* in Equation (5). Therefore, the empirical models are as follows:

(i) Model with Environment Pillar Score *(ENSCORE)*

$$SL_{i,t} = \beta_0 + \beta_1 ENSCORE_{i,t} + \beta_2 Size_{i,t} + \beta_3 ROA_{i,t} + \beta_4 Lev_{i,t} + \beta_5 RI_{i,t} + \beta_6 Profitability_{i,t} + \varepsilon_{i,t} \quad (2)$$

(ii) Model with Social Pillar Score *(SOSCORE)*

$$SL_{i,t} = \beta_0 + \beta_1 SOSCORE_{i,t} + \beta_2 Size_{i,t} + \beta_3 ROA_{i,t} + \beta_4 Lev_{i,t} + \beta_5 RI_{i,t} + \beta_6 Profitability_{i,t} + \varepsilon_{i,t} \quad (3)$$

(iii) Model with Governance Pillar Score *(CGSCORE)*

$$SL_{i,t} = \beta_0 + \beta_1 CGSCORE_{i,t} + \beta_2 Size_{i,t} + \beta_3 ROA_{i,t} + \beta_4 Lev_{i,t} + \beta_5 RI_{i,t} + \beta_6 Profitability_{i,t} + \varepsilon_{i,t} \quad (4)$$

(iv) Model with ESG Score *(TRESGS)*

$$SL_{i,t} = \beta_0 + \beta_1 TRESGS_{i,t} + \beta_2 Size_{i,t} + \beta_3 ROA_{i,t} + \beta_4 Lev_{i,t} + \beta_5 RI_{i,t} + \beta_6 Profitability_{i,t} + \varepsilon_{i,t} \quad (5)$$

In four models as above mentioned, the dependent variable is Stock Liquidity *(SL)*, and the independent variable is Environment Pillar Score *(ENSCORE)*, Social Pillar Score *(SOSCORE)*, Governance Pillar Score *(CGSCORE)*, and ESG Score *(TRESGS)*. While the control variables that included in this study was claimed by Chen et al. (2022) and Engelhardt et al. (2021) for Size (*size*), Chen et al. (2022), Krueger et al. (2021), Chen et al. (2023), He et al. (2023), Tazo and Grabovac (1970) for Return for Asset (*ROA*), Krueger et al. (2021) for Return Index (*RI*), and Masliza and Wasiuzzaman (2021), Liu et al. (2023), Zhang et al. (2024) and Engelhardt et al. (2021) for Profitability (*profitability*).

CHAPTER 4: RESULTS AND DISCUSSIONS

4.0 Introduction

This section provide and discuses based on the outcome of the analysis in specifics, as long as provide interpretation and insights of the findings.

4.1 Descriptive Statistics

In Table 4.1 that attached below, presents the descriptive statistics of all variables cover a total of 31 publicly listed companies, over a 13-year sample period from 2010 to 2022, in the form of panel series data.

Table 4.1: Descriptive Statistics

	SL	*TRESGS*	*ENSCORE*	*SOSCORE*	*CGSCORE*	*SIZE*	*ROA*	*LEV*	*RI*	*PROFITABILITY*
Mean	48.4584	51.2038	42.8531	53.1755	57.0144	98.3313	6.3749	26.9620	28.4746	1509.9220
Median	45.0000	52.7400	42.5700	56.6600	59.5700	27.8970	3.9200	26.9100	19.6134	1134.9280
Maximum	177.0000	87.5800	88.7000	89.8300	95.5000	945.3499	75.3200	94.4400	249.4805	9751.0770
Minimum	14.0000	10.4700	0.7900	4.0800	11.1300	1.0069	-20.6700	0.0000	0.6360	-5111.6670
Std. Dev.	21.2578	17.3843	22.5349	21.6171	20.3536	161.5573	10.2524	16.4431	34.8653	1860.5940
Skewness	1.2330	-0.0932	0.0514	-0.4203	-0.2143	2.7606	3.6222	0.7105	2.8780	1.2664
Observations	397	397	397	397	397	397	397	397	397	397

Note: *SL* represents Stock Liquidity, *TRESGS* represents ESG Score, *ENSCORE* represents Environmental Pillar Score, *SOSCORE* represents Social Pillar Score, *CGSCORE* represents Governance Pillar Score, *Size* represents size of firms, *ROA* represents Return of Asset, *Lev* represents Leverage, *RI* represents Return Index, and *Profitability* represents Profitability.

The average mean for *SL* is 48.4584 and its median value is 45.0000 among the 31 listed company in Malaysia. Uem Sunrises have the highest *SL* with 177 while Public Bank have the lowest *SL* with 14.0000 among the 31 companies. Compared to the study from Svanes and Øyaas (2021), the overall mean of stock liquidity in Brazil and

Germany are 70.000 and 60.000 respectively, which is slightly higher than Malaysia. This may because of Malaysia may have a lower trading volume than countries like Brazil and Germany with larger economies and more highly involved in trading.

