FACTORS THAT INFLUENCE ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) RATING FOR PUBLIC LISTED COMPANIES IN FTSE4 GOOD BURSA MALAYSIA INDEX (F4GBM INDEX)

By

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Abstract

The purpose of this study is to examine the factors that influence environmental, social and governance (ESG) rating for public listed companies in FTSE4 Good Bursa Malaysia Index (F4GBM Index). The analysis is based on the sample from 31 public listed companies in F4GBM Index as of June 2017. The sample period covered from 2007 to 2016. Using Generalized Method of Moments (GMM) and Pooled OLS Model (POLS), the results of this paper indicate that credit ratio and liquidity ratio have positive significant relationships with ESG rating, environmental rating and governance rating but profitability ratio and DuPont analysis ratio are not significant with ESG rating, environmental rating and governance rating. Meanwhile for social rating, it has positive significant with profitability ratio, credit ratio and liquidity ratio but not significant with DuPont analysis ratio for the 31 public listed companies in F4GBM Index. This research contributes to the literature based on the context of Malaysian public listed companies which are listed in F4GBM Index and delivers empirical evidence on the influences of profitability ratio, credit ratio, liquidity ratio and DuPont analysis ratio towards ESG rating. The findings of the study will be highly beneficial for securities capital market investors in making ESG investments in Malaysia's public listed companies through the disclosures made on financial performances of profitability ratio, credit ratio, liquidity ratio and DuPont analysis ratio. As for the public listed companies, it will help to boost up the profile and exposure of public listed companies which leading in ESG practices and to create an environment or encouragement for best practice disclosure by the public listed companies.

Keywords: ESG rating, F4GBM Index, Malaysia

Abstrak

Tujuan kajian ini adalah untuk mengkaji faktor-faktor yang mempengaruhi penilaian alam sekitar, sosial dan tadbir urus (ESG) bagi syarikat tersenarai awam dalam Indeks FTSE4 Baik Bursa Malaysia (Indeks F4GBM). Analisis ini berdasarkan kepada sampel dari 31 syarikat tersenarai awam dalam Indeks F4GBM pada Jun 2017. Tempoh sampel pemerhatian adalah dari tahun 2007 hingga 2016. Menggunakan Kaedah Umum Momen (GMM) dan Model OLS Berganda (POLS), keputusan kajian ini menunjukkan bahawa nisbah kredit dan nisbah kecairan mempunyai hubungan penting yang positif dengan penarafan ESG, penarafan alam sekitar dan penarafan tadbir urus tetapi nisbah keuntungan dan nisbah analisis DuPont tidak signifikan dengan penarafan ESG, penilaian alam sekitar dan penarafan tadbir urus. Sementara itu untuk penarafan sosial, ia mempunyai signifikan positif dengan nisbah keuntungan, nisbah kredit dan nisbah kecairan tetapi tidak signifikan dengan nisbah analisis DuPont bagi 31 syarikat tersenarai awam dalam Indeks F4GBM. Penyelidikan ini menyumbang kepada kesusasteraan berdasarkan konteks syarikat tersenarai awam Malaysia yang disenaraikan dalam Indeks F4GBM dan menyampaikan bukti empirik mengenai pengaruh nisbah keuntungan, nisbah kredit, nisbah kecairan dan nisbah analisis DuPont terhadap penarafan ESG. Penemuan kajian ini akan memberi manfaat kepada pelabur pasaran modal sekuriti dalam membuat pelaburan ESG di syarikat tersenarai awam Malaysia melalui penzahiran yang dibuat ke atas prestasi kewangan nisbah keuntungan, nisbah kredit, nisbah kecairan dan nisbah analisis DuPont. Bagi syarikat tersenarai awam, ia akan membantu meningkatkan profil dan pendedahan syarikat tersenarai awam yang mengetuai amalan ESG dan mewujudkan persekitaran atau galakan untuk pendedahan amalan terbaik oleh syarikat tersenarai awam.

Kata kunci: Penarafan ESG, Indeks F4GBM, Malaysia

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List of Abbreviations

AR	Arellano Bond Serial Correlation Test
AR1	Arellano Bond Serial Correlation Test for First Order
AR2	Arellano Bond Serial Correlation Test for Second Order
Bloomberg	Global Provider for Financial News and Information which includes Real Time and Historic Price Date, Financials Data, Trading News and Analyst Coverage as well as General News and Sports
Bloomberg LP	Provides Financial Software Tools such as Analytics and Equity Trading Platform, Data Services and News to Financial Companies and Organizations Through the Bloomberg Terminal
BPLM	Breusch and Pagan Lagrangian Multiplier Test
EBIT	Earnings Before Interest and Tax
EMH	Efficient Market Hypothesis
ESG	Environmental, Social and Governance
F4GBM Index	FTSE4 Good Bursa Malaysia Index
FE	Fixed Effect Test
FTSE Russell	Global Index Leader
FYE	Financial Year End
GMM	Generalized Method of Moments
HT	Hausman Test
LTDE	Long Term Debt to Equity
NDEBIT	Net Debt to EBIT
NIM	Net Income Margin
POLS	Pooled OLS Test
RE	Random Effect Test
REITs	Real Estate Investment Trust
ROE	Return on Equity
ROA	Return on Asset
SDGs	UN Sustainable Development Goals
SGR	Sustainable Growth Rate
SSE	Sustainable Stock Exchanges
TQ	Tobin's Q

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CHAPTER ONE

INTRODUCTION

1.1. Introduction

As for introduction, this chapter describes the area of the study conducted along with environmental, social and governance (ESG) rating, secondly on problem statement, thirdly on research questions, followed by the research objective and lastly by discussing the significance of the study.

1.2 Background of the Study

According to Sustainable Stock Exchanges Initiative website, the Sustainable Stock Exchanges (SSE) project was an initiative of United Nations (UN), and collaboration with several parties such as UN Conference on Trade and Development (UNCTAD), United Nations Environment Programme Finance Initiative (UNEP-FI) and the UN Principles of Responsible Investment (UN PRI) in handling ESG issues. Meanwhile, the additional key stakeholders also included the World Federation of Exchanges (WFE), and the International Organization of Securities Commissions (IOSCO). Acting as multi stakeholders learning platform for regulators, stock exchanges, investors and companies, SSE targeted to strive in encouraging the sustainable investment implementation within the internal and external users.

Further, in determining the ESG rating of a company, according to FTSE Russell website, FTSE Russell was developed to become a worldwide index guru in providing a state-of-the-art benchmarking, analytics and information keys for investors in global basis. FTSE Russell also concentrated on adopting the uppermost industry

specifications in index plan and governance and adopts the IOSCO Principles. In addition, FTSE Russell is wholly owned by London Stock Exchange Group.

FTSE Russell has provided the FTSE ESG Rating through Bloomberg Terminal in order to accommodate the investors with main data which in turn to help the users to have better understanding for the companies' whom adopting ESG practices in various dimensions. ESG rating were comprises of environmental pillar, social pillar and governance pillar. Further, the said pillars can be subdivided into fourth teen themes which covered a variety of issues in sustainability due to the higher awareness by investors. Under environmental component, the themes are biodiversity, climate change, pollution and resources, supply chain and water use. For the social component, the themes are customer responsibility, health and safety, human rights and community, labour standards and supply chain. Meanwhile for the governance component, the themes are anti-corruption, corporate governance, risk management and tax transparency. The same can be referred clearly as per Figure 1.1 below.

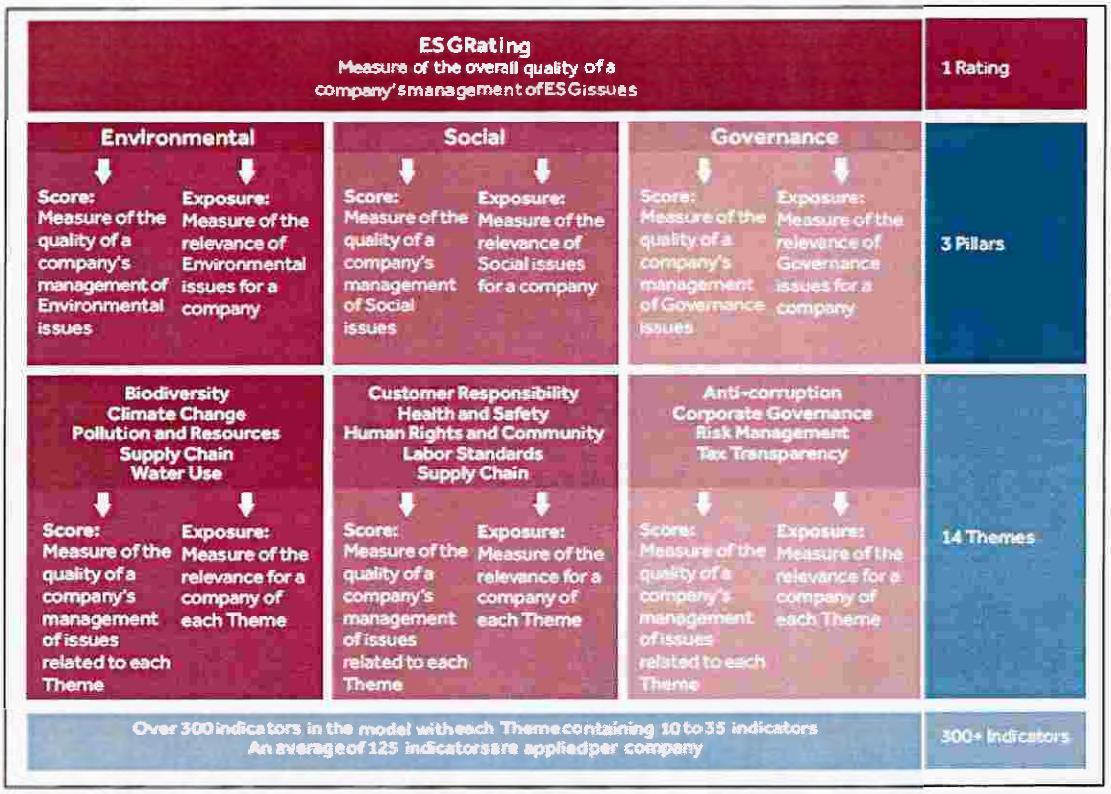

Figure 1.1
ESG Rating
Source: FTSE Russell website, 2019

The ESG reports and rating is recognized as an important tool for the financial institutions, asset managers, institutional investors and other stakeholders for further assessment and measurement on the company's ESG accomplishment over the time and as compared to circle of peers. This will help to formulate the foundation of informal and shareholder's offer which related to investor in meeting up with companies rating on ESG by way of assessment and measurement being done (Huber, Comstock, Polk & Wardwell, 2017).

For Asian region, in April 2016, FTSE Russell has announced the introduction of FTSE4Good ASEAN 5 Index, whereby an ESG index which was established in partnership with the Association of Southeast Asian Nations (ASEAN) Exchanges. In addition, these ASEAN Exchanges are made from collaboration initiatives between

seven exchanges from Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam. For Vietnam, there are comprises of two exchanges. The aim of this ASEAN Exchanges is to encourage the development of the ASEAN capital market by driving cross border teamwork rationalization entree to ASEAN, forming ASEAN centric products and apply it to the targeted publicity initiatives. The companies which under the said index were being evaluated in order to meet the standards essential for the FTSE4Good inclusion.

Under FTSE4Good ASEAN 5 Index, they are two types of indexes that can be referred, F4GASPR Index and F4GASTR index. The F4GASPR Index is representing for price return index and F4GASTR index is representing for total return index. The movement of the said indexes are based on the last price which can be referred to Figure 1.2 and Figure 1.3 below. The said data have been extracted from Bloomberg on 31 December 2017 (Bloomberg Terminal, 2017).

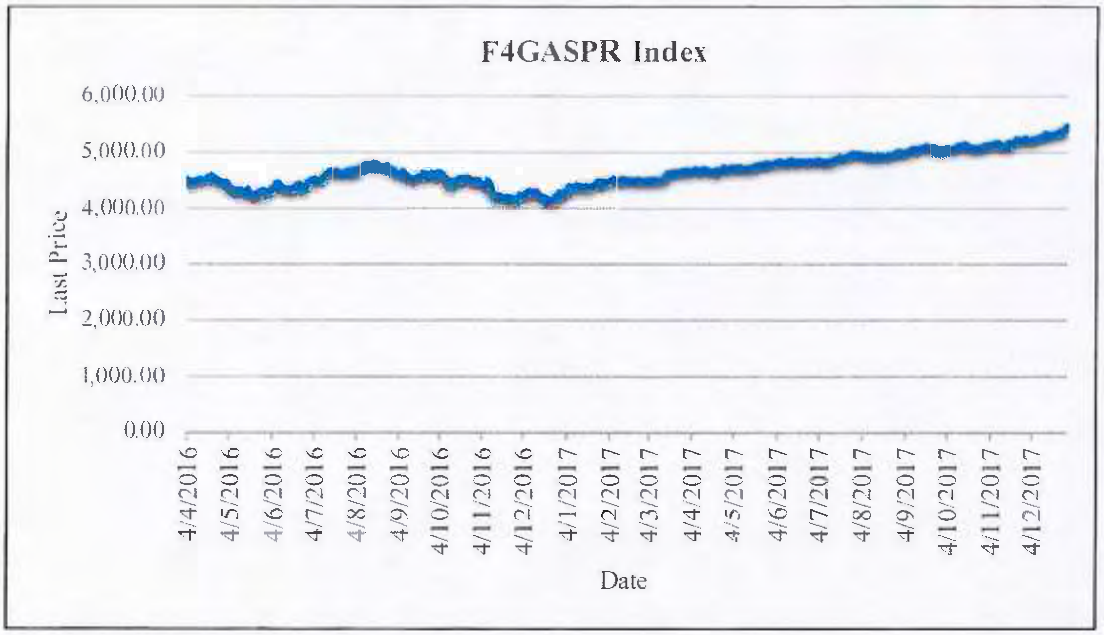

Figure 1.2
F4GASPR Index
Source: Bloomberg Terminal, 2017

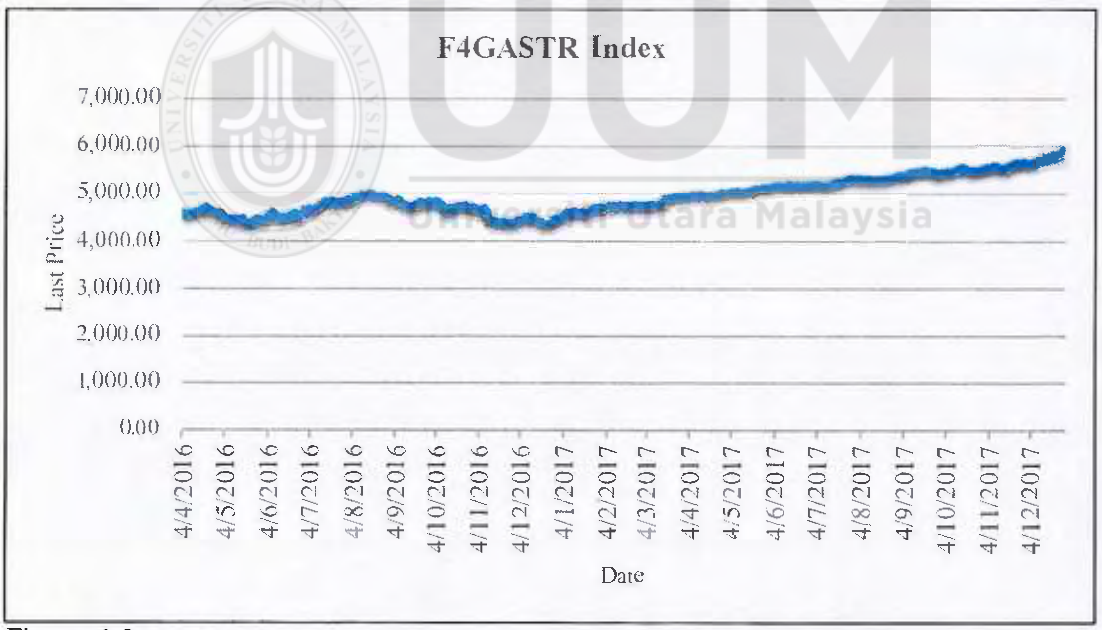

Figure 1.3
F4GASTR Index
Source: Bloomberg Terminal, 2017

As per the Figure 1.2 and Figure 1.3, both indexes show fluctuations on the price movement from April 2016 to December 2016. Beginning for the year 2017 onwards, it shows that both indexes moved upward and in tandem. It can be concluded that the

introduction of an ASEAN ESG Index meets their aspiration in becoming a vital growth in the determination to showcase value companies that are benchmarking their ESG practices compared to some of the world greatest. The same not only reflected in the performance of the companies but also on a value worth of the companies.

Meanwhile in Malaysia context, according to FTSE Russell website, Bursa Malaysia and FTSE Russell have commenced an ESG Index which is known as FTSE4Good Bursa Malaysia Index, whereby the commencement of the same is exclusive for the Malaysian capital market in December 2014. The objectives of the same issuance are to keep abreast the investors in the creation of ESG investments in Malaysia's public listed companies, to boost up the outline and revelation of companies which leading in ESG practices, to create an environment or encouragement for best practice disclosure by the companies and to fully support on the evolution to a lower carbon and more sustainable economy. The selected companies are being carefully chosen from the top two hundred Malaysian stocks in the FTSE Bursa Malaysia EMAS Index which are being examined in agreement with the clear and well-defined ESG criteria. In addition, the intended goal of the said index is to address the companies which have an established adoption in highlighting ESG risks. As of June 2017, there are 43 public listed companies in various sectors were registered in the Malaysia's Sustainability Index which known as FTSE4Good Bursa Malaysia Index.

The Malaysia's Sustainability Index or FTSE4Good Bursa Malaysia Index is also known as F4GBM Index in Bloomberg Terminal. As per Figure 1.4, noted that the price index fluctuates from December 2014 to December 2016. From December 2016 onwards, noted that the said price index is gradually increase with slight fluctuations

up to 31 December 2017. This signalled that the performance of the F4GBM Index is in positive way and grow in tandem with F4GASPR Index and F4GASTR index.