On the other hand, the *TRESGS* overall mean is 51.2038 and its median value is 52.7400. Uem Sunrise have the maximum *TRESGS* with 87.58 while Gamuda have the lowest *TRESGS* with 10.47 among the companies. Compared to Chen et al. (2022), the average mean of ESG score in China is 20.9950 with a sample of 8407 companies which relatively low compared to Malaysia. While for the studies in Brazil (Svanes & Øyaas, 2021), United State (Engelhardt et al., 2021), and Global (Shakil, 2020) was relatively similar with the average ESG score in Malaysia, 51.3000, 53.2900, 52.1000, respectively. However, the average ESG mean in Germany is notably higher at 58.8000 (Svanes & Øyaas, 2021).

Besides that, the overall mean of *ENSCORE* is 42.8531 and its median value is 42.5700. Public Bank have the maximum *ENSCORE* with 88.7000 while Gamuda have the lowest *ENSCORE* with 0.7900 among the companies. Compared to Svanes and Øyaas (2021), the average mean of environment pillar score in Brazil and Germany is 46.1000 and 55.1000 respectively, which slightly higher than Malaysia.

Moreover, the overall mean of *SOSCORE* is 53.1755 and its median value is 56.6600. Genting have the highest *SOSCORE* with 89.8300 while Kuala Lumpur Kepong have the minimum *SOSCORE* with 4.0800 among the companies. Compared to Svanes and Øyaas (2021), the average mean of social pillar score in Brazil and Germany is 54.5000 and 63.5000 respectively, which lightly higher than Malaysia.

Furthermore, the overall mean of *CGSCORE* is 57.0144 and its median value is 59.5700. Malayan Banking have the maximum *CGSCORE* with 95.5000 while SP Setia have the minimum *CGSCORE* with 11.1300 among the companies. In contrast to

Svanes and Øyaas (2021), the average mean of governance pillar score in Brazil and Germany is 50.6000 and 53.8000 respectively, which slightly lower than Malaysia.

Among the three component ESG pillar score, *CGSCORE* has the highest mean of 57.0144 which have a greater influence on the *TRESGS* overall score. While *ENSCORE* have the lowest mean of 42.8531 which have a smaller influence on the *TRESGS* overall score compared to *SOSCORE* and *CGSCORE*. As compared to the study from Svanes and Øyaas (2021), in Brazil and Germany, social pillar score has the highest mean which have a greater influence on the overall ESG score.

4.2 Correlations Test

Based on Table 4.2, it shows the correlations test between the independent variables. The majority of the other correlations coefficients are small, thus, indicating that there is no significant problem with multicollinearity between the independent variables.

Table 4.2: Correlations Test Between Independent Variables

	ENSCORE	*SOSCORE*	*CGSCORE*	*TRESGS*	*SIZE*	*ROA*	*LEV*	*RI*	*PROFITABILITY*
ENSCORE	1								
SOSCORE	0.6791	1							
CGSCORE	0.2151	0.2994	1						
TRESGS	0.8085	0.8932	0.5866	1					
SIZE	0.3358	0.2422	0.2247	0.3184	1				
ROA	0.0645	0.1451	0.0541	0.1263	-0.2616	1			
LEV	0.0576	-0.0616	-0.1274	-0.0382	-0.3524	0.0621	1		
RI	0.1513	-0.0525	-0.0215	0.0126	0.0700	0.2165	-0.0185	1	
PROFITABILITY	0.1499	0.1624	0.1344	0.1582	0.7287	-0.0014	-0.3264	0.0051	1

Note: *ENSCORE* represents Environmental Pillar Score, *SOSCORE* represents Social Pillar Score, *CGSCORE* represents Governance Pillar Score, *TRESGS* represents ESG Score, *Size* represents size of firms, *ROA* represents Return of Asset, *Lev* represents Leverage, *RI* represents Return Index, and *Profitability* represents Profitability.

4.3 Output Estimation

4.3.1 Model with Environment Pillar Score *(ENSCORE)*

Table 4.3: REM of Equation (2)

Random Effects Model *(REM)*						
C	ENSCORE	Size	ROA	LEV	RI	PROFITABILITY
42.8283***	0.1593***	-0.0075	0.0331	0.2217***	-0.1021***	-0.0025***
(0.0000)	(0.0001)	(0.5336)	(0.8142)	(0.0091)	(0.0100)	(0.0004)

Note: () is the probability. Number of observations is 397. *ENSCORE* represents Environmental Pillar Score, *Size* represents size of firms, *ROA* represents Return of Asset, *Lev* represents Leverage, *RI* represents Return Index, and *Profitability* represents Profitability. Significance at the 1% (***), 5% (**) and 10% (*) levels, respectively.

Based on the outcome that presents in Table 4.3, *ENSCORE* has a significant negative impact on Stock Liquidity (*SL*). For an extra unit of increase in the *ENSCORE*, the stock liquidity is estimated to increase by 0.1593 unit. In this study, Closing Percent Quoted Spread (CPQS) is used as the measurement of stock liquidity, therefore, the higher the CPQS the lower the liquidity for the stock. This may because of the investor perception view which some of the investors may determine companies with higher environment score as less profitable and high cost incurred, thus, it leads to lower demand for the stock and therefore reduce the stock liquidity. Based on the study from Bhattacharyya and Rahman (2020), stated that increase in the mandatory CSR' spending will lower the stock return that supported by the perspective view of "shareholders" expense' argument, thus, it will directly affect the investors from demanding the stock and therefore reduce the stock liquidity. Furthermore, *ENSCORE* have the greatest impact to stock liquidity as compared to *SOSCORE* and *CGSCORE*, this may because of environment activity has the most exposure and obvious to the public.

4.3.2 Model with Social Pillar Score *(SOSCORE)*

Table 4.4: REM of Equation (3)

Random Effects Model *(REM)*						
C	SOSCORE	Size	ROA	LEV	RI	PROFITABILITY
43.0151***	0.0871**	-0.0010	0.0138	0.2690***	-0.9377**	-0.0025***
0.0000	0.0322	0.9377	0.9230	0.0016	0.0197	0.0004

Note: () is the probability. Number of observations is 397. *SOSCORE* represents Social Pillar Score, *Size* represents size of firms, *ROA* represents Return of Asset, *Lev* represents Leverage, *RI* represents Return Index, and *Profitability* represents Profitability. Significance at the 1% (***), 5% (**) and 10% (*) levels, respectively.

Based on the outcome that presents in Table 4.4, *SOSCORE* has a significant negative impact on Stock Liquidity (*SL*). For an extra unit of increase in the *SOSCORE*, the stock liquidity is estimated to increase by 0.0871 unit. The reason of this result may be the higher cost incurred that worried by the investors. When improving in social sector, it usually relates to increasing in workers' salaries, providing various types of benefits, or investing in activities that develop employees. Thus, this could lead to higher cost incurred that will affect the profitability of the company and reduce the attractiveness of investors and thereby lower stock liquidity. The result was consistent with Svanes and Øyaas (2021) as the study stated that increase in larger firms social scores will adversely affect the market liquidity in Brazil and Germany. Besides that, *SOSCORE* have the least impact to the stock liquidity compared to *ENSCORE* and *CGSCORE*, this may because social aspects were mostly and easily neglected by people.

4.3.3 Model with Governance Pillar Score *(CGSCORE)*

Table 4.5: REM of Equation (4)

Random Effects Model *(REM)*						
C	CGSCORE	Size	ROA	LEV	RI	PROFITABILITY
39.2469***	0.1394***	-0.0007	0.0153	0.2801***	-0.0933**	-0.0024***
0.0000	0.0013	0.9506	0.9142	0.0008	0.0196	0.0005

Note: () is the probability. Number of observations is 397. *CGSCORE* represents Governance Pillar Score, *Size* represents size of firms, *ROA* represents Return of Asset, *Lev* represents Leverage, *RI* represents Return Index, and *Profitability* represents Profitability. Significance at the 1% (***), 5% (**) and 10% (*) levels, respectively.

Based on the outcome that presents in Table 4.5, *CGSCORE* has a significant negative impact on Stock Liquidity (*SL*). For an extra unit of increase in the *CGSCORE*, the stock liquidity is estimated to increase by 0.1394 unit. The rationale behind this outcome is political instability, as in Malaysia there is high political instability (Melka, 2022), companies could be more exposed to a higher risk from government regulations. This finding was in line with Svanes and Øyaas (2021), as the study stated that the market liquidity will be adversely affected when increasing in larger firms' governance scores in Brazil and Germany.

4.3.4 Model with ESG Score *(TRESGS)*

Table 4.6: REM of Equation (5)

Random Effects Model *(REM)*						
C	TRESGS	Size	ROA	LEV	RI	PROFITABILITY
39.0010***	0.2019***	-0.0097	0.0144	0.2282***	-0.0935**	-0.0023***
0.0000	0.0001	0.4299	0.9189	0.0072	0.0188	0.0009

Note: () is the probability. Number of observations is 397. *TRESGS* represents ESG Score, *Size* represents size of firms, *ROA* represents Return of Asset, *Lev* represents Leverage, *RI* represents Return Index, and *Profitability* represents Profitability. Significance at the 1% (***), 5% (**) and 10% (*) levels, respectively.