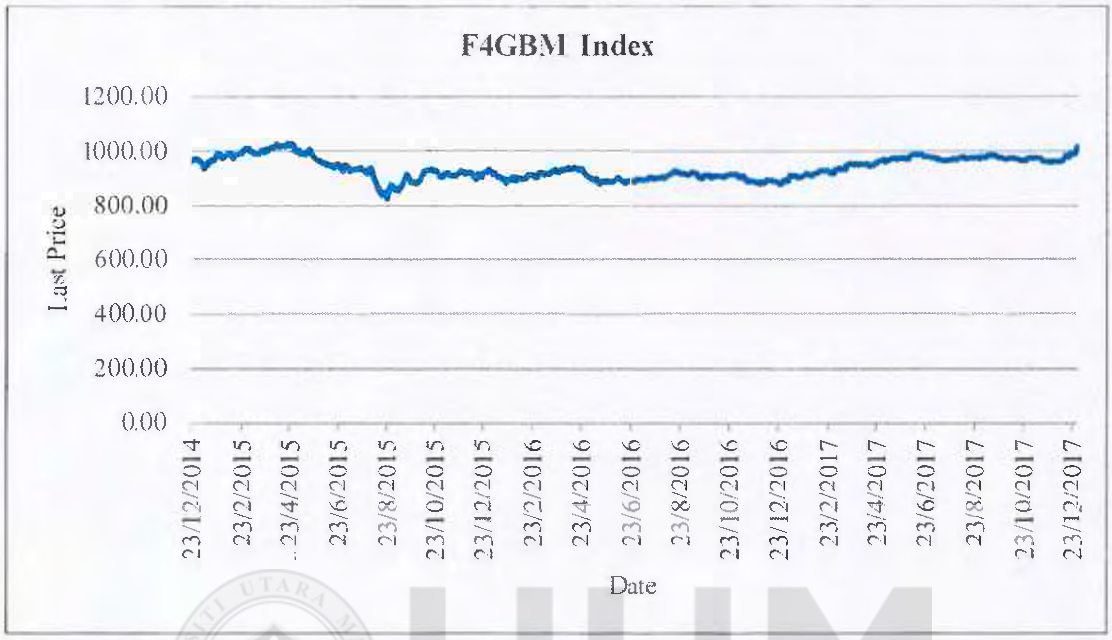

Figure 1.4
F4GBM Index
Source: Bloomberg Terminal, 2017

As per international level, there is a study done on the disclosure of non-financial information that related to ESG, which is important for firm performance in emerging markets. Further, the study shown that ESG disclosure is negatively related to firm performance in environment with lower information asymmetries. Therefore, the ESG disclosure is not valued by stock market participants (Farooq, 2015).

Another study was done on international level, whereby in an emerging economy of India. The study focused on the impact of ESG disclosure on financial performance of firms in India using resource based view. From the study done, noted that ESG disclosure scores showed negative association with the measure of firm performance,

whereby the relationship being moderately significant with return on assets (Sharma, Bhattacharya & Thukral, 2019).

In Malaysia, a study also has been conducted on the impact of ESG factors on the performance of Malaysian public limited companies by using indicators such as profitability, firm value and cost of capital. In addition, the study concluded that ESG impacts on companies in emerging economies which include Malaysia, have not sufficiently explored (Atan, Alam, Said & Zamri, 2018).

1.3 Problem Statement

Ideally, sustainability meaning relies on the ability in maintaining the needs of present generations and future generations simultaneously. Economic, environmental and social (EES) were being recognized as three pillars in determining the concept of sustainability (Kenton, 2018). Meanwhile, ESG was a term being used by the investment community in the consideration of corporate behaviour. The emergence of sustainability was resulted from the observance of public discontent over the long term damage that will cause and also known as corporate ethics (Kenton, 2018).

As per Bursa Malaysia sustainability website which is known as Bursa Sustain, the recent Global Risks 2015 which stated by the World Economic Forum found that seven out of the ten risks of highest concern, were sustainability-related (Figure 1.5). From the Figure 1.5, the same can be refer clearly that the main risk identified was water crises which had overtaken other risks such as nuclear weapons and interstate conflict. In addition, water crises are defined as an important deterioration in the existing class and amount of fresh water, consequential in destructive effects on people health and/or

economic movement. Meanwhile, other prevalent sustainability-related risks identified in the said report are also inclusive of energy price shockwave, failure of climate variation adaptation, fiscal disasters, unemployment or underemployment, biodiversity harm and ecosystem downfall and spread of transmittable disease.

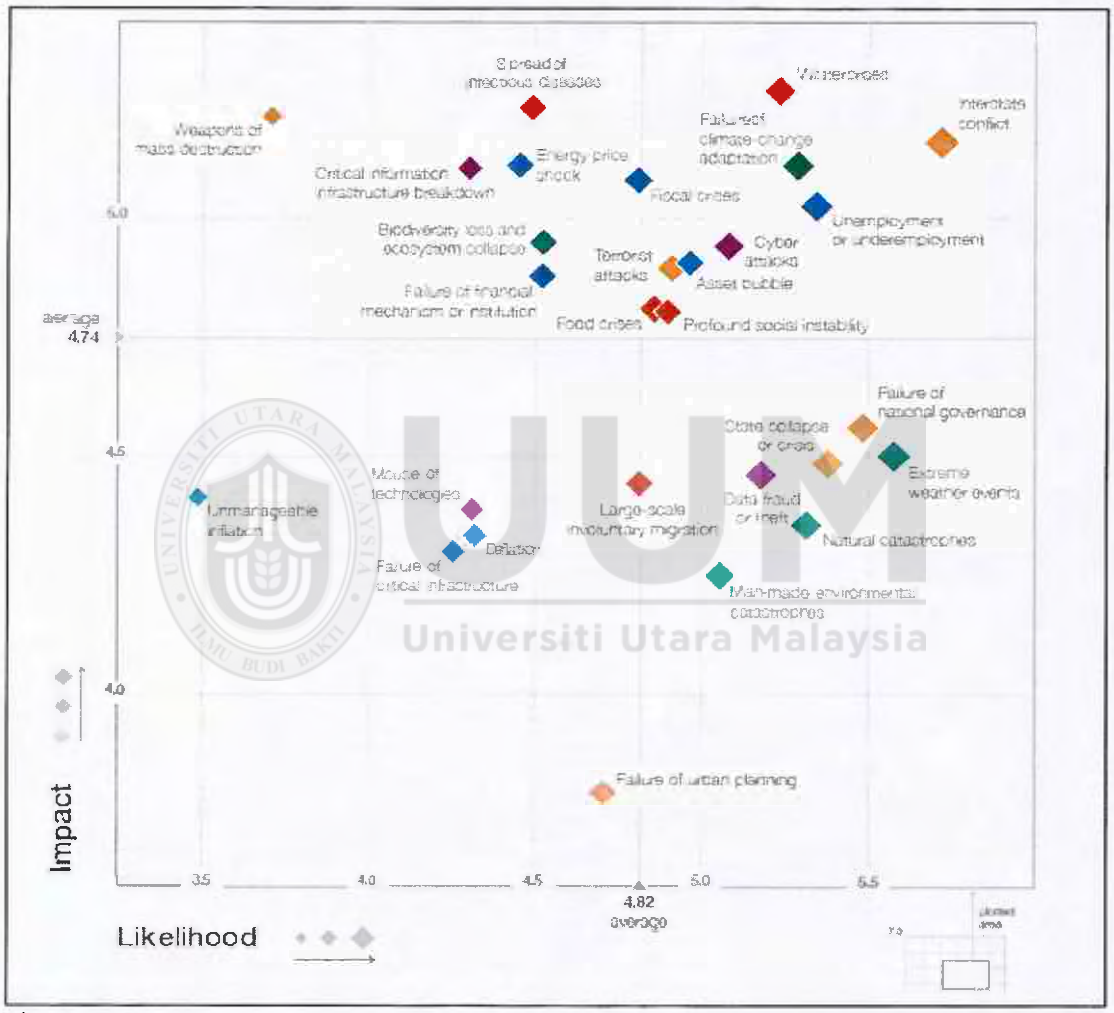

Figure 1.5
The Global Risks Landscape 2015
Source: Bursa Sustain website, 2018

According to Sustainable Stock Exchanges Initiative website, the investment community also being impacted in totality. Back in 2004, the UN Global Compact has initiated a meeting with respective parties, whereby with a number of global stock exchanges in order to explore opportunities for further collaboration. Further, in 2008,

a meeting was held at UN Headquarters in Geneva which were attended by UNCTAD, PRI, investors, financial information suppliers, stock exchanges and public policy representatives. The agenda of this meeting is to seek a collaboration and to encourage accountable investment idea in developing markets and to review the agreeing procedure framework. By end of the Year 2008, another meeting was conducted, in order to seek views from the listing authorities of worldwide stock exchanges whether is there any beneficial value to include a provision in order to promote disclosures by companies on their sustainability performance and approach. To add, this disclosure is known as ESG. Thus, the SSE Initiative was introduced by UN Global Compact, UNCTAD and PRI as per their inspirations earlier.

Moreover, as highlighted in the Sustainable Stock Exchanges Initiative website, the aim of this SSE initiative is to become a peer-to-peer education platform, whereby to discover on what manner the exchanges around the world, which is in partnership with the investors, regulators and companies can boost up the corporate clarity and ultimate performance on ESG matters and to inspire sustainable investment in entire context. For a better management of the said initiative, the same being managed by the UNCTAD, the UN Global Compact, the UNEP-FI and PRI.

In addition, in the Amsterdam Declaration on Transparency and Reporting (2009), mentioned that the initial causes of the recent economic crisis can be softened by applying a global transparency and accountability system and also a public reporting of ESG performance. Thus, it is also supported the aim of SSE initiative completely. By having a proper transparency of information, good accountability system and good reporting of ESG performance for the companies' disclosures, the companies may

have huge impacts on the world's economy, environmental and social conditions whereby it help to boost a positive image or perspective changes in the society even though the companies have a numerous of stakeholders such as internal and external stakeholders (Nejati, Shah Bin, Shahbudin & Bin Amran, 2010).

Meanwhile, according to Joseph (2013), noted that the sustainability reporting is highly demanded and still visible among scholars (Joseph & Taplin, 2011). Due to extension scope of annual reports, whereby it may no longer provide normal financial information, but also accompaniment has started in providing relevant information to the specific community of stakeholders which also has helped in the emergence of sustainability reporting (Peiyuan, 2007).

By having a set of sustainability reporting, it may create a new pattern swing wherever it is perceived not only about revelation but as a platform or a component of communication procedure among the company and their stakeholders. This offers an occasion to the stakeholders to detect whether their anxiety has been considered or vice versa (Sawani, Mohamed Zain & Darus, 2010). The stakeholders approach offers a balance view because it forces the evaluation in order to clarify the stakes. This can be done by way of proper reporting (Ramachandra & Naha Abu Mansor, 2014).

In total, the ESG rating does add value to a company. The same was supported by the research done by MacLean (2012) that the ESG rating performance can contributed into value. For short term basis, the causality may be weak due to the time frame. Meanwhile for long term basis, a good ESG performance will gave an assurance to the company subsistence especially on sustainability. In addition, it's vital to distinguish

the weaknesses occurred since the characteristic in the metrics were adopted such as self-reported, the smoke and mirror aspects into various grade systems and the lack of significant authentication.

Moving on, most of the companies have started to shift from meeting regulatory conditions into securing sources. The management now moved from handling public relations into finding entree to markets, raw materials, societies and expert labour. Thus, these growths have transformed the ESG related issues into business risks. On top of that, the anxieties that drive the sustainability also carriage serious encounters to the companies' growth and profitability. As for the outcomes, the ESG related issue now gained a management attention especially on supply chain security, expert labour obtainability, market admission, extension arrangement and others related issues. (MacLean, 2012).

Moreover, the improvement in ESG obligations also acts as a risk mitigation aspects, which help to circuitously reduce the total risk of companies and also other applied consequences on credit ratings and probability of default. The ESG obligations should be contained within in credit lending policies which help in the assessment of the sustainable of credit lending practices (Sahut & Pasquini-Descomps, 2015).

As such, a good ESG rating by the companies under F4GBM Index may help to produce a positive impression towards the entire companies' performance and also act as a mitigation tools in order to minimize risk being created on the same.

Since the adoption of ESG rating in F4GBM Index is still new in Bursa Malaysia Berhad and Malaysia in totality, hence the impact of the ESG rating implementation

seems not so clear in terms on how far the public listed companies was doing good with ESG rating and how does the ESG rating may give an influence on the financial performances of the public listed companies with ESG reporting. Additionally, there are very few studies are available on this issue from Bursa Malaysia Berhad. According to Bursa Sustain website, there is an article on introduction of responsible investment which was published in 2018 stated that ESG is characterised as one of the proactive approach which enables investors to combine societal impact with financial returns and maintaining the benefits of portfolio diversity. For other studies, the focus is more on providing guidance on how the listed issuers to embedded sustainability in the companies and to identify, evaluate and manage the EES risks and opportunities. Meanwhile in this study, the focus is more on the investor's assessment of financial ratios towards the ESG scores for the public listed companies in Malaysia sustainability index, F4GBM Index. Due to that constraints, it is very important to have a further study based on this issue.

1.4 Research Questions

With the aim of conducting the analysis of the study, the questions as per the following questions are posed:

1. Do the financial performances have a relationship with ESG rating for public listed companies in F4GBM Index?
2. Do the financial performances have a relationship with environmental rating for public listed companies in F4GBM Index?
3. Do the financial performances have a relationship with social rating for public listed companies in F4GBM Index?

4. Do the financial performances have a relationship with governance rating for public listed companies in F4GBM Index?

1.5 Research Objectives

Overall objective of the study is to further identify the factors that influence ESG rating for public listed companies in F4GBM Index. By having this study, it would help to understand better whether the ESG rating for the public listed companies in the F4GBM Index will be boost up or vice versa and able to provide a valuable evaluation tools for investment purposes. Further, the sub-objectives can be referred as follow:

1. To examine the relationship between financial performances and ESG rating for public listed companies in F4GBM Index.
2. To examine the relationship between financial performances and environmental rating for public listed companies in F4GBM Index.
3. To examine the relationship between financial performances and social rating for public listed companies in F4GBM Index.
4. To examine the relationship between financial performances and governance rating for public listed companies in F4GBM Index.

1.6 Significance of the Study

Since there are lesser studies in examining the factors influence ESG rating for public listed companies in F4GBM Index, hence it is expected to contribute new knowledge in this area. By having this study, it would give an alternative in assessing information and decision making on the performance of the public listed companies via ESG rating in F4GBM Index by the foreign and local investors. On the other hand, it does help

the investors in evaluating whether those participating public listed companies are in compliant with the ESG scoring measurement.

Meanwhile, at the company's level, it able to create a culture and transparency practise in order to support the long term health of the companies. Thus, the companies which are well governed, operate transparently, responsibly and sustainably may increase the shareholder value in long run.

As per the national level, company businesses do not operate in vacuum for long term. Hence, for the company to survive on a global basis, a good implementation of ESG in public listed companies in Malaysia may help the companies able to strive for cross border trade and complex supply chains since there is an increase of environmental issues such as climate change, water scarcity and pollution. Further, the government involvement on this issue will be more focus on the companies to take responsibility for their actions create, through an appropriate guidelines, legislation, taxes and carbon prices.

Meanwhile for the academic research level, by examining a range of ESG factors, it might help to expand the knowledge the differences in ESG factors on how far it will give an impact to different stakeholders such as governments, regulators, employees, customers, community, supplies and the environment. In addition, it might also help the public to understand better whether by incorporating ESG analysis with traditional financial analysis does help to develop further understanding of companies' fair value and their ability to sustain long term returns.

1.7 Scope of the Study

This research is solely conducted on Malaysian public listed companies whom under the listing of F4GBM Index. Secondary data is used to examine the factors that influence ESG rating and the said data were collected from Bloomberg. There are 43 companies listed in the F4GBM Index as of June 2017. Due to data accuracy and availability, a final sample of 31 public listed companies have been selected which the data covered for the 10 years period, from 2007 till 2016. The study covered the whole model of ESG rating rather than separate pillar of ESG rating, as per previous researchers done earlier.

1.8 Organization of the Study

This paper comprises of five chapters. First chapter is the introduction that clarifies the background of the study and states the problem statement, research questions, and research objectives of the study as well as to indicate the significance of the study. Second chapter reviews the literature and empirical evidence of the study related to the research topic. Third chapter details the methodology used in the study that consists of research framework, hypotheses development, measurement of variables, data sources, sampling and techniques of data analysis. Next, fourth chapter is the demonstration of the results, discussion on the statistical analysis and findings of the study. Fifth chapter which is the final chapter to finalize the study and suggests some recommendation for potential exploration in next study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

As for this section, further exploration and discussion will be made on the relevant literature reviews where it focuses on the independent variables and dependent variable. Discussions on the same are separated into two parts. The first section of this chapter represents the underpinning theory which focused on the ESG model and efficient market hypothesis. The last section represents empirical evidence on financial performances such as ESG rating, environmental rating, social rating and governance rating.

2.2 Underpinning Theory

Under this section, further discussion will be covered on ESG model and efficient market hypothesis.

2.2.1 ESG Model

As per information retrieved from ESG Adee Innovations website, ESG also being recognized as a sustainable investing under the class of investing. It's also act as an umbrella term for investment, in which, investors are eager to look for positive earnings and it also carries long period influences on society, environment and the performance of the company's business. As at to date, they are numerous different groups of sustainable investing, such as impact investing, socially responsible investing (SRI), ESG and values based investing. In addition, as per other school of

thought, ESG is also under the umbrella term of SRI, whereby under SRI, there are several categories such as ethical investing, ESG investing and impact investing.

For ESG rating, the said rating was developed by FTSE Russell, whereby it helped to measures the risk and performance in all aspect of ESG areas based on the transparent and reliable designed method. To measure the same, a risk relative scoring procedure will be applied, in order to identify each theme influences indicator applicability and weighting on the company's exposure rather than focusing on a generic or sector aspects. The ESG rating is encompassed of a complete rating that breaks down into fundamental pillar and thematic experiences and scores. In addition, the pillars and themes are built on over three hundred individual indicator valuations that practical to each company's exclusive conditions. The same information can be referred in FTSE Russell website.

2.2.2 Efficient Market Hypothesis

Efficient Market Hypothesis (EMH) is identified as all data about the investment securities such as stocks, which were factored into the prices for those securities. Based on the above assumption, it can be interpreted that a market does not require any advanced analytical experimental from the investors. Further, this hypothesis does not assume that the investors were to be realistic and logical at all times. Retail investors normally will act unintentionally, even though in totality the market is precise. In addition, the hypothesis does not mention that no investors can beat the market (Thune, 2018).

In total, there are three forms under EMH, which are known as weak form, semi strong form and strong form. For the weak form of EMH, it recommends that all historical data is priced into securities via fundamental analysis. The fundamental analysis of securities may offer the investor with material information in order to deliver returns above market averages in short period, but they are no blueprints that the same will occur. Therefore, the fundamental analysis does not deliver long period benefit and also assume that technical analysis will not work.

Secondly, for semi strong form of EMH, it indicates that neither fundamental analysis nor technical analysis can offer valuable benefits to the investor since the latest data are promptly priced into the respective securities.

Finally, the strong form of EMH stated that all data, together with public and private information, are priced into stocks and therefore no investor can increase their benefits over the market entirely. Thus, this form does not indicate that the investors or money managers are incompetent of taking oddly high returns, because that there are always outliers encompassed in the averages.

2.3 Empirical Evidence

Under this section, the study will explore further on the hypotheses development of financial performances and ESG rating, financial performances and environmental rating, financial performances and social rating and financial performances and governance rating.

2.3.1 Financial Performances and ESG Rating

Financial performances also being detected as one of the main indicator to determine the ESG rating. Under financial performances, this study will be discussed further on profitability ratio, credit ratio, liquidity ratio and DuPont analysis ratio which also served as input in the evaluation on ESG rating. The said information will be gathered from Bloomberg Terminal.

The accounting models regularly carries more significant outcomes, whereby it produces positive outcomes than the market models. As an example of an accounting model is the Ohlson (1995) model with ROE, ROA and TQ variables. Moreover, there is a problem in using accounting models whereby the number of samples, as it is limited to yearly or quarterly observations instead of using it for longer periods, which more than ten years. In addition, noted that only a cross sectional study can be used due to the sampling basis only taken into account for one fiscal year (Devalle, Fiandrino & Cantino, 2017). For the said study, fixed effect test can't be measured since it needs broader ranges of sampling years.

The period of observation for sampling purposes also being supported by the research done earlier that the financial performance on the ESG rating may only produce a positive result if the period of study is more than one to two years' time frame or longer time frame. Further, the ESG scores may not reflected the true ESG practices of the companies and it does not allow the users to fully comprehend the ESG reporting and practices in order to score the same objectively due to a shorter time frame (Balatbat, Siew & Carmichael, 2012).

While referring to the correlation made between the ESG rating and financial ratios, studies done by researchers especially on environmental disclosures, noted that the profit performance is negatively correlated with the level of environmental disclosures. The same is due to the environmental reporting practices in Malaysia appear to be differ from those elsewhere due to the maturity of the reporting process. Hence, the said study suggested that to incorporate the political cost variable measurement in order to have a better reflection in the Malaysian environment (Smith, Yahya & Marzuki Amiruddin, 2007).

Meanwhile, for the study conducted by researcher Velte (2017), the ESG performance have a positive impact on accounting based financial performance especially on ROA but no impact on TQ. Further, the governance performance has the strongest impact on financial performance besides environmental and social indicators.

Overall, the financial ratios served as measurement tools for the companies, whereby the companies are being judged on their performance in totality besides on their size, sales volume or market shares. It also helps the companies in developing performance benchmarks within all the industry players as a measurement basis.

On the other hand, by having a good understanding on the structure of ESG rating, it will help to ease the investors' judgement in assessing which securities shall be included in their portfolios in order to gain more returns at an appropriate risk.

The international sustainability ratings are now linked to stock indices such as Dow Jones Sustainability Indexes which were launched in 1999 and the FTSE4 Good Index

Series were launched in 2001. Mostly the companies strive for desired listings on these indices but at the same time there are numerous of rating firms has sprung up to analyse the ESG performance and the ranking of companies (MacLean, 2012). Moreover, the ESG assessment and rating has become vital comparisons into mainstream the ESG in investment markets (Stubbs & Rogers, 2013).

To elaborate further on ESG rating, the developing on a reliable ESG data and useful analytics by Bloomberg Terminal would allow investors to identify the real investment opportunities by enable at least some calculation of outcome probabilities and thus turning uncertainties into actionable risks. The development of a valuation tool is to engage the investor community on pricing externalities in order to clarify any risk and opportunities being associated. This acts as a potential role as bridge between theory and practice (Park & Ravenel, 2013).

By having the ESG rating, it can recognize the impact of the ESG issues especially on the company's reputation, brand, competitive advantage and investment decision making whilst increase the importance of ESG disclosure in totality (Tamimi & Sebastianelli, 2017). Meanwhile, according to Tetrault Sirsly (2015), the ESG measures are relevant to the managers whom are responsible for achieving results by having a sufficient attitude to be integrated into the company strategic choices.

The reputation management of a companies is known as a powerful driver in enhancing the value of ESG reporting. Normally, highest levels for ESG disclosure shall be the international companies working in industries with advanced reputation risk such as financial services, energy and communication (Cuesta & Valor, 2013).

To date, most of the international and domestic public companies are being assessed and appraised on their ESG performance by numerous third-party suppliers of reports and ratings. The users of the said report are mainly from financial institutions, asset managers, institutional investors and other stakeholders. These users are progressively depending on these reports and ratings in order to conduct further assessment and measurement of the company ESG performance over the time and as contrasted to peers (Huber *et al.*, 2017).

As for Malaysia perspective, the present level of environmental reporting and disclosure in Malaysia appears to be low and controlled or can be categorized as general, ad-hoc statements on environmental matters. This is due to the nonappearance of obligatory environmental reporting standards in Malaysia. In addition, the environmental reporting also lacks standardization and lesser informational value (Nazli Nik Ahmad & Sulaiman, 2004). Thus, the accountants in Malaysia shall be expose to the mechanism of environmental reporting further when preparing annual reports.

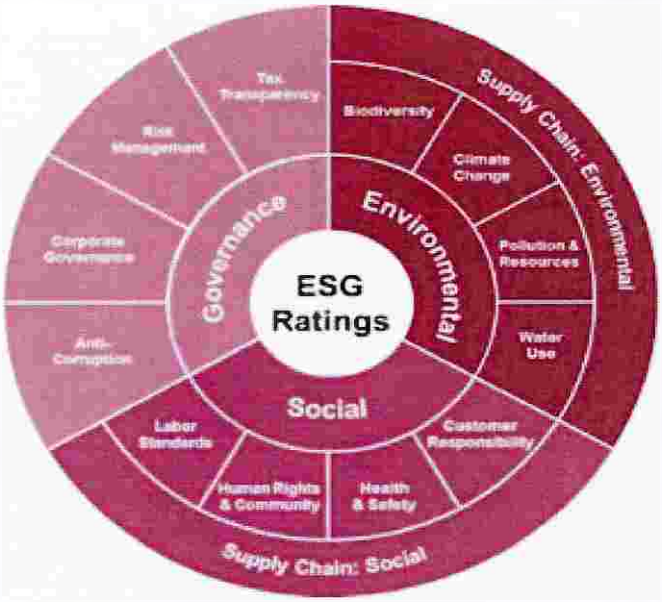

Figure 2.1
ESG Rating Model
Source: FTSE Russell website, 2019

The model above was designed by FTSE Russell by allowing a better thought by investors on a company's exposures and type of the company administration in which the investors would like to invest. ESG issues appeared in multiple dimensions such as environmental, social and governance. Under environmental, there are four main areas such as biodiversity, climate change, pollution and resources and water use. Under social, there are four main areas such as labour standards, human rights and community, health and safety and customer responsibility. Under governance, there are four main areas such as anti-corruption, corporate governance, risk management and tax transparency. Ultimate beneficial of this model is to assist in managing the revelation of ESG characteristics, meet the supervision requirements, integrating the information on ESG into the data needed in securities and portfolio analysis and implementation of awareness in ESG investment tactics (FTSE Russell, 2019).

The features of this model can be divided into six elements, which are known as comprehensive, flexibility and customization, emphasis on materiality, precise rules and focus on data, objective and strong governance and sustainable development goals aligned. Under comprehensive, this ESG rating can be access through online data model. The ESG rating also flexible and customize due to the ability of the data to be processed in meeting the user's expectation and wants. While in quantifiable aspects, the said rating is calculated by using an exposure weighted average and for those material issue will be given a higher scale in fixing the company's ratings. The model also is based on clearly defined rules in order to evaluate a company and the output of the data tool will produce quantitative result rather than qualitative company research reports. Since the independent external committee is constantly supervised and well versed in all aspects in data model, therefore the model also is very objective and strong in terms of governance areas. Further, the said model also supports and aligned with the seven teen UN sustainable development goals which is known as SDGs. This SDGs consists of the fourth teen themes under the framework of ESG. (FTSE Russell, 2019).

ESG rating is based on the scoring earned from the environmental, social and governance statistics for the company. This ESG rating can be retrieved directly from the Bloomberg Terminal. Bloomberg will be conducted the evaluation of the companies ESG scoring by annual basis. The collection of the public ESG information are based on the disclosure done by the companies through corporate social responsibility (CSR) or sustainability reports, annual reports, website and other public sources, as well as through company direct contact. Then, the collected data will be checked and standardized by Bloomberg. Should there is any missing data by the

companies, the ESG rating of the companies will be penalized accordingly by Bloomberg. To date, Bloomberg ESG data covers one hundred and twenty ESG indicators. This includes evaluation on carbon emissions, climate change effect, pollution, waste disposal, renewable energy, resource depletion, supply chain, political contributions, discrimination, diversity, community relations, human rights, cumulative voting, executive compensation, shareholders' rights, takeover defence, staggered boards and independent directors (Huber *et al.*, 2017).

The ESG data is being used to improve the risk analysis done by the companies, which in between it may provide the companies and their investors an information in understanding the growth and productivity opportunities of the companies which associated with a strong ESG performance (Stewart, 2015).

The same also supported by Rose (2017) which states that by having integrated ESG deliberations on an all-inclusive, essential foundation of ideas may help the investment manager to assess good price for the respective asset in which the same is invested so that it helps to avoid overpaying for an investment. ESG rating also help to determine a suitable weighting for a specific asset within a portfolio and by implementing a complete combination of ESG into the investment process, it will help the process of engagement made between the investors and companies on the respective issues, which material to them and finally ESG integration will help the companies to managed the downside risk, or the risk that an asset loses value due to the expansion of a key material risk to the business.

On the other hand, besides the ESG rating information, analysts must have gained an information on how the companies being respond to the issues such as cyber security, human rights and diversity in order for the shareholders able to develop more complete picture of the companies that they may choose to invest in, so that it will help them to develop an understanding on the sustainability of a company's business and value creation (Halliday, 2016).

Further, sustainable development may also give an optimistic impact for the company's competitive advantage and at the same time it may become a threat to the company if they didn't undertake their sustainable development roles and contribution effectively and efficiently due to the increasing global awareness on sustainability.

A good sustainable development will rely entirely on a practicable sustainable business model which should visibly established the innovative actions and new behaviours that will transform in what manner the company interrelates with the world. Further, Michael Porter has stressed out (Porter & Kramer, 2006) that the value chain model which is introduced by him was the best management framework in building sustainability for a company's mechanism of strategy. Moreover, there is a rise of challenge in mixing sustainability hooked on a company's doings across the value chain which needs a development of the original model to replicate innovative challenges and new conducts of undertaking businesses (McPhee, 2014).

By having a good business strategy, it helps to accommodate business needs to strive for strategic corporate sustainability which the commitment to sustainability should be followed by the embedding of sustainability in corporate strategy by the chief

executive officer and the management shall be done by the chief sustainability officer (Lenssen, Van Wassenhove, Pickard, Lenssen & Fernando, 2012).

As for example, the same scenario can be referred to Bursa Malaysia Berhad whereby on 1 November 2017, Ms Emilia Tee has been appointed as Director, Sustainability which required her to lead the development and execution of sustainability strategies, integrating sustainability throughout the company. In so doing, she worked with all departments to ensure that Bursa Malaysia Berhad sustainability efforts enhanced its performance and support the long period interest of the company and the capital market as a whole.

Thus, the sustainable reporting may act as a solution to form a good communication platform made between the companies and stakeholders as whole via the company's total commitment towards sustainability reporting. By having the said reporting it helps to form and expand the awareness on sustainable development ideas. Moreover, the stakeholders may obtain the details needed on the companies' sustainable development from the companies' official website.

Further, as per the international context study done, the Egyptian companies which are listed in the ESG index are to be known to have higher companies' worth and it also noted that there is a positive association made amongst companies with the higher position in the said index and company value by using TQ as a measurement tool (Aboud & Diab, 2018).

Meanwhile, a study done by Buallay (2019) on the level of ESG for banks listed in European Union countries stock exchange shows that ESG results found significant positive impact on the performance but when splitting these indicators may vary the measure individually. The environmental disclosure found to positively affects the ROE and TQ. Social disclosure is negatively affects with ROA, ROE and TQ. Governance disclosure found to negatively affects the financial and operational performance on ROA and ROE.

In Malaysia context, according to the study done by the researchers that there is no significant relationship made between a company's scores on ESG factors and company's scores on performance by via measurement such as profitability using ROE, company's overall value using TQ and cost of capital for the respective public listed companies in F4GBM Index. The said study was conducted in a short time frame which in three years, thus it slightly to impact the quality of the data. In addition, the studies in ESG for Malaysia yet to be sufficiently explored and by doing the same, it will be given a clearer picture to the capital market and policy makers of Malaysia to market an investment products in Malaysia public listed companies which in line with the reporting of their ESG initiatives accordingly. (Atan *et al.*, 2018).

2.3.2 Financial Performances and Environmental Rating

Moving on, further in environmental pillars, studies have been conducted based on environmental disclosures for reporting purposes and the impact to the stakeholders. The same being discussed further below.

For Malaysia context, a study has been conducted by the researchers, whereby it seeks to examine the details and the motivation of management for the intended environmental disclosures in the annual reports of Malaysia companies in designated industries. The research has a several limitations whereby it only covers on the feature of environmental disclosures in annual reports, explanations of the said disclosures and whether the legitimacy theory offers help in giving further explanation of environmental disclosures. The study also suggested to further explore on the reasons for non-disclosure by the companies in their annual reports and to examine the stakeholders needs on environmental disclosures for their decision making purposes (Nazli Nik Ahmad & Sulaiman, 2004).

Meanwhile, for the study done by another researcher whereby to examine the environmental disclosures in annual report for the companies which listed in Bursa Malaysia. According to the research done, it can be determined that the environmental reporting practices in Malaysia is slightly different from other countries due to the maturity of the reporting process. The study suggested for the futures studies, they can embrace the national identity issues in order to improvised the measurement of explanatory variable such political cost variable which is the concentration is more on Malaysian environment (Smith *et al*., 2007).

Further there is also another study conducted on the environmental disclosure quality for the public listed companies in Malaysia for the year 2005 and year 2009 where two years before and two years after the obligatory corporate social responsibility condition of Bursa Malaysia which effective from 2007. As for conclusion, the value of the environmental disclosure was improved in year 2009 compared to year 2005

and companies revealed additional measurable environmental information in year 2009 than in year 2005 (Fatima, Abdullah & Sulaiman, 2015).

Lastly, another research conducted in environmental areas whereby this study is on environmental information practicality to stakeholders in Malaysia. Further, the said research has examined the qualitative and quantitative consequence of environmental data on fund managers' investment and bank officers' lending decision. From the study, they found that the fund managers and bank officers do not incorporate environmental material in their investment and lending decision (Mohd Said, Sulaiman & Nazli Nik Ahmad, 2014).

2.3.3 Financial Performances and Social Rating

Despite the studies being conducted in environmental factor as above, there is also a study conducted in social pillar. As for the international perspective, there is also a study done by the researchers which revealed that there is no significant connection made among board gender diversity and ESG disclosure as of the sample taken from 379 firms of S&P 500 Index within the time frame from 2010 to 2015 (Manita, Bruna, Dang & Houanti, 2018).

In Malaysian perspective, there is a study conducted in social pillar which particularly on women in management. Malaysia has appeared as one of the four tigers of the South East Asia Region, therefore, the society is undergoing rapid changes from traditional values to modern values on women. Even though, the business organization seem to offer an alike chance for service to women, but still women were underrepresented at

all management levels as they necessity to work tougher than men for credit and rewards (Koshal, Gupta & Koshal, 1998).

2.3.4 Financial Performances and Governance Rating

Moreover, there is also a study conducted in governance pillar in Malaysia context. The study was conducted as an extension of the corporate governance reporting initiative (CGI) 2004 whereby reports on Malaysia's first corporate governance ratings. The study can be concluded that the firm size has a strong influence with corporate governance ratings but not for profitability, leverage, growth, market valuation, age, ownership structure and countries of operation (Mohamad Ariff, Kamil Ibrahim & Othman, 2007).

2.4 Chapter Summary

This chapter discuss about financial performances and ESG rating which supported by relevant literatures. Empirical evidence shows various findings between predictor variable and explained variable. Noted that some findings were positive significant whereby some studies show negative significant relationship.

CHAPTER THREE

METHODOLOGY

3.1 Introdnction

This section further clarifies the method applied in analysing the independent variables which represents by profitability ratio, credit ratio, liquidity ratio and DuPont analysis ratio with dependent variable towards the 31 public listed companies in F4GBM Index. Besides, this chapter also interpreted of expected relation which will be explained in the coming subtopics.