Based on the outcome that presents in Table 4.6, *TRESGS* has a significant negative impact on Stock Liquidity (*SL*). For an extra unit of increase in the *TRESGS*, the stock liquidity is estimated to increase by 0.2019 unit. This may because of companies that engage in ESG will impose to a higher cost of compliance. Companies with high ESG score may requires significant investments in environment practices, social projects, and governance frameworks, these would cause increasing on investors' concerns about the operating cost and profitability of the company, thereby reduce its interest and thus lowering the stock liquidity. Supported by the study from Bhattacharyya and Rahman (2020), expenditure on sustainable activities is negatively associated with the stock return, thus, lower return would widen the bid-ask spread as it become more expensive for investors to trade.

CHAPTER 5: CONCLUSION, POLICY IMPLICATIONS AND LIMITATIONS

5.0 Introduction

This chapter summaries the main findings and its implications for policy. In section 5.1, present the summary of statistical analyses. Moreover, section 5.2, suggests the implications of policy in this study and points out the possible implications for policymakers, government, and companies. Finally, limitations on this study will be discussed in section 5.3.

5.1 Summary of Statistical Analyses

In this study, the panel data analysis is used to identify the relationships of ESG score (*TRESGS*), environment pillar score (*ENSCORE*), social pillar score (*SOSCORE*), and governance pillar score (*CGSCORE*) to stock liquidity (*SL*) in Malaysia from 2010 to 2022. Moreover, to avoid other variables that will affect the stock liquidity, our studies control size (*size*), return of asset (*ROA*), Leverage (*Lev*), profitability (*profitability*), and return index (*RI*). Thereby, this study consists of four model specifications. On the other hand, with Hausman test analysis, it suggests that the random effects model is the most suitable and effective model in explaining the study's outcome. Additionally, the main findings shows that four of the models in this study has a significant positive relationship of the *TRESGS*, *ENSCORE*, *SOSCORE*, and *CGSCORE* to *SL*, which means increase in *TRESGS*, *ENSCORE*, *SOSCORE*, and *CGSCORE* will bring negative impact to *SL*. Besides that, from the result stated that *ENSCORE* have the greatest negative impact on stock liquidity whereas *SOSCORE* has the least impact on stock liquidity. In conclusion, this study points out the significant of comprehending the

correlation between ESG score, environment pillar score, social pillar score, governance pillar score, and stock liquidity, as policymakers need to adopt suitable ways to manage the spreadness of stock liquidity and increase the awareness of ESG.

5.2 Policy Implications

To address the negative impact of ESG that brings to stock liquidity, government should attach importance to this problem by encouraging more companies to be ESG compliance. Such as providing tax incentives, subsidies, or other forms of support in order to encourage the adoption of ESG principles to extend the pool of ESG compliance companies, which then help to increase the liquidity in the market. Moreover, government can work with industry stakeholders and standard-setting organizations to create strong ESG frameworks and guidelines by utilizing their regulatory authority. The standardized ESG measurements and standards could attract companies to engage in ESG compliance. Additionally, government could also focus on educational programmers that aim to educate the public, investors, and company community about the awareness of ESG program. Besides that, policymakers may enforce ESG reporting requirements to all listed company. This mandatory reporting system ensures the accountability and transparency while giving investors an in-depth understanding of a company's ESG performance. Enforcing ESG reporting not only helps investors have more options for investments, but also promotes a healthy competition for companies based on sustainable practices.

On the other hand, despite the negative impact on stock liquidity, company should not limit or reduce the investment in ESG as Malaysia's ESG is still in an early stage. Thereby, it may need some time to yield the positive result. Furthermore, company that engage in ESG initiative could improve their operations, encourage long term resilience,

and enhance innovation thinking, thus in the way add value to stakeholders and shareholders.

5.3 Limitation

Regarding to the first limitations of this study is only 31 listed company of sample in this study, data availability will be limited in examine the relationship between ESG and stock liquidity in Malaysia. As to date, there are only 31 companies out of more than 900 company in bursa Malaysia have engage in ESG reporting, therefore, it cannot be generalized on the whole companies in Malaysia.

Besides that, although in Malaysia there has been increasing focus on corporate reporting's ESG, the landscape is still having a lot of notable limitations. For example, despite the establishment of regulations by regulatory bodies such as the Malaysia Securities Commission and Bursa Malaysia, there is still a lack of consistency and uniformity in the ESG reporting practices of Malaysian Companies. From this situation, indicating that Malaysia is still in an early stage of implementing ESG reporting. Additionally, many companies face challenges on insufficient data, inconsistent methods, and lack of general knowledge about the significance and application of ESG indicators. Thus, ESG reporting in Malaysia are still in an immature stage.

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