3.2 Research Framework

The independent variables are consisting of financial performances such as profitability ratio for Net Income Margin (NIM), credit ratio for Net Debt to EBIT (NDEBIT), liquidity ratio for Long Term Debt to Equity (LTDE) and DuPont analysis ratio Sustainable Growth Rate (SGR). Meanwhile, the dependent variable consists of ESG rating such as environmental scoring, social scoring and governance scoring. In addition, this research framework is developed based on the previous studies done on ESG factors towards the performance of Malaysia public listed companies (Atan *et al.*, 2018).

Hence, the research framework can be referred as per Figure 3.1 below:

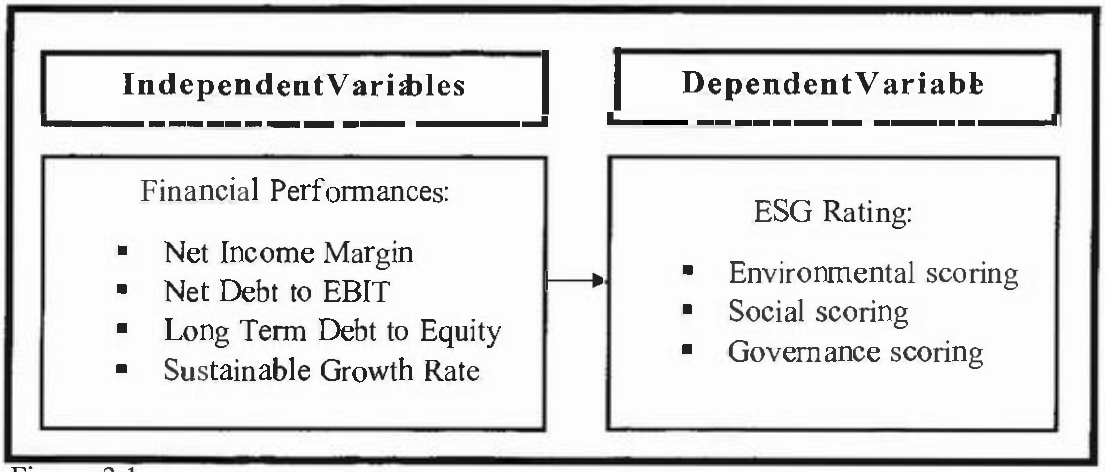

Figure 3.1
Research Framework of the Study

3.3 Hypotheses Development

In general, hypotheses are statements that introduces research questions and proposes expected results. Hence, the research hypotheses (alternative hypotheses) are anticipated below giving to the research questions in Chapter One and relevant literature reviewed in Chapter Two.

H_1: There is a significant relationship between financial performances and ESG rating for public listed companies in F4GBM Index.

H_2: There is a significant relationship between financial performances and environmental rating for public listed companies in F4GBM Index.

H_3: There is a significant relationship between financial performances and social rating for public listed companies in F4GBM Index.

H_4: There is a significant relationship between financial performances and governance rating for public listed companies in F4GBM Index.

3.4 Measurement of Variables

This section covers ESG rating as the dependent variable and whereby for independent variables are signify by the financial performances such as NIM, NDEBIT, LTDE and SGR ratios and their measurements.

3.4.1 Definition of Key Terms

The definition of key terms for this study can be referred to the sub-topic below:

3.4.1.1 ESG Rating

A measurement indicators where investors use to screen investments for the respective company's entire operations (Chen, 2019).

A disclosure scores which applied a multi-dimensional construct based on about 120 quantitative and qualitative measures in order to rate the companies environmental, social and governance policies and practices using publicly available data, annual and sustainability reports, direct communication, press releases, third party research and news items (Tamimi & Sebastianelli, 2017).

3.4.1.2 Financial Performances

A subjective ration of how fit a firm can use assets from its main mode of business and produce revenues (Investopedia, 2019).

A measurement by using a mixture of conventional accounting procedures and risk and return procedures such as financial ratio analysis, benchmarking and budget (Duncan & Elliot, 2004).

Ratios are known as a useful tool in assessing and comparing company performances which equipped with a standardization of guidelines for accounting methods and estimation (Bin Abdullah & Nor Izah Ku Ismail, 2008).

3.4.2 Dependent Variable

According to Coppola (2016), the joint analysis has been made between Governance and Accountability Institute and Bloomberg L.P (Bloomberg LP) on Bloomberg ESG Disclosure scores for S&P 500 Companies reporting versus not reporting on sustainability. The outcome of the studies shows that the companies that publish sustainability reports are scoring higher on the Bloomberg ESG Disclosure scores than companies that do not report as follows (Coppola, 2016):

- Bloomberg "E" disclosure score– The average Bloomberg "E" disclosure score of S&P 500 non-reporters is 5, while reporters enjoy an average of 23, a 360% higher average "E" score for reporters.
- Bloomberg "S" disclosure score – The average Bloomberg "S" disclosure score of S&P 500 non-reporters is 15, while reporters enjoy an average of 30, a 100% higher average "S" score for reporters.
- Bloomberg "G" disclosure score – The average Bloomberg "G" disclosure score of S&P 500 non reporters is 52, while reporters have slightly higher average of 58, a 12% higher average score "G" for reporters.

3.4.3 Independent Variables

As for the financial performances, it will be narrow down into three measurements such as profitability ratio, credit ratio, liquidity ratio and DuPont analysis ratio.

3.4.3.1 Net Income Margin

For the profitability ratio, the measurement is constructed on NIM, the credit ratio measurement is based on NDEBIT, for the liquidity ratio measurement is based on LTDE and for DuPont analysis ratio measurement is based on SGR. For NIM which is also known as net profit margin, may help an investor to fix the comparative cost-effectiveness of business. This ratio is stated as a fraction of sales from the net after tax income of a company's business. An analyst may use this ratio to see if there are any increase or decrease in the long run average net income margin which help an expert to mention to the investors whether the holding of company's shares should be bought or sold. The formulation can be referred as below (Bragg, 2018).

Net Income / Sales

The advanced NIM shows more competence of the company at translating its proceeds into genuine profit. In total, NIM shows the proficiency of a company at its cost control (Bragg, 2018). In addition, there are previous studies used NIM as their financial performance measurement (Zaman & Unsal, 2000; Vogt, Diel, Degenhart, Diel & Rosa, 2015; Varghese & Thaha, 2017).

3.4.3.2 Net Debt to EBIT

For the credit ratio measurement, NDEBIT will be used to evaluate the same. To measure the indebtedness of a company, the NDEBIT will be used in this study. As for the formula, the company's net debt will be divided by its EBIT. If the EBIT value is negative, therefore the ratio can't be calculated. Should the net debt and EBIT remain constant, this ratio may help the user to understand number of years it would consume for a company to cover its liability. Hence, it would be better if this ratio

becoming lower, since it's reflected the company management in handling indebtedness. The same can be referred to Portfolio and Me website. Further, there is a previous study which has been used NDEBIT as a financial performance measurement (Knudsen, Kold & Plenborg, 2017).

Net Debt / EBIT

3.4.3.3 Long Term Debt to Equity

For the liquidity ratio measurement, the LTDE will be used to examine further. It can help to regulate the leverage that a company has taken on and sometimes used to relate the leverage level of a business with those of its players in order to see if the leverage level is rational or not. The formula derived from long term debt of a companies by the combined of its common stock and preferred stock. If the ratio is relatively high, it indicates that a business is at bigger risk of insolvency since it may not be able to cover the interest expense on the debt if its cash flows weakening. This measurement has a disadvantage where the typical debt to equity ratio can be more consistent indicator of the financial feasibility of a business since it contains all short term debt as well. This is particularly the case when a company has a huge sum of debt near-term due within the next year, which would not give the impression in the LTDE ratio. The formula can be referred as below (Bragg, 2018).

Long Term Debt / (Common stock+ Preferred stock)

In addition, the LTDE indicate that the companies with bigger ratios are assumed to be riskier. To simplified, the larger a company's leverage, the higher the ratio of the

same (Bragg, 2018). In addition, there are previous studies used LTDE as their financial performance measurement (Choe, 1994; Altan & Arkan, 2011; Sumathy & Narmadha, 2014).

3.4.3.4 Sustainable Growth Rate

For DuPont analysis ratio, SGR will be used to measure the same. This SGR is the maximum degree of growth that a company can tolerate without having to explain financial leverage or look for external financing. For the company which operates above the SGR, supporting growth can be problematic in the long term due to stressed financial resources or overstretched financial leverage, in which case the company should borrow resources to ease continued growth and the company that fail to achieve their SGR are at risk of inactivity. Further this calculation undertakes that a company wants to uphold a goal capital structure of debt and equity, retain a still dividend payout ratio and fast-track sales as speedily as possible. Achieving SGR is every company's goal but some headwinds such as consumer trends and planning abitity may halt a business from rising and accomplishing it's ideal SGR. The formula of the same can be referred as below (Murphy, 2019).

Return on Equity x (1 – Dividend Payout Ratio)

The higher the SGR indicates that a company is still rising very rapidly. As such, the company may be outlay a lot of its incomes on research and development and may not have sufficient cash left over to make debt payments (Murphy, 2019). In addition, there are previous studies used SGR as their financial performance measurement

(Rajesh, 2014; Momčilović, Begović, Tomašević & Ercegovac, 2015; Arora, Kumar & Verma, 2018).

Hence, by having those model and ratios as a tool of theoretical framework, it may help to explain the relationships among independent variables and dependent variable further.

To summarize, the measurement adapted in the study are as per Table 3.1 below:

Table 3.1 *Summary of Measurement*

Variables	Measurement	Sources
ESG Rating	ESG rating scores	Coppola (2016)
Financial Performance (profitability ratio)	NIM	Zaman and Unsal, (2000), Vogt, Diel, Degenhart, Diel and Rosa, (2015), Varghese and Thaha (2017)
Financial Performance (credit ratio)	NDEBIT	Knudsen, Kold and Plenborg (2017)
Financial Performance (liquidity ratio)	LTDE	Choe (1994), Altan and Arkan (2011), Sumathy and Narmadha (2014)
Financial Performance (DuPont analysis ratio)	SGR	Rajesh (2014), Momčilović, Begović, Tomašević and Ercegovac (2015), Arora, Kumar and Verma (2018)

3.5 Data Sources

This research used secondary data which solely extracted from Bloomberg Terminal. This secondary data comprises of ESG rating, environmental rating, social rating, governance rating and financial performances data such as NIM, NDEBIT, LTDE and SGR ratios for the required research period.

3.6 Sampling

As per the listing of companies under F4GBM Index as at June 2017, they are 43 companies being included in the said index. For this research, the target population will be based on 31 companies since only 31 companies out of 43 companies have sufficient data for independent variables and dependent variable to ensure the accuracy of the assessment being conducted later. This F4GBM Index listing of companies was revised semi-annually in the month of June and month of December by listing department of Bursa Malaysia Berhad. Hence, for the purpose of preparing this study, the cut-off date for the listing would be as at June 2017. A secondary data will be applied for this research and the said information can be retrieved from Bloomberg Terminal.

In addition, the said secondary data will be retrieved from the Bloomberg Terminal would covers the independent variables such as financial performances of profitability ratio, credit ratio, liquidity ratio and DuPont analysis ratio. Meanwhile the dependent variable represents by ESG rating. The data of the same will be taken from the year of 2007 onwards till 2016, even though the launch of F4GBM Index in Bursa Malaysia's capital market in December 2014.

Further, this study is a causal research which intends to identify and to test the hypotheses on the factors influence in ESG rating for public listed companies in F4GBM Index. Hence, the uses of quantitative methods were implemented in order to test the variables and to examine their relationships based the outcome of the research.

The population for this research is defined as all public listed companies under the F4GBM Index. They are ten industry types that related to this study, such as consumer products and services, construction, energy, financial services, health care, industrial products and services, plantation, properties, REITs, technology, telecommunications and media, transportation and logistics and lastly is utilities. The listing was updated as at June 2017. The 43 public listed companies in the F4GBM Index can be referred as per Appendix 2 of this study.

Due to data availability and accuracy issues, only 31 public listed companies will be considered for further population study. The same can be summarized as per Appendix 3 which shows the final list of public listed companies under F4GBM Index.

In addition, this F4GBM Index was designed to highlight the public listed companies in Bursa Malaysia which demonstrating a leading approach in addressing ESG risks. Hence, the said public listed companies passing score are expected to be higher in meeting up the ESG qualification rating which sets out in the Ground Rules of FTSE4Good Index. Meanwhile, the largest two hundred companies in the FTSE Bursa Malaysia EMAS Index are also tagged to ESG rating. The ESG rating cover all assessed companies whilst the public listed companies which under F4GBM Index is a minor sub set of these companies.

3.7 Techniques of Data Analysis

Statistical methods are known as a statistical analysis of raw research data. For this research, the test will be executed to examine whether is there any non-directional relationship made between the independent variables which represent by financial

performances and with dependent variable which represent by ESG rating via Eviews version 10.

3.7.1 Panel Data Analysis

Panel data analysis is a statistical technique which extensively used in analysing two-dimensional panel data. The said information is generally collected over time and over the same persons and then a regression is run over these two dimensions. A common panel data regression model can be referred as:

$$y_{it} = a + bx_{it} + \varepsilon_{it}$$

Where y is the dependent variable and x is the independent variable. Meanwhile, a and b are coefficients and i and t are indices for individuals and time. In addition, the error determined the language to choose off such as fixed effects or random effects. The said analysis has three more-or-less independent approaches such as pooled OLS model, fixed effect model and random effect model according to Wikipedia website.

For this study purposes, tests being conducted by using Fixed Effect Test (FE), Random Effect Test (RE), Hausman Test (HT), Pooled OLS Test (POLS) and Generalized Method of Moments (GMM). The same being discussed as per sub topic below.

Based on the above model, the general equations were build up for the hypotheses testing purposes are presented as below:

$$Y_1 = a + B_1 NIM_{it} + B_1 NDEBIT_{it} + B_1 LTDE_{it} + B_1 SGR_{it} + \mathcal{E}_{it} \quad \ldots\ldots(1)$$

$$Y_2 = a + B_2 NIM_{it} + B_2 NDEBIT_{it} + B_2 LTDE_{it} + B_2 SGR_{it} + \mathcal{E}_{it} \quad \ldots\ldots(2)$$

$$Y_3 = a + B_3NIM_{it} + B_3NDEBIT_{it} + B_3LTDE_{it} + B_3SGR_{it} + \mathcal{E}_{it} \quad \ldots\ldots(3)$$

$$Y_4 = a + B_4NIM_{it} + B_4NDEBIT_{it} + B_4LTDE_{it} + B_4SGR_{it} + \mathcal{E}_{it} \quad \ldots\ldots(4)$$

Where:

Y_1 = ESG disclosure score for a company i in period t;

Y_2 = Environmental disclosure score for a company i in period t;

Y_3 = Social disclosure score for a company i in period t;

Y_4 = Governance disclosure score for a company i in period t;

NIM_{it} = NIM for a company i in period t;

$NDEBIT_{it}$ = NDEBIT for a company i in period t;

$LTDE_{it}$ = LTDE for a company i in period t;

SGR_{it}= SGR for a company i in period t;

a = Coefficient to be estimated;

B_1 = Coefficient to be estimated for ESG disclosure score;

B_2 = Coefficient to be estimated for environmental disclosure score;

B_3 = Coefficient to be estimated for social disclosure score;

B_4 = Coefficient to be estimated for governance disclosure score;

$\mathcal{E}$ = Error term;

i = 1,2,3…n, which means cross sectional units; and

t = 1,2,3…t, are the time periods.

3.7.1.1 Pooled OLS Test

The POLS is being used when there are no exclusive characteristics of persons within the calculation set and no widespread effects transversely time. This method has three more or less independent styles such as independently pooled panels, random effects methods and fixed effect methods. In addition, fixed effect is a practicable generalized least square technique which is asymptotically more competent than POLS when time persistent characteristics are present. Random effects adjust for the serial correlation which is brought by ignored time persistent characteristics, according to Wikipedia website.

3.7.1.2 Random Effect Test

Meanwhile for RE, according to Wikipedia website, it is also known as a variance mechanisms method whereby the method parameter is from random variables. The said test also a kind of hierarchical linear method whereby it undertakes the source of data being processed are drawn from a grading of diverse populations whose variances relate to that grading.

3.7.1.3 Fixed Effect Test

As per Wikipedia website, FE is a statistical method in which the method parameters are fixed or non-random measures. The said test is in contract to random effect methods and mixed methods in which all or some of the model parameters are measured as random variables.

3.7.1.4 Generalized Method of Moments

As for GMM, it is also known as generic method in estimating parameters needed via statistical model. In normality, this method will be applied for the semi parametric model whereby the said parameter is finite dimensional, whereas the data distribution function is unable to be determined which leads to unidentified of maximum likelihood estimation. Further, a certain number of moment conditions are required in order to specify for the model. The said moment conditions would act as functions of the model parameters and the data whereby the parameters true values will be expected as zero. Later, the sample averages of the moment conditions can be minimized into a certain norm. The advantage of using GMM as an estimator, where GMM is known to be consistent, asymptotically normal and efficient in the class of all estimators that do not use any extra information aside from that contained in the moment conditions. In addition, arellano bond serial correlation estimator is known as a generalized method of moments estimator used to estimate dynamic panel data models. Further, arellano-bond serial correlation test has two types of serial correlations which can be recognized as first-order (ARI) and second-order (AR2), according to Wikipedia website.

GMM also help to examine in the empirical finance literature since it is often implying moment conditions that can be used in a straight forward way to estimate parameters without making strong assumptions. If the same rise, it will give an over identifying restrictions that can be used to test the validity of the model specifications (Jagannathan, Skoulakis & Wang, 2002).

3.7.2 Diagnostic Test for Best Model Selection from Fixed Effect, Random Effect, Pooled OLS and Generalized Method of Moments

HT is being implemented as one of the diagnostic test in this study. The same being implemented in order to distinguish among FE result and RE result in panel data analysis. This test is to evaluate the reliability of an estimator with an alternative, whereby the estimator has been indicated as a consistent medium. This is to evaluate whether the statistical method parallel to the data. Moreover, the FE and RE in panel data can be differentiate using HT. Under normal circumstances, the RE is known to be preferred due to higher proficiency under the null hypothesis and FE is lesser reliable whereby it most used under the alternative circumstances, according to Wikipedia website.

As per Wikipedia website, the Breusch and Pagan Lagrangian Multiplier Test (BPLM), also being used to test the RE and POLS regressions. The said test is very important in order to determine either RE or POLS will be applied for this study.

In addition, GMM also is being implemented for diagnostic test in order to examine for further accuracy of employing a model to run the equations for this study. Moreover, by having the diagnostic test covered in this study it will help to addresses the various forms of bias that may occur in this research, according to Wikipedia website.

3.8 Chapter Summary

In this chapter enlightens the dependent and explained variables employed in this paper. Research framework and hypotheses also have been established after the

consideration of previous empirical literature to examine the relationship between predictor variables and explained variable. Furthermore, this chapter also describes models being employed to examine data.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This section explains the data analysis, results of analysis and discussion the findings of this study.

4.2 Descriptive Statistics

For the Table 4.1, illustrates the summary of descriptive statistics of the dataset in this research where consists of mean, median, maximum, minimum, standard deviation, skewness, kurtosis, jarque-bera, probability, sum, sum squared deviation and observations number.

Further Table 4.1 represent the descriptive statistics for ESG disclosure score as a dependent variable, which also inclusive of environmental disclosure score, social disclosure score and governance disclosure score with the relevant independent variables which represent by financial performances ratios. From the results, noted that ESG disclosure score mean is 20.12413, environmental disclosure score mean is 10.44971, social disclosure score mean is 19.52058 and governance disclosure score mean is 42.18926.

For skewness scores, noted that NIM score is -0.66563, NDEBIT score is 15.15156, LTDE score is 4.445396 and SGR score is -10.9654. Meanwhile for kurtosis scores, noted that NIM score is 24.82993, NDEBIT score is 255.4535, LTDE score is 28.29568 and SGR score is 163.5638. From the skewness and kurtosis scores, noted

that the financial performances result indicated that there are not under acceptable range of skewness and kurtosis measurement for a normal distribution. Moreover, skewness and kurtosis scores are important because few investment returns are normally distributed. In addition, investors often predict future returns based on standard deviation, but such predictions assume a normal distribution.

Table 4.1

Descriptive Statistics for ESG Disclosure Score & Financial Performances Ratios

	ESG Disclosure Score	**Environmental Disclosure Score**	**Social Disclosure Score**	**Governance Disclosure Score**	**Net Income Margin**	**Net Debt/ EBIT**	**Long Term Debt/ Equity**	**Sustainable Growth Rate**
Mean	20.12413	10.44971	19.52058	42.18926	18.27287	1.881323	54.69748	4.11971
Median	20.635	6.98	15.315	51.79	15.145	0.53	32.195	4.98
Maximum	52.26	47.97	64.06	73.21	125.89	288.11	746.05	70.23
Minimum	0	0	0	0	-149.36	-43.18	0	-317.74
Std. Dev.	14.40655	12.00112	19.14593	22.38326	19.48771	17.09397	89.2114	21.56162
Skewness	0.145038	1.025973	0.502933	-1.22104	-0.66563	15.15156	4.445396	-10.9654
Kurtosis	2.092516	3.131609	1.925871	2.827362	24.82993	255.4535	28.29568	163.5638
Jarque-Bera	11.7241	54.60908	27.97128	77.41668	6178.276	835075.8	9286.022	339213.5
Probability	0.002845	0	0.000001	0	0	0	0	0
Sum	6238.48	3239.41	6051.38	13078.67	5664.59	583.21	16956.22	1277.11
Sum Sq. Dev.	64132.52	44504.28	-13269	154812.1	117349.2	90290.97	2459230	143655.1
Observations	310	310	310	310	310	310	310	310

4.3 Correlation Matrix

Correlations describes the mutual connection between two variables where it indicates how does one variable affects another variable. The Table 4.2 represent the correlation matrix for ESG disclosure score which are inclusive of environmental disclosure score, social disclosure score and governance disclosure score as a dependent variable. Noted that from the generated results, ESG disclosure score, environmental disclosure score and governance disclosure score are positively related with NDEBIT and LTDE. Meanwhile, the ESG disclosure score, environmental disclosure score and governance disclosure score are negatively related with NIM and SGR.

From the social disclosure score results, noted that the same is positively related with NIM, NDEBIT and LTDE. Further, the social disclosure score is negatively related with SGR.

In addition, as per the said table noted that there is no multicollinearity made between the independent variables such as NIM, NDEBIT, LTDE and SGR. Hence, there no occurrence of high intercorrelations found among the independent variables.

Table 4.2

Correlation Matrix for ESG Disclosure Score & Financial Performances Ratios

Correlation Probability	ESG Disclosure Score	Environmental Disclosure Score	Social Disclosure Score	Governance Disclosure Score	Net Income Margin	Net Debt/ EBIT	Long Term Debt/ Equity	Sustainable Growth Rate
ESG Disclosure Score	1	1	1	1				
	---	---	---	---				
Net Income Margin	-0.029299	-0.035392	0.044160	-0.029106	1			
	0.6073	0.5347	0.4385	0.6097	---			
Net Debt/ EBIT	0.156230*	0.169514*	0.130324*	0.113346*	-0.097628	1		
	0.0058	0.0028	0.0217	0.0461	0.0861	---		
Long Term Debt/ Equity	0.149417*	0.137949*	0.132790*	0.107609*	-0.086633	0.072845**	1	
	0.0084	0.0151	0.0193	0.0584	0.1280	0.2009	---	
Sustainable Growth Rate	-0.063713	-0.069470	-0.04257	-0.053215	0.060810**	-0.004786	-0.016385	1
	0.2634	0.2226	0.4552	0.3504	0.2858	0.9331	0.7738	---

- The data in parentheses indicates the t-value.
- *, **, *** indicate significant at 1%. 5% and 10% level.

4.4 Regression Analysis

For this section, the FE, RE, POLS and also GMM Test were being used to examine the same. The details of the outcome tests can be referred as per the sub-topic below.

4.4.1 Regression Analysis for the Impact on ESG Disclosure Score

The outcomes of the regression analysis for the impact on ESG disclosure score also can be referred as per Appendix 6 to 10 of this study. The extract of the same can be referred as per Table 4.3 below.

From the FE outcomes, it shows that the credit ratio which represent by NDEBIT and liquidity ratio which represent by LTDE have positive relationships with ESG disclosure score. Meanwhile, the profitability ratio which represent by NIM and DuPont analysis ratio which represent by SGR have negative relationships with ESG disclosure score. Meanwhile, NDEBIT is significant at one percent level and LTDE is significant at ten percent level with ESG disclosure score. Further, NIM and SGR are insignificant with ESG disclosure score. Hence, NDEBIT and LTDE may help to contribute a strong ESG disclosure score as compared to NIM and SGR by using FE.

Next for the RE outcomes, it shows that the credit ratio which represent by NDEBIT and liquidity ratio which represent by LTDE have positive relationships with ESG disclosure score. Meanwhile, the profitability ratio which represent by NIM and DuPont analysis ratio which represent by SGR have negative relationships with ESG disclosure score. Meanwhile, NDEBIT is significant at five percent level and LTDE is significant at ten percent level with ESG disclosure score. Further, NIM and SGR are

insignificant with ESG disclosure score. Hence, NDEBIT and LTDE may help to contribute a strong ESG disclosure score as compared to NIM and SGR by using RE.

Further for the POLS outcomes, it shows that the profitability ratio which represent by NIM, credit ratio which represent by NDEBIT and liquidity ratio which represent by LTDE have positive relationships with ESG disclosure score. Meanwhile, the DuPont analysis ratio which represent by SGR has negative relationship with ESG disclosure score. Meanwhile, NDEBIT is significant at ten percent level and LTDE is significant at five percent level with ESG disclosure score. Further, NIM and SGR are insignificant with ESG disclosure score. Hence, NDEBIT and LTDE may help to contribute a strong ESG disclosure score as compared to NIM and SGR by using POLS.

Lastly for the GMM outcomes, it shows that the profitability ratio which represent by NIM, credit ratio which represent by NDEBIT and liquidity ratio which represent by LTDE have positive relationships with ESG disclosure score. Meanwhile, the DuPont analysis ratio which represent by SGR has negative relationship with ESG disclosure score. Meanwhile, NDEBIT is significant at ten percent level and LTDE is significant at five percent level with ESG disclosure score. Further, NIM and SGR are insignificant with ESG disclosure score. Hence, NDEBIT and LTDE may help to contribute a strong ESG disclosure score as compared to NIM and SGR by using GMM.

Table 4.3

Regression Analysis for the Impact on ESG Disclosure Score

Variable	Fixed Effect Test Coefficient	Random Effect Test Coefficient	Pooled OLS Test Coefficient	GMM Test Coefficient
C	18.984420*	18.902500*	18.834540*	18.834540*
	(1.236931)	(1.915995)	(1.249138)	(1.249138)
Net Income Margin	-0.041847	-0.028517	0.000436	0.000436
	(0.050758)	(0.046255)	(0.041724)	(0.041724)
Net Debt / EBIT	0.072105***	0.080444**	0.123015*	0.123015*
	(0.041122)	(0.040626)	(0.047430)	(0.047430)
Long Term Debt / Equity	0.032339*	0.029673*	0.022259**	0.022259**
	(0.010016)	(0.009381)	(0.009079)	(0.009079)
Sustainable Growth Rate	-3.35E-05	-0.007687	-0.040619	-0.040619
	(0.032910)	(0.032414)	(0.037415)	(0.037415)
Total Observations	310	310	310	310
Periods	10	10	10	10

Standard errors in parentheses ***, **, * denoted statistical significance at the 1%, 5% and 10% levels, respectively.

In addition, HT has been conducted in order to examine the impact on ESG disclosure score. The same can be referred as per Table 4.4 below. From the results, noted that RE is the best adoption compared to FE since the probability of the cross-section random is 0.2968.

Table 4.4
Hausman Test for the Impact on ESG Disclosure Score

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section Random	4.908308	4	0.2968

	Fixed	Random	Var (Diff.)	Prob.
Net Income Margin	-0.041847	-0.028517	0.000437	0.5236
Net Debt / EBIT	0.072105	0.080444	0.000041	0.1903
Long Term Debt / Equity	0.032339	0.029673	0.000012	0.4475
Sustainable Growth Rate	-0.000033	-0.007687	0.000032	0.1789

4.4.2 Regression Analysis for the Impact on Environmental Disclosure Score

The outcomes of the regression analysis for the impact on environmental disclosure score also can be referred as per Appendix 11 to 15 of this study. The extract of the same can be referred as per Table 4.5 below.

From the FE outcomes, it shows that the credit ratio which represent by NDEBIT, liquidity ratio which represent by LTDE and DuPont analysis ratio which represent by SGR have positive relationships with environmental disclosure score. Meanwhile, the profitability ratio which represent by NIM has negative relationship with environmental disclosure score. Meanwhile for NDEBIT, LTDE and SGR are significant with environmental disclosure score. Further, NIM is insignificant with environmental disclosure score. Hence, NDEBIT, LTDE and SGR may help to contribute a strong environmental disclosure score as compared to NIM by using FE.

Next for the RE outcomes, it shows that the credit ratio which represent by NDEBIT, liquidity ratio which represent by LTDE and DuPont analysis ratio which represent by SGR have positive relationships with environmental disclosure score. Meanwhile, the profitability ratio which represent by NIM has negative relationship with environmental disclosure score. Meanwhile, NDEBIT, LTDE and SGR are significant with environmental disclosure score. Further, NIM is insignificant with environmental disclosure score. Hence, NDEBIT, LTDE and SGR may help to contribute a strong environmental disclosure score as compared to NIM by using RE.

Further for the POLS outcomes, it shows that the credit ratio which represent by NDEBIT and liquidity ratio which represent by LTDE have positive relationships with environmental disclosure score. Meanwhile, the profitability ratio which represent by NIM and the DuPont analysis ratio which represent by SGR have negative relationships with environmental disclosure score. Meanwhile, NDEBIT and LTDE are significant at with environmental disclosure score. Further, NIM and SGR are insignificant with environmental disclosure score. Hence, NDEBIT and LTDE may help to contribute a good environmental disclosure score as compared to NIM and SGR by using POLS.

Lastly for the GMM outcomes, it shows that the credit ratio which represent by NDEBIT and liquidity ratio which represent by LTDE have positive relationships with environmental disclosure score. Meanwhile, the profitability ratio which represent by NIM and the DuPont analysis ratio which represent by SGR have negative relationships with environmental disclosure score. Meanwhile, NDEBIT and LTDE are significant with environmental disclosure score. Further, NIM and SGR are

insignificant with environmental disclosure score. Hence, NDEBIT and LTDE may help to contribute a strong environmental disclosure score as compared to NIM and SGR by using GMM.

Table 4.5

Regression Analysis for the Impact on Environmental Disclosure Score

Variable	Fixed Effect Test Coefficient	Random Effect Test Coefficient	Pooled OLS Test Coefficient	GMM Test Coefficient
C	9.527976	9.500390	9.528544	9.528544
	(0.980480)	(1.578936)	(1.039586)	(1.039586)
Net Income Margin	-0.020120	-0.015430	-0.00306	-0.003060
	(0.040235)	(0.036963)	(0.034725)	(0.034725)
Net Debt / EBIT	0.065408	0.072627	0.112065	0.112065
	(0.032596)	(0.032240)	(0.039473)	(0.039473)
Long Term Debt / Equity	0.019436	0.018892	0.016789	0.016789
	(0.007939)	(0.007480)	(0.007556)	(0.007556)
Sustainable Growth Rate	0.025052	0.014893	-0.036940	-0.036940
	(0.026087)	(0.025730)	(0.031139)	(0.031139)
Total Observations	310	310	310	310
Periods	10	10	10	10

In addition, HT has been conducted in order to examine the impact on environmental disclosure score. The same can be referred as per Table 4.6 below. From the results, noted that FE is the best adoption compared to RE since the probability of the cross-section random is 0.0587.

Table 4.6
Hausman Test for the Impact on Environmental Disclosure Score

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section Random	9.096417	4	0.0587

	Fixed	Random	Var (Diff.)	Prob.
Net Income Margin	-0.02012	-0.01543	0.000253	0.7681
Net Debt / EBIT	0.065408	0.072627	0.000023	0.1332
Long Term Debt / Equity	0.019436	0.018892	0.000007	0.8381
Sustainable Growth Rate	0.025052	0.014893	0.000019	0.0182

4.4.3 Regression Analysis for the Impact on Social Disclosure Score

The outcomes of the regression analysis for the impact on social disclosure score also can be referred as per Appendix 16 to 20 of this study. The extract of the same can be referred as per Table 4.7 below.

From the FE outcomes, it shows that the credit ratio which represent by NDEBIT, liquidity ratio which represent by LTDE and DuPont analysis ratio which represent by SGR have positive relationships with social disclosure score. Meanwhile, the profitability ratio which represent by NIM has negative relationship with social disclosure score. Meanwhile for NDEBIT, LTDE and SGR are significant with social disclosure score. Further, NIM is insignificant with social disclosure score. Hence, NDEBIT, LTDE and SGR may help to contribute a strong social disclosure score as compared to NIM by using FE.

Next for the RE outcomes, it shows that the credit ratio which represent by NDEBIT, liquidity ratio which represent by LTDE and DuPont analysis ratio which represent by SGR have positive relationships with social disclosure score. Meanwhile, the profitability ratio which represent by NIM has negative relationship with social disclosure score. Meanwhile, NDEBIT, LTDE and SGR are significant with social disclosure score. Further, NIM is insignificant with social disclosure score. Hence, NDEBIT, LTDE and SGR may help to contribute a strong social disclosure score as compared to NIM by using RE.

Further for the PGLS outcomes, it shows that the profitability ratio which represent by NIM, credit ratio which represent by NDEBIT and liquidity ratio which represent by LTDE have positive relationships with social disclosure score. Meanwhile, the DuPont analysis ratio which represent by SGR has negative relationship with social disclosure score. Meanwhile, NIM, NDEBIT and LTDE are significant at with social disclosure score. Further, SGR is insignificant with social disclosure score. Hence, NIM, NDEBIT and LTDE may help to contribute a strong social disclosure score as compared to SGR by using POLS.

Lastly for the GMM outcomes, it shows that the profitability ratio which represent by NIM, credit ratio which represent by NDEBIT and liquidity ratio which represent by LTDE have positive relationships with social disclosure score. Meanwhile, the DuPont analysis ratio which represent by SGR has negative relationship with social disclosure score. Meanwhile, NIM, NDEBIT and LTDE are significant with social disclosure score. Further, SGR is insignificant with social disclosure score. Hence, NIM,

NDEBIT and LTDE may help to contribute a strong social disclosure score as compared to SGR by using GMM.

Table 4.7

Regression Analysis for the Impact on Social Disclosure Score

Variable	Fixed Effect Test Coefficient	Random Effect Test Coefficient	Pooled OLS Test Coefficient	GMM Test Coefficient
C	18.125890	17.742160	16.635230	16.635230
	(1.562379)	(2.673952)	(1.667480)	(1.667480)
Net Income Margin	-0.058940	-0.027210	0.069231	0.069231
	(0.064113)	(0.059564)	(0.055698)	(0.055698)
Net Debt / EBIT	0.082961	0.090057	0.142922	0.142922
	(0.051941)	(0.051453)	(0.063315)	(0.063315)
Long Term Debt / Equity	0.040513	0.037441	0.027659	0.027659
	(0.012651)	(0.012015)	(0.012120)	(0.012120)
Sustainable Growth Rate	0.024206	0.014136	-0.039190	-0.039190
	(0.041569)	(0.041079)	(0.049946)	(0.049946)
Total Observations	310	310	310	310
Periods	10	10	10	10

In addition, HT has been conducted in order to examine the impact on social disclosure score. The same can be referred as per Table 4.8 below. From the results, noted that RE is the best adoption compared to FE since the probability of the cross-section random is 0.2541.

Table 4.8
Hausman Test for the Impact on Social Disclosure Score

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section Random	5.340852	4	0.2541

	Fixed	Random	Var (Diff.)	Prob.
Net Income Margin	-0.05894	-0.02721	0.000563	0.1810
Net Debt / EBIT	0.082961	0.090057	0.000051	0.3180
Long Term Debt / Equity	0.040513	0.037441	0.000016	0.4382
Sustainable Growth Rate	0.024206	0.014136	0.000041	0.1137

4.4.4 Regression Analysis for the Impact on Governance Disclosure Score

The outcomes of the regression analysis for the impact on governance disclosure score also can be referred as per Appendix 21 to 25 of this study. The extract of the same can be referred as per Table 4.9 below.

From the FE outcomes, it shows that the credit ratio which represent by NDEBIT, liquidity ratio which represent by LTDE have positive relationships with governance disclosure score. Meanwhile, the profitability ratio which represent by NIM and DuPont analysis ratio which represent by SGR have negative relationships with governance disclosure score. Meanwhile for NDEBIT and LTDE are significant with governance disclosure score. Further, NIM and SGR are insignificant with governance disclosure score. Hence, NDEBIT and LTDE may help to contribute a strong governance disclosure score as compared to NIM and SGR by using FE.

Next for the RE outcomes, it shows that the credit ratio which represent by NDEBIT, liquidity ratio which represent by LTDE have positive relationships with governance disclosure score. Meanwhile, the profitability ratio which represent by NIM and DuPont analysis ratio which represent by SGR have negative relationships with governance disclosure score. Meanwhile, NDEBIT and LTDE are significant with governance disclosure score. Further, NIM and SGR are insignificant with governance disclosure score. Hence, NDEBIT and LTDE may help to contribute a strong governance disclosure score as compared to NIM and SGR by using RE.

Further for the POLS outcomes, it shows that the credit ratio which represent by NDEBIT and liquidity ratio which represent by LTDE have positive relationships with governance disclosure score. Meanwhile, the profitability ratio which represent by NIM and the DuPont analysis ratio which represent by SGR have negative relationships with governance disclosure score. Meanwhile, NDEBIT and LTDE are significant at with governance disclosure score. Further, NIM and SGR are insignificant with governance disclosure score. Hence, NDEBIT and LTDE may help to contribute a strong governance disclosure score as compared to NIM and SGR by using POLS.

Lastly for the GMM outcomes, it shows that the credit ratio which represent by NDEBIT and liquidity ratio which represent by LTDE have positive relationships with governance disclosure score. Meanwhile, the profitability ratio which represent by NIM and the DuPont analysis ratio which represent by SGR have negative relationships with governance disclosure score. Meanwhile, NDEBIT and LTDE are significant with governance disclosure score. Further, NIM and SGR are insignificant

with governance disclosure score. Hence, NDEBIT and LTDE may help to contribute a strong governance disclosure score as compared to NIM and SGR by using GMM.

Table 4.9

Regression Analysis for the Impact on Governance Disclosure Score

Variable	Fixed Effect Test Coefficient	Random Effect Test Coefficient	Pooled OLS Test Coefficient	GMM Test Coefficient
C	39.473530	39.974700	40.946610	40.946610
	(2.109925)	(2.789949)	(1.962872)	(1.962872)
Net Income Margin	-0.008000	-0.004790	-0.008290	-0.008290
	(0.086582)	(0.075606)	(0.065564)	(0.065564)
Net Debt / EBIT	0.084311	0.097448	0.137783	0.137783
	(0.070145)	(0.068867)	(0.074531)	(0.074531)
Long Term Debt / Equity	0.055344	0.044104	0.024711	0.024711
	(0.017085)	(0.015512)	(0.014267)	(0.014267)
Sustainable Growth Rate	-0.078610	-0.071280	-0.052590	-0.052590
	(0.056138)	(0.054867)	(0.058794)	(0.058794)
Total Gbservations	310	310	310	310
Periods	10	10	10	10

In addition, HT has been conducted in order to examine the impact on governance disclosure score. The same can be referred as per Table 4.10 below. From the results, noted that RE is the best adoption compared to FE since the probability of the cross-section random is 0.3735.

Table 4.10
Hausman Test for the Impact on Governance Disclosure Score

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section Random	4.247750	4	0.3735

	Fixed	Random	Var (Diff.)	Prob.
Net Income Margin	-0.008000	-0.004790	0.00178	0.9393
Net Debt / EBIT	0.084311	0.097448	0.000178	0.3243
Long Term Debt / Equity	0.055344	0.044104	0.000051	0.1165
Sustainable Growth Rate	-0.078610	-0.07128	0.000141	0.5371

4.5 Diagnostic Test

For diagnostic test purposes, HT and AR were used to examine further all the hypotheses in this research. The details of the same are covered as per sub-topic below.

4.5.1 Diagnostic Test for the Impact on the ESG Disclosure Score

For this section, the outcome of the said testing can be referred as per Appendix 26 of this study. The AR was used in line to estimate the panel data models are dynamic or vice versa. In addition, there are two types of AR, namely AR1 and AR2 in order to evaluate the same.

With reference to Table 4.11, noted that the credit ratio which represent by NDEBIT and DuPont analysis ratio which represent by SGR are significant with ESG disclosure score under the HT. Hence, it shows that NDEBIT and SGR have impact in producing strong ESG disclosure score. Meanwhile for AR, noted that AR2 is significant with

ESG disclosure score with the probability score of 0.8970 compared to AR1 for this study.

Table 4.11

Diagnostic Test for the Impact on ESG Disclosure Score

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Net Income Margin	0.046826	0.032083	1.459524	0.1456
Net Debt / EBIT	0.031565	0.003433	9.194240	0.0000
Long Term Debt / Equity	4.05E-03	0.006407	0.632510	0.5276
Sustainable Growth Rate	0.020287	0.005815	3.488984	0.0006

Cross-section fixed (first differences)			
Mean dependent var	1.993047	S.D. dependent var	8.830265
S.E. ofregression	9.03E+00	Sum squared resid	22404.05
J-statistic	7.64E-31	Instrument rank	4

Test Order	m-Statistic	rho	SE (rho)	Prob.
AR(1)	1.530232	1632.3790	1066.753	0.1260
AR(2)	-0.129444	-134.3789	1038.127	0.8970

4.5.2 Diagnostic Test for the Impact on Environmental Disclosure Score

For this section, the outcome of the said testing can be referred as per Appendix 27 of this study. The AR was used in line to estimate the panel data models are dynamic or vice versa. In addition, there are two types of AR, namely AR1 and AR2 in order to evaluate the same.

With reference to Table 4.12, noted that the credit ratio which represent by NDEBIT and DuPont analysis ratio which represent by SGR are significant with environmental disclosure score under the HT. Hence, it shows that NDEBIT and SGR have impact in producing strong environmental disclosure score. Meanwhile for AR, noted that AR2 is significant with environmental disclosure score with the probability score of 0.5026 compared to AR1 for this study.

Table 4.12

Diagnostic Test for the Impact on Environmental Disclosure Score

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Net Income Margin	0.022111	0.019732	1.120569	0.2634
Net Debt / EBIT	0.032623	0.0027	12.0814	0.0000
Long Term Debt / Equity	0.002991	0.003981	0.751245	0.4531
Sustainable Growth Rate	0.034993	0.002685	13.03231	0.0000

Cross-section fixed (first differences)			
Mean dependent var	1.500824	S.D. dependent var	7.141903
S.E. ofregression	7.21E+00	Sum squared resid	14304.43
J-statistic	3.65E-31	Instrument rank	4

Test Order	m-Statistic	rho	SE (rho)	Prob.
AR (1)	1.735988	1147.611	661.070673	0.0826
AR(2)	-0.670438	-408.878	609.865856	0.5026

4.5.3 Diagnostic Test for the Impact on Social Disclosure Score

For this section, the outcome of the said testing can be referred as per Appendix 28 of this study. The AR was used in line to estimate the panel data models are dynamic or vice versa. In addition, there are two types of AR, namely AR1 and AR2 in order to evaluate the same.

With reference to Table 4.13, noted that the DuPont analysis ratio which represent by SGR is significant with social disclosure score under the HT. Hence, it shows that SGR has impact in producing strong social disclosure score. Meanwhile for AR, noted that AR2 is significant with social disclosure score with the probability score of 0.5521 compared to AR1 for this study.

Table 4.13

Diagnostic Test for the Impact on Social Disclosure Score

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Net Income Margin	0.035897	0.03614	0.993287	0.3214
Net Debt / EBIT	0.006437	0.004308	1.494086	0.1363
Long Term Debt / Equity	0.007389	0.009234	0.800155	0.4243
Sustainable Growth Rate	0.059469	0.005521	10.77175	0.0000

Cross-section fixed (first differences)			
Mean dependent var	2.493763	S.D. dependent var	11.22966
S.E. ofregression	1.14E+01	Sum squared resid	35774.2
J-statistic	3.28E-31	Instrument rank	4

Test Order	m-Statistic	rho	SE (rho)	Prob.
AR(1)	1.030621	1922.357	1865.241	0.3027
AR(2)	-0.59465	-1073.859	1805.867	0.5521

4.5.4 Diagnostic Test for the Impact on Governance Disclosure Score

For this section, the outcome of the said testing can be referred as per Appendix 29 of this study. The AR was used in line to estimate the panel data models are dynamic or vice versa. In addition, there are two types of AR, namely AR1 and AR2 in order to evaluate the same.

With reference to Table 4.14, noted that the credit ratio which represent by NDEBIT and DuPont analysis ratio which represent by SGR are significant with governance disclosure score under the HT. Hence, it shows that NDEBIT and SGR have impact in producing strong governance disclosure score. Meanwhile for AR, noted that AR2 is significant with social disclosure score with the probability score of 0.7899 compared to AR1 for this study.

Table 4.14
Diagnostic Test for the Impact on Governance Disclosure Score

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Net Income Margin	0.104471	0.074416	1.403869	0.1615
Net Debt/ EBIT	0.055824	0.01524	3.662885	0.0003
Long Term Debt / Equity	0.000957	0.012372	0.077317	0.9384
Sustainable Growth Rate	-0.05398	0.019254	-2.803700	0.0054

Cross-section fixed (first differences)			
Mean dependent var	2.739391	S.D. dependent var	17.07217
S.E. of regression	1.72E+01	Sum squared resid	81499.25
J-statistic	3.33E-3 I	Instrument rank	4

Test Order	m-Statistic	rho	SE (rho)	Prob.
AR(1)	-1.015670	-4496.979	4427.599	0.3098
AR(2)	0.266446	1177.200	4418.150	0.7899

4.6 Summary of Hypotheses Testing

The Table 4.15 below represent the summary of hypotheses testing for this study:

Table 4.15
Summary of Hypotheses Testing

Hypotheses (Alternative)	Findings	Accept / Reject
H_1: There is a significant relationship between financial performances and ESG rating for public listed companies in F4GBM Index	Positively significant for NDEBIT and LTDE ratios both for POLS and GMM	Accept
	Not significant for NIM and SGR both in POLS and GMM	Reject
	(Table 4.3)	
H_2: There is a significant relationship between financial performances and environmental rating for public listed companies in F4GBM Index	Positively significant for NDEBIT and LTDE ratios both for POLS and GMM	Accept
	Not significant for NIM and SGR both in POLS and GMM	Reject
	(Table 4.5)	

Table 4.15 (Continued)

Hypotheses (Alternative)	Findings	Accept / Reject
H_3: There is a significant relationship between financial performances and social rating for public listed companies in F4GBM Index	Positively significant for NIM, NDEBIT and LTDE ratios both for POLS and GMM	Accept
	Not significant for SGR both in POLS and GMM	Reject
	(Table 4.7)	
H_4: There is a significant relationship between financial performances and governance rating for public listed companies in F4GBM Index	Positively significant for NDEBIT and LTDE ratios both for POLS and GMM	Accept
	Not significant for NIM and SGR both in POLS and GMM	Reject
	(Table 4.9)	

4.7 Discussion of Findings

ESG disclosure acts as a valuation tool specially to determine the risks and opportunities engaged with the company (Park & Ravenel, 2013). Thus, as investors, they able to be recognized the impact of the company reputation, competitive advantage and investment decision making while having ESG disclosure intact with (Tamimi & Sebastianelli, 2017). At the same time, the company may enhance the company strategic choices in achieving the sustainability standards which being implemented accordingly (Tetrault Sirsly, 2015).

Meanwhile as per Nazli Nik Ahmad and Sulaiman (2004), that the level of environmental reporting and disclosure in Malaysia is still little and restructured due to the absence of mandatory environmental reporting. Further, when conducting this study, the data needed for all 43 public listed companies are limited due to disclosure

for ESG it is not a compulsory in Malaysia during the observation period done in this study. Apparently, the exposures of ESG disclosure and it's benefits need to be addressed clearly to the company, accountants and investors if they wish to maximize their added value entirely. This will increase the understanding of growth, productivity and opportunities associated with strong ESG performance (Stewart, 2015).

According to the researchers, in order to get rigid outcomes of study is by adopting a long period of assessment, where more than 10 years. In addition, this study was conducted from 2007 to 2016 only, since there is a limitation in retrieving data more than 10 years period of observations (Devalle *et al.*, 2017).

Moreover, the study conducted by another researchers' state that profit performance is negatively correlated with environmental disclosure (Smith *et al.*,2007). The same being evidenced in the section 4.6 of the chapter four whereby the profitability ratio which represent by NIM is not significant as per study conducted in POLS and GMM as per Table 4.5. Therefore, it being rejected by this study. The same can be referred as per Appendix 30 for further comparisons when a study being tested for profitability ratio which represent by ROA which also used the same regression analysis such as FE, RE, HT, POLS and GMM.

Meanwhile, a study done by Buallay (2019) on the level of ESG for banks listed in European Union countries stock exchange that ESG results found significant positive impact on the performance but when splitting these indicators may vary the measure individually. The environmental disclosure found to positively affects the ROE and TQ. Social disclosure is negatively affects with ROA, ROE and TQ. This also can be

evidenced by the findings in the section 4.6 that the SGR is not significant with social rating under PGLS and GMM measurement. Governance disclosure found to negatively affects the financial and operational performance on RGA and RGE. This also can be evidenced by the findings in the section 4.6 that profitability ratio which represent by NIM and DuPont analysis ratio which represent by SGR are not significant in PGLS and GMM measurements for governance rating.

In Malaysia context, according to the study done by researchers states that there is no significant relationship made between a company's ESG factors and firm performance by using measurement such as profitability measurement such as RGE, firm value measurement such as TQ and cost of capital value for the public listed companies in F4GBM Index (Atan *et al.*, 2018). This also can be evidenced that as per section 4.6 of the hypotheses findings that profitability ratio which represent by NIM and DuPont analysis ratio which represent by SGR are not significant under the measurement of POLS and GMM for ESG rating.

Based on the discussion above, noted that the summary of hypotheses testing outcomes are implicated by the literature review which were discussed in this section especially on profitability ratio which represent by NIM and DuPont analysis ratio which represent by SGR in PGLS and GMM.

4.8 Chapter Summary

Based on the tests conducted in this section, noted where, there was a significant relationship of independent variables and dependent variable when the probability of

significance level is less than 0.05, whereas when it is considered as insignificant relationship when the probability is more than 0.05 of the significance level.

On top of that, the descriptive statistics, correlation matrix, regression analysis and diagnostic test have been conducted based on the hypotheses in this study. In conclusion, the credit ratio which represent by NDEBIT and liquidity ratio which represent by LTDE are positively significant for ESG rating, environmental rating and governance rating under POLS and GMM. Further, the profitability ratio which represent by NIM and DuPont analysis ratio which represent by SGR are not significant for ESG rating, environmental rating and governance rating under POLS and GMM. Meanwhile for social rating, NIM, NDEBIT and LTDE are positively significant under the test conducted by POLS and GMM but it is not significant for SGR under the test conducted by POLS and GMM.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Introduction

This section summarizes the outcomes of this paper. Furthermore, limitations of the research and future scope will be covered at the end of this section.

5.2 Summary of Findings

This research is to study the factors that influence ESG rating for public listed companies in F4GBM Index. The independent variables are from financial performances such as profitability ratio which represent by NIM, credit ratio which represent by NDEBIT, liquidity ratio which represent by LTDE and DuPont analysis ratio which represent by SGR. The dependent variable is from ESG rating and the sub topic of ESG rating such as environmental, social and governance rating.

There are 43 public listed companies included in the F4GBM Index as of June 2017. Due to accuracy and completion of data, only 31 public listed companies were selected for testing purposes. The observation period covers from year 2007 to 2016 which equivalent to 10 years of data with 310 number of observations.

Several tests have been used in order to test the hypotheses in the study such as descriptive statistics, correlation matrix, regression analysis such as FE, RE, POLS and GMM and also diagnostic testing using HT and GMM.

From the testing done, noted that the independent variables which consist of financial performances such as NDEBIT, LTDE are positive significant with ESG rating but NIM and SGR are having insignificant relationships with the dependent variable ESG rating which evidenced via POLS and GMM.

Whereas environmental pillar, noted that the independent variables which consist of financial performances such as NDEBIT, LTDE are positive significant with environmental rating but NIM and SGR are having insignificant relationships with the dependent variable, environmental rating which evidenced via POLS and GMM.

For social pillar, noted that the independent variables which consist of financial performances such as NIM, NDEBIT, LTDE are positive significant with social rating but SGR is having an insignificant relationship with the dependent variable, social rating which evidenced via POLS and GMM.

Lastly for governance pillar, noted that the independent variables which consist of financial performances such as NDEBIT, LTDE are positive significant with governance rating but NIM and SGR are having insignificant relationships with the dependent variable, governance rating which evidenced via POLS and GMM.

5.3 Research Contributions

There is lesser empirical literature studied about the direct impact of the financial performances on ESG rating. Hence, this study proves that the financial performances which were tested in this study shown outcomes of positive significant relationship and insignificant relationship accordingly.

Further, a profitability ratio is a measure of profitability and its act as a measurement of company's performance. Credit ratio is to show in terms of percentage on how the company income were taken up by the company obligation. This would help to justify whether the company is good in managing credit risk. Moreover, the liquidity ratio would help to indicate the company's current assets will be appropriate or not adequate to meet up the company's obligation whenever they become outstanding. Meanwhile the DuPont analysis ratio would help to justify whether how the company can increase their return for the investors both foreign and local.

This research reveals new empirical knowledge about the financial performances itself and how does it help to rise the knowledge of the connection made amid the financial performances and the ESG rating for the public listed companies in F4GBM Index.

5.4 Policy Implications

The discoveries of the research are anticipated to contribute new horizon of knowledge in this area. Further, it would give alternatives for the foreign and local investors in Bursa Malaysia Berhad in assessing and to made decision based on the performance of the public listed companies via ESG rating in F4GBM Index. In addition, it will help the investors in evaluation process whether those participating public listed companies are in compliant with the ESG scoring measurement.

As for the company level, it does help the company in determining whether that the company able to maximize the value worth of the company and attract new investors into the company via shareholdings while maintaining a healthy and sustained financial performances in totality.

5.5 Limitations of the Study

From the descriptive statistics done in chapter four of this study, noted that this study is having a limitation on the skewness and kurtosis outcomes whereby the scores of NIM, NDEBIT, LTDE and SGR are more than two points.

5.6 Scope of Future Research

There are several scopes of futures research which have been identified for this study. The same where discussed as per paragraph below.

This study relies mainly on quantitative analysis as based research approach. Future research might follow up with face to face interview with the person in charge of the selected public listed companies in F4GBM Index, under this research in order to understand more on the impact of ESG rating towards their financial performances.

The empirical study of this research focused on the historical period of ten years, from the period of 2007 to 2016. In future research, a longer time frame should be carried out to get more accurate results and findings.

To add up more independent variables such as price and volume of the public listed companies share details in F4GBM Index besides financial performances for future research.

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APPENDICES

Appendix 1: Sample of Generated Data from Bloomberg Terminal

Ticker: MAY MK Equity | Periodicity: Annuals | Currency: MYR | Note: Years shown on the report are Fiscal Years | Company: Malayan Banking Bhd

Filing: Most Recent

Overview

For the period ending	Original:2008 A 2008-6-30	Original:2009 A 2009-6-30	Restated:2010 A 2010-6-30	Original:2011 A 2011-6-30	Restated:2012 A 2012-12-31	Original:2013 A 2013-12-31	Restated:2014 A 2014-12-31	Original:2015 A 2015-12-31	Original:2016 A 2016-12-31	Current 2017-11-22
ESG Disclosure Score	16.67	22.37	31.14	22.81	28.07	30.70	35.96	35.96	37.28	37.28
Environmental										
Environmental Disclosure Score		8.04	16.07	5.36	5.36	5.36	10.71	10.71	13.39	13.39
Paper Consumption									5.29	
Social										
Social Disclosure Score	15.00	21.67	30.00	28.33	48.33	53.33	58.33	58.33	58.33	58.33
Number of Employees	24,000.00	39,684.00	40,000.00	41,886.00	47,233.00	47,771.00	47,041.00	45,958.00	43,976.00	
Employee Turnover %		5.93	5.89	12.59	10.54	12.65	14.00	8.27	15.00	
% Employees Unionized					70.00	70.00	34.46	19.50	20.72	
% Women in Workforce					54.00	53.37	53.75	54.35	55.00	
% Women in Mgt		18.99	18.99	27.36	31.00	31.00	31.00	35.00	30.00	
Fatalities - Total									0.00	
Community Spending						66.46	77.00	65.72	66.00	
Governance										
Governance Disclosure Score	51.79	51.79	62.50	51.79	51.79	57.14	62.50	62.50	62.50	62.50
Size of the Board	10.00	7.00	11.00	11.00	12.00	11.00	12.00	10.00	11.00	
Indep Directors	5.00	4.00	7.00	7.00	9.00	8.00	9.00	7.00	8.00	
% Indep Directors	50.00	57.14	63.64	63.64	75.00	72.73	75.00	70.00	72.73	
Board Duration (Years)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	
# Board Meetings	15.00	24.00	21.00	22.00	18.00	15.00	13.00	15.00	14.00	
Board Mtg Attendance	96.20	94.81	88.88	97.52	94.50	97.00	93.66	93.50	92.95	

Ticker: MAY MK Equity | Periodicity: Annuals | Currency: MYR | Note: Years shown on the report are Fiscal Years | Company: Malayan Banking Bhd

Filing: Most Recent

Environmental

	Original:2009 A	Restated:2010 A	Original:2011 A	Restated:2012 A	Original:2013 A	Restated:2014 A	Original:2015 A	Original:2016 A	Current
For the period ending	2009-6-30	2010-6-30	2011-6-30	2012-12-31	2013-12-31	2014-12-31	2015-12-31	2016-12-31	2017-11-22
Environmental Disclosure Score	8.04	16.07	5.36	5.36	5.36	10.71	10.71	13.39	13.39
Paper Consumption									5.29
Renewable Electricity Target Policy	n/a	n/a	n/a	n/a	n/a	n/a	No	No	
Energy Efficiency Policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Emissions Reduction Initiatives	Yes	Yes	No	No	No	Yes	Yes	Yes	
Environmental Supply Chain Management	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Green Building Policy	No	No	No	No	No	No	No	No	
Waste Reduction Policy	Yes	Yes	No	No	No	Yes	Yes	Yes	
Water Policy	No	No	No	No	No	No	No	Yes	
Sustainable Packaging	No	No	No	No	No	No	No	No	
Environmental Quality Management Policy	No	No	No	No	No	No	No	No	
Climate Change Opportunities Discussed	No	No	No	No	No	No	No	No	
Risks of Climate Change Discussed	No	No	No	No	No	No	No	No	
Climate Change Policy	No	Yes	No	No	No	No	No	No	
New Products - Climate Change	No	Yes	No	No	No	No	No	No	
Biodiversity Policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Verification Type	No	No	No	No	No	Yes	Yes	Yes	

Ticker: MAY MK Equity | Periodicity: Annuals | Currency: MYR | Note: Years shown on the report are Fiscal Years | Company: Malayan Banking Bhd

Filing: Most Recent

Social

For the period ending	Original:2008 A 2008-6-30	Original:2009 A 2009-6-30	Restated:2010 A 2010-6-30	Original:2011 A 2011-6-30	Restated:2012 A 2012-12-31	Original:2013 A 2013-12-31	Restated:2014 A 2014-12-31	Original:2015 A 2015-12-31	Original:2016 A 2016-12-31	Current 2017-11-22
Social Disclosure Score	15.00	21.67	30.00	28.33	48.33	53.33	58.33	58.33	58.33	58.33
Number of Employees	24,000.00	39,684.00	40,000.00	41,886.00	47,233.00	47,771.00	47,041.00	45,958.00	43,976.00	
Number of Temporary Employees					2,542.00	3,867.00	4,055.00	3,537.00	3,381.00	
Employee Turnover %		5.93	5.89	12.59	10.54	12.65	14.00	8.27	15.00	
% Employees Unionized					70.00	70.00	34.46	19.50	20.72	
Employee Average Age				36.22	34.55	36.00	36.11	36.48	37.25	
% Women in Workforce					54.00	53.37	53.75	54.35	55.00	
% Women in Mgt		18.99	18.99	27.36	31.00	31.00	31.00	35.00	30.00	
% Disabled in Workforce							0.02	0.03	0.03	
Total Recordable Incident Rate			0.07	0.03	0.04	0.01	0.01	0.00	0.00	
Fatalities - Total									0.00	
Social Supply Chain Management	No	No	Yes	Yes	No	No	Yes	Yes	Yes	
Sustain Sup Guidelines Encomp ESG Area Pub Disclsd	No	No	Yes	Yes	No	No	Yes	Yes	Yes	
Number of Customer Complaints								35,043.00	23,380.00	
Community Spending						66.48	77.00	65.72	66.00	
Employee Training Cost	55.00		54.69	74.40	101.68	96.14	120.00	114.00	129.00	
Total Hours Spent by Firm - Employee Training		797,636.00	1,016,270.52	1,379,600.00	1,104,170.00	1,210,860.00	974,059.00	1,608,530.00	1,407,230.00	
Gender Pay Gap Breakout	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	No	
Health and Safety Policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Fair Remuneration Policy	No	No	No	No	No	No	No	No	No	
Training Policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Employee CSR Training	No	No	No	No	No	No	No	No	No	
Equal Opportunity Policy	No	No	No	No	Yes	Yes	Yes	Yes	Yes	
Human Rights Policy	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	
Policy Against Child Labor	No	No	No	No	No	No	No	No	Yes	
Business Ethics Policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Anti-Bribery Ethics Policy	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

Ticker: MAY MK Equity | Periodicity: Annuals | Currency: MYR | Note: Years shown on the report are Fiscal Years | Company: Malayan Banking Bhd

Filing: Most Recent

	Original:2008 A	Original:2009 A	Restated:2010 A	Original:2011 A	Restated:2012 A	Original:2013 A	Restated:2014 A	Original:2015 A	Original:2016 A	Current
For the period ending	2008-6-30	2009-6-30	2010-6-30	2011-6-30	2012-12-31	2013-12-31	2014-12-31	2015-12-31	2016-12-31	2017-11-22
Employee Protection / Whistle Blower Policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
UN Global Compact Signatory	No	No	No	No	No	No	No	No	No	
PRI Signatory	No	No	No	No	No	No	No	No	No	
Bloomberg Gender-Equality Index										
BGEI Statistics Score								28.00		
BGEI Policy Score								31.42		
BGEI Community Score								10.00		
BGEI Product Score								16.57		
CDO or Equivalent Executive	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
% Women of Top 10% Compensated								44.25		
Tracks % Women in Revenue Roles	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
% Women in Revenue-Producing Roles								47.00		
% Women Grew More Than % Turnover	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
% Women Promoted of Total Promotions								57.00		
Global Minimum Weeks Paid Maternity								8.00		
Global Minimum Weeks Paid Paternity								0.29		
Paid Maternity Leave - U.S.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
# Weeks Paid Maternity - U.S.								8.00		
Average # Weeks Paid Maternity - U.S.								8.00		
Paid Paternity Leave - U.S.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
# Weeks Paid Paternity - U.S.								8.00		
Average # Weeks Paid Paternity - U.S.								8.00		
Return to Work Program	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
% Employees Taking Full Parental Leave								96.00		
Provides Childcare Services	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Provides Backup Childcare	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Provides Childcare Subsidy	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	

Ticker: MAY MK Equity | Periodicity: Annuals | Currency: MYR | Note: Years shown on the report are Fiscal Years | Company: Malayan Banking Bhd

Filing: Most Recent

	Original:2008 A	Original:2009 A	Restated:2010 A	Original:2011 A	Restated:2012 A	Original:2013 A	Restated:2014 A	Original:2015 A	Original:2016 A	Current
For the period ending	2008-6-30	2009-6-30	2010-6-30	2011-6-30	2012-12-31	2013-12-31	2014-12-31	2015-12-31	2016-12-31	2017-11-22
Provides Childcare Onsite	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Provides Childcare Referral	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	
Provides Other Childcare Services	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	
Provides Adoption Assistance	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	
Covers Fertility Services	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	
Covers Egg Freezing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	
Covers Gender-Reassignment	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	
Offers Elder Care Support	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Flexible Work Schedule	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Flexible Work Location	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Unconscious Bias Manager Training	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Conduct Gender Based Compensation Review	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	
Employee Groups for Women	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Employee Development Programs	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
% Women in Development Programs								47.00		
% Women in Mentoring Programs								40.00		
% Women in Coaching Programs								48.00		
% Women in Sponsorship Programs								41.00		
Strategy for Recruiting Women	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Requires Gender Diverse Candidates	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
% Goal for Women Executives								55.00		
Financial Education Prgms for Women	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Health Education Prgms for Women	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Supplier Diversity Program	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Gender-Equality Org. Member	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Gender-Equality Org. Donor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Tracks Retention of Female Clients	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	

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Filing: Most Recent

	Original:2008 A	Original:2009 A	Restated:2010 A	Original:2011 A	Restated:2012 A	Original:2013 A	Restated:2014 A	Original:2015 A	Original:2016 A	Current
For the period ending	2008-6-30	2009-6-30	2010-6-30	2011-6-30	2012-12-31	2013-12-31	2014-12-31	2015-12-31	2016-12-31	2017-11-22
Resources for Female Clients	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	
Products for Women	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Tracks Gender % of Clients	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Products for Women Owned Businesses	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Non-Financial Services for Women	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	
Tracks Repayment Rates by Gender	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No	n/a	

Ticker: MAY MK Equity | Periodicity: Annuals | Currency: MYR | Note: Years shown on the report are Fiscal Years | Company: Malayan Banking Bhd

Filing: Most Recent

Governance

	Original:2008 A	Original:2009 A	Restated:2010 A	Original:2011 A	Restated:2012 A	Original:2013 A	Restated:2014 A	Original:2015 A	Original:2016 A	Current
For the period ending	2008-6-30	2009-6-30	2010-6-30	2011-6-30	2012-12-31	2013-12-31	2014-12-31	2015-12-31	2016-12-31	2017-11-22
Governance Disclosure Score	51.79	51.79	62.50	51.79	51.79	57.14	62.50	62.50	62.50	62.50
Board Structure										
Size of the Board	10.00	7.00	11.00	11.00	12.00	11.00	12.00	10.00	11.00	
Unitary or Two Tier Board System			1.00	1.00	1.00	1.00	1.00	1.00	1.00	
# Employee Representatives on Board			0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Classified Board System	n/a	n/a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Board Independence										
# Non Exec Dir on Board			10.00	10.00	11.00	10.00	10.00	9.00	10.00	
% Non Exec Dir on Board			90.91	90.91	91.67	90.91	83.33	90.00	90.91	
# Independent Directors	5.00	4.00	7.00	7.00	9.00	8.00	9.00	7.00	8.00	
% Independent Directors	50.00	57.14	63.64	63.64	75.00	72.73	75.00	70.00	72.73	
CEO Duality	No	No	No	No	No	No	No	No	No	
Independent Chairperson	n/a	n/a	No	No	No	No	No	No	No	
Independent Lead Director	n/a	n/a	Yes	Yes	Yes	Yes	Yes	Yes	No	
Presiding Director	n/a	n/a	No	No	No	No	No	No	No	
Former CEO or its Equivalent on Board	n/a	n/a	No	No	No	No	No	No	No	
Board & Exec Diversity										
# Women on Board			0.00	0.00	1.00	1.00	1.00	1.00	2.00	
% Women on Board	10.00	0.00	0.00	0.00	8.33	9.09	8.33	10.00	18.18	
Female Chief Executive Officer or Equivalent	n/a	n/a	No	No	No	No	No	No	No	
Female Chairperson or Equivalent	n/a	n/a	No	No	No	No	No	No	No	
# Executives / Company Mgrs			11.00	12.00	13.00	12.00	13.00	13.00	13.00	
CEO or Equivalent Appointed from Within	n/a	n/a	No	No	No	Yes	Yes	Yes	Yes	
# Female Executives			2.00	2.00	2.00	2.00	2.00	2.00	2.00	
% Female Executives			18.18	16.67	15.38	16.67	15.38	15.38	15.38	
Age of the Youngest Director			46.00	47.00	49.00	46.00	47.00	48.00	49.00	
Age of the Oldest Director			69.00	70.00	71.00	69.00	70.00	70.00	70.00	
Board of Directors Age Range			23.00	23.00	22.00	23.00	23.00	22.00	21.00	
Board Average Age	61.00	58.00	58.18	59.18	62.08	62.00	62.17	62.60	61.82	
Board Duration (Years)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	

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Filing: Most Recent

	Original:2008 A	Original:2009 A	Restated:2010 A	Original:2011 A	Restated:2012 A	Original:2013 A	Restated:2014 A	Original:2015 A	Original:2016 A	Current
For the period ending	2008-6-30	2009-6-30	2010-6-30	2011-6-30	2012-12-31	2013-12-31	2014-12-31	2015-12-31	2016-12-31	2017-11-22
Executive Director Board Duration			3.00	3.00	3.00	3.00	3.00	3.00	3.00	
Board Committees										
# Board Meetings	15.00	24.00	21.00	22.00	18.00	15.00	13.00	15.00	14.00	
Board Meeting Attendance %	96.20	94.81	88.88	97.52	94.50	97.00	93.66	93.50	92.95	
Independent Directors Board Meeting Attendance %			96.94	98.86	92.66	96.67	91.89	91.10	90.00	
# Dir Attending Less than 75% of Mtgs			0.00	0.00	0.00	0.00	0.00	2.00	2.00	
Audit Committee										
Size of Audit Committee			5.00	4.00	4.00	4.00	5.00	4.00	4.00	
# Independent Dir on Audit Cmte			4.00	4.00	4.00	4.00	4.00	3.00	3.00	
% Independent Dir on Audit Cmte			80.00	100.00	100.00	100.00	80.00	75.00	75.00	
Independent Audit Committee Chairperson	n/a	n/a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
# Non Exec Dir on Audit Cmte			5.00	4.00	4.00	4.00	5.00	4.00	4.00	
Audit Committee Meetings	20.00	21.00	17.00	16.00	14.00	14.00	14.00	14.00	17.00	
Audit Committee Meeting Attendance Percentage			93.62	91.66	100.00	98.25	96.42	89.20	93.54	
Compensation Committee										
Size of Compensation Committee			5.00	5.00	5.00	4.00	4.00	4.00	4.00	
# Independent Dir on Comp Cmte			4.00	4.00	4.00	3.00	4.00	3.00	3.00	
% Independent Dir on Comp Cmte			80.00	80.00	80.00	75.00	100.00	75.00	75.00	
Independent Compensation Committee Chairperson	n/a	n/a	Yes	Yss	Yes	Yes	Yes	Yes	Yes	
# Non Exec Dir on Comp Cmte			5.00	5.00	5.00	4.00	4.00	4.00	4.00	
# Comp Committee Meetings			2.00	12.00	11.00	12.00	10.00	11.00	13.00	
Compensation Committee Meeting Attendance %			100.00	90.00	92.80	98.40	96.29	83.30	85.00	
Outside Compensation Advisors Appointed	n/a	n/a	No	No	No	No	No	No	No	
Nomination Committee										
Size of Nomination Committee			5.00	5.00	5.00	4.00	4.00	4.00	4.00	

Ticker: MAY MK Equity | Periodicity: Annuals | Currency: MYR | Note: Years shown on the report are Fiscal Years | Company: Malayan Banking Bhd

Filing: Most Recent

	Original:2008 A	Original:2009 A	Restated:2010 A	Original:2011 A	Restated:2012 A	Original:2013 A	Restated:2014 A	Original:2015 A	Original:2016 A	Current
For the period ending	2008-6-30	2009-6-30	2010-6-30	2011-6-30	2012-12-31	2013-12-31	2014-12-31	2015-12-31	2016-12-31	2017-11-22
# Independent Dir on Nom Cmte			4.00	4.00	4.00	3.00	4.00	3.00	3.00	
% of Ind Directors on Nomination Committee			80.00	80.00	80.00	75.00	100.00	75.00	75.00	
Independent Nomination Committee Chairperson	n/a	n/a	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
# Non Exec Dir on Nom Cmte			5.00	5.00	5.00	4.00	4.00	4.00	4.00	
# Nom Cmte Meetings			2.00	12.00	11.00	12.00	10.00	11.00	13.00	
Nomination Committee Meeting Attendance Percentage			100.00	90.00	92.80	98.40	96.29	83.30	85.00	
CSR/Sustainability Committee	n/a	n/a	No	No	No	Yes	Yes	Yes	No	
Board & Exec Activities										
Non-Executive Director with Responsibility for CSR	n/a	n/a	No	No	No	No	No	No	No	
Executive Director with Responsibility for CSR	n/a	n/a	No	No	No	No	No	No	No	
Executive Compensation Linked to ESG	No	No	No	No	No	No	No	No	No	
ESG Linked Compensation for Board	No	No	No	No	No	No	No	No	No	
Clawback Provision for Executive Compensation	n/a	n/a	No	No	No	No	No	No	No	
Chg of Ctrl Benefits/ Golden Parachute Agreements	n/a	n/a	No	No	No	No	No	No	No	
Shareholder Rights										
Dual Class Unequal Voting Rights - Common Shares	n/a	n/a	No	No	No	No	No	No	No	
AGM Voting Results										
Director Compensation										
GRI										
GRI Criteria Compliance	No	No	Yes	No	No	Yes	Yes	Yes	Yes	
Global Reporting Initiatives Checked	No	No	Yes	No	No	No	No	No	No	

Ticker: MAY MK Equity | Periodicity: Annuals | Currency: MYR | Note: Years shown on the report are Fiscal Years | Company: Malayan Banking Bhd

Filing: Most Recent

Profitability

	Original:2008 A	Original:2009 A	Restated:2010 A	Original:2011 A	Restated:2012 A	Original:2013 A	Restated:2014 A	Original:2015 A	Original:2016 A	Current/LTM
For the period ending	2008-6-30	2009-6-30	2010-6-30	2011-6-30	2012-12-31	2013-12-31	2014-12-31	2015-12-31	2016-12-31	2017-6-30
Returns										
Return on Common Equity	15.21	3.13	14.47	15.00	15.62	14.88	13.57	11.92	10.36	11.17
Return on Assets	1.11	0.24	1.18	1.19	1.27	1.24	1.12	1.01	0.93	1.02
Return on Capital	4.70	1.22	5.87	5.81	5.96	5.71	4.87	4.34	4.25	4.57
Margins										
Operating Margin	42.13	18.01	42.59	45.72	45.06	46.46	48.29	42.10	38.76	41.99
Incremental Operating Margin			182.18	80.88	42.15	58.65	206.95			137.96
Pretax Margin	42.67	15.98	43.58	46.73	48.04	48.42	49.17	43.09	39.85	42.96
Income before XO Margin	31.39	7.16	32.20	34.43	36.01	36.96	37.30	32.90	31.38	29.68
Net Income Margin	30.58	6.60	30.98	33.16	34.96	35.77	36.25	32.19	30.38	32.88
Net Income to Common Margin	30.58	6.60	30.98	33.16	34.96	35.77	36.25	32.19	30.38	28.55
Additional										
Effective Tax Rate	26.43	55.16	26.11	26.33	25.04	23.66	24.15	23.66	21.26	23.18
Dvd Payout Ratio	60.34	61.38	76.47	74.88	95.48	71.89	78.49	76.33	78.50	
Sustainable Growth Rate	6.03	1.21	3.40	3.77	0.71	4.18	2.92	2.82	2.23	

Ticker: MAY MK Equity | Periodicity: Annuals | Currency: MYR | Note: Years shown on the report are Fiscal Years | Company: Malayan Banking Bhd

Filing: Most Recent

Liquidity

For the period ending	Original:2008 A 2008-6-30	Original:2009 A 2009-6-30	Restated:2010 A 2010-6-30	Original:2011 A 2011-6-30	Restated:2012 A 2012-12-31	Original:2013 A 2013-12-31	Restated:2014 A 2014-12-31	Original:2015 A 2015-12-31	Original:2016 A 2016-12-31	Current 2017-11-22
Long-Term Debt/Equity	47.09	41.53	61.13	70.52	72.96	69.47	75.13	91.51	82.22	79.85
Long-Term Debt/ Capital	16.32	16.40	25.09	25.71	29.15	26.04	26.28	35.19	35.72	32.60
Long-Term Debt/Total Assets	3.52	3.44	5.20	5.56	6.46	5.92	6.42	8.21	7.87	7.19
Total Debt/Equity	188.63	153.22	143.69	174.23	150.30	166.74	185.83	160.03	130.20	148.65
Total Debt/Capital	65.35	60.51	58.96	63.53	60.05	62.51	65.01	61.54	56.56	59.78
Total Debt/Total Assets	14.08	12.71	12.23	13.73	13.31	14.20	15.89	14.35	12.47	14.48
CFO/Total Liabilities	0.34	-4.31	3.19	-0.43	-1.34	-1.50	-1.88	3.12	3.56	1.50
CFO/CapEx	4.15	-52.18	47.44	-5.18	-13.78	-15.26	-29.46	58.92	79.74	264.35
Common Equity/Total Assets	7.17	8.01	8.28	7.64	8.51	8.21	8.27	8.71	9.31	9.47
Total Commercial Paper Outstanding	0.00		0.00							

Ticker: MAY MK Equity | Periodicity: Annuals | Currency: MYR | Note: Years shown on the report are Fiscal Years | Company: Malayan Banking Bhd

Filing: Most Recent

DuPont Analysis

For the period ending	Original:2008 A 2008-6-30	Original:2009 A 2009-6-30	Restated:2010 A 2010-6-30	Original:2011 A 2011-6-30	Restated:2012 A 2012-12-31	Original:2013 A 2013-12-31	Restated:2014 A 2014-12-31	Original:2015 A 2015-12-31	Original:2016 A 2016-12-31	Current 2017-11-22
Tax Burden										
Net Inc to Comn/Pre-Tax Profit %	71.66	41.32	71.10	70.97	72.77	73.87	73.71	74.70	76.24	76.53
Adjustment Factor										
Normlzd Net Inc/Net Inc to Cmn	1.00	0.46	1.00	1.00	1.00	1.00	1.00	0.98	0.99	0.99
Interest Burden										
Operating Margin										
EBIT/Revenue %	42.13	18.01	42.58	45.72	45.06	46.46	48.29	42.10	38.76	41.99
Asset Turnover										
Revenue/Avg Assets	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04
Leverage Ratio										
Avg Assets/Avg Equity	13.88	13.12	12.27	12.62	12.33	11.98	12.13	11.76	11.09	10.56
Adjusted Return on Equity	15.23	1.43	14.42	14.96	15.61	14.87	13.54	11.71	10.28	11.11
5 Year Average Adj ROE	16.58	13.42	13.07	12.73	12.33	12.26	14.68	14.14	13.20	10.26
Payout Ratio	60.34	61.38	76.47	74.88	95.48	71.89	78.49	76.33	78.50	
Sustainable Growth Rate	6.03	1.21	3.40	3.77	0.71	4.18	2.92	2.82	2.23	

Appendix 2: List of Public Listed Companies under F4GBM Index

No	Stock Codes	Stock Names	Bloomberg Indicators	Company Names	Industry Types
1	5139	AEONCR	AEON MK Equity	Aeon Credit Service (M) Bhd	Financial Services
2	2488	ABMB	ABMBMK Equity	Alliance Financial Group Bhd	Financial Services
3	6399	ASTRO	ASTRO MK Equity	Astro Malaysia Holdings Berhad	Telecommunications & Media
4	6888	AXIATA	AXIATA MK Equity	Axiata Group Berhad	Telecommunications & Media
5	5210	ARMADA	BABMK Equity	Bumi Armada Berhad	Energy
6	1818	BURSA	BURSA MK Equity	Bursa Malaysia Bhd	Financial Services
7	2852	CMSB	CMS MK Equity	Cahya Mata Sarawak Bhd	Industrial Products & Services
8	1023	CIMB	CIMB MK Equity	CIMB Group Holdings Berhad	Financial Services
9	6947	DIGI	DIGI MK Equity	DIGI.ComBhd	Telecommunications & Media
10	5259	EATECH	EATECH MK Equity	E.A.Technique (M) Berhad	Transportation & Logistics
11	0078	GDEX	GDX MK Equity	GD Express Carrier Bhd	Transportation & Logistics
12	5168	HARTA	HART MK Equity	Hartalega Holdings Bhd	Health Care
13	4324	HENGYUAN	HYR MK Equity	HengYuan Refining Company Berhad	Energy

No	Stock Codes	Stock Names	Bloomberg Indicators	Company Names	Industry Types
14	5235SS	KLCC	KLCCSS MK Equity	KLCC Prop&Reits-Stapled Sec	REITs
15	5878	KPJ	KPJMK Equity	KPJ Healthcare Bhd	Health Care
16	2445	KLK	KLKMK Equity	Kuala Lumpur Kepong Bhd	Plantation
17	7089	LIIHEN	LHI MK Equity	Lii Hen Industries Bhd	Consumer Products & Services
18	1155	MAYBANK	MAY MK Equity	Malayan Banking Bhd	Financial Services
19	5014	AIRPORT	MAHB MK Equity	Malaysia Airports Holdings Bhd	Transportation & Logistics
20	1171	MBSB	MBS MK Equity	Malaysia Building Society Bhd	Financial Services
21	5186	MHB	MMHE MK Equity	Malaysia Marine And Heavy Eng Holdings Bhd	Energy
22	1651	MRCB	MRCBOA MK Equity	Malaysian Resources Corp Bhd	Properties
23	6012	MAXIS	MAXIS MK Equity	Maxis Berhad	Telecommunications & Media
24	3816	MISC	MISC MK Equity	MISCBhd	Transportation & Logistics
25	0138	MYEG	MYEGMK Equity	MY E.G. Services Bhd	Technology
26	5183	PCHEM	PCHEM MK Equity	Petronas Chemicals Group Bhd	Industrial Products & Services
27	5681	PETDAG	PETD MK Equity	Petronas Dagangan Bhd	Consumer Products & Services

No	Stock Codes	Stock Names	Bloomberg Indicators	Company Names	Industry Types
28	6033	PETGAS	PTGMK Equity	Petronas Gas Bhd	Utilities
29	5204	PRESBHD	PRES MK Equity	Prestariang Berhad	Technology
30	1295	PBBANK	PBKMK Equity	Public Bank Bhd	Financial Services
31	1066	RHBBANK	RHBBANK MKEquity	RHB Bank Berhad	Financial Services
32	8567	SALCON	SALCMK Equity	Salcon Bhd	Utilities
33	4197	SIME	SIME MK Equity	Sime Darby Bhd	Consumer Products & Services
34	5211	SUNWAY	SWBMK Equity	Sunway Berhad	Industrial Products & Services
35	5263	SUNCON	SCGB MK Equity	Sunway Construction Group Berhad	Construction
36	5176	SUNREIT	SREIT MK Equity	Sunway Real Estate Invt Trust	REITs
37	4863	TM	T MK Equity	Telekom Malaysia Bhd	Telecommunications & Media
38	5347	TENAGA	TNBMK Equity	Tenaga Nasional Bhd	Utilities
39	7113	TOPGLOV	TOPGMK Equity	Top Glove CorporationBhd	HealthCare
40	5148	UEMS	UEMS MK Equity	UEM Sunrise Berhad	Properties
41	5005	UNISEM	UNI MK Equity	Unisem (M) Bhd	Technology
42	5246	WPRTS	WPRTS MK Equity	Westports Holdings Berhad	Transportation & Logistics

No	Stock Codes	Stock Names	Bloomberg Indicators	Company Names	Industry Types
43	4677	YTL	YTL MK Equity	YTL Corporation Bhd	Utilities

Source: Bursa Malaysia and Bloomberg Terminal, 2017

Appendix 3: Final List of Public Listed Companies under F4GBM Index

No	Stock Codes	Stock Names	Bloomberg Indicators	Company Names	Industry Types
1	6399	ASTRO	ASTRO MK Equity	Astro Malaysia Holdings Berhad	Telecommunications & Media
2	6888	AXIATA	AXIATA MK Equity	Axiata Group Berhad	Telecommunications & Media
3	5210	ARMADA	BAB MK Equity	Bumi Armada Berhad	Energy
4	1818	BURSA	BURSA MK Equi ty	Bursa Malaysia Bhd	Financial Services
5	1023	CIMB	CIMB MK Equity	CIMB Group Holdings Berhad	Financial Services
6	6947	DIGI	DIGI MK Equity	DIGI.Com Bhd	Telecommunications & Media
7	5168	HARTA	HARTM K Equty	Hartalega Holdings Bhd	Health Care
8	4324	HENGYUAN	HYR MK Equity	HengYuan Refining Company Berhad	Energy
9	5235SS	KLCC	KLCCSS MK Equity	KLCC Prop&Reits-Stapled Sec	REITs
10	5878	KPJ	KPJ MK Equity	KPJ Healthcare Bhd	Health Care
11	2445	KLK	KLK MK Equity	Kuala Lumpur Kepong Bhd	Plantation
12	1155	MAYBANK	MAY MK Equity	Malayan Banking Bhd	Financial Services
13	5014	AIRPORT	MAHB MK Equity	Malaysia Airports Holdings Bhd	Transportation & Logistics
14	5186	MHB	MMHE MK Equity	Malaysia Marine And Heavy Eng Holdings Bhd	Energy
15	1651	MRCB	MRCBOA MK Equity	Malaysian Resources Corp Bhd	Properties
16	6012	MAXIS	MAXIS MK Equity	Maxis Berhad	Telecommunications & Media
17	3816	MISC	MISC MK Equity	MISC Bhd	Transportation & Logistics

No	Stock Codes	Stock Names	Bloomberg Indicators	Company Names	Industry Types
18	5183	PCHEM	PCHEM MK Equity	Petronas Chemicals Group Bhd	Industrial Products & Services
19	5681	PETDAG	PETD MK Equity	Petronas Dagangan Bhd	Consumer Products & Services
20	6033	PETGAS	PTG MK Equity	Petronas Gas Bhd	Utilities
21	5204	PRESBHD	PRES MK Equity	Prestariang Berhad	Technology
22	1295	PBBANK	PBK MK Equity	Public Bank Bhd	Financial Services
23	1066	RHBBANK	RHBBANK MK Equity	RHB Bank Berhad	Financial Services
24	4197	SIME	SIME MK Equity	Sime Darby Bhd	Consumer Products & Services
25	5211	SUNWAY	SWB MK Equity	Sunway Berhad	Industrial Products & Services
26	4863	TM	TM K Equity	Telekom Malaysia Bhd	Telecommunications & Media
27	5347	TENAGA	TNB MK Equity	Tenaga Nasional Bhd	Utilities
28	7113	TOPGLOV	TOPG MK Equity	Top Glove Corporation Bhd	Health Care
29	5148	UEMS	UEMS MK Equity	UEM Sunrise Berhad	Properties
30	5246	WPRTS	WPRTS MK Equity	Westports Holdings Berhad	Transportation & Logistics
31	4677	YTL	YTL MK Equity	YTL Corporation Bhd	Utilities

Source: Bursa Malaysia and Bloomberg Terminal, 2017

Appendix 4: Descriptive Statistics

		ESG_DISCL...	NET_INCOM...	NET_DEBT_...	LONG_TER...	SUSTAINAB...
Mean	Mean	20.12413	18.27287	1.881323	54.69748	4.119710
Median	Median	20.63500	15.14500	0.530000	32.19500	4.980000
Maximum	Maximum	52.26000	125.8900	288.1100	746.0500	70.23000
Minimum	Minimum	0.000000	-149.3600	-43.18000	0.000000	-317.7400
Std. Dev.	Std. Dev.	14.40655	19.48771	17.09397	89.21140	21.56162
Skewness	Skewness	0.145038	-0.665628	15.15156	4.445396	-10.96536
Kurtosis	Kurtosis	2.092516	24.82993	255.4535	28.29568	163.5638
Jarque-Bera	Jarque-Bera	11.72410	6178.276	835075.8	9286.022	339213.5
Probability	Probability	0.002845	0.000000	0.000000	0.000000	0.000000
Sum	Sum	6238.480	5664.590	583.2100	16956.22	1277.110
Sum Sq. Dev.	Sum Sq. Dev.	64132.52	117349.2	90290.97	2459230.	143655.1
Observations	Observations	310	310	310	310	310

		ENVIRONM...	NET_INCOM...	NET_DEBT_...	LONG_TER...	SUSTAINAB...
Mean	Mean	10.44971	18.27287	1.881323	54.69748	4.119710
Median	Median	6.980000	15.14500	0.530000	32.19500	4.980000
Maximum	Maximum	47.97000	125.8900	288.1100	746.0500	70.23000
Minimum	Minimum	0.000000	-149.3600	-43.18000	0.000000	-317.7400
Std. Dev.	Std. Dev.	12.00112	19.48771	17.09397	89.21140	21.56162
Skewness	Skewness	1.025973	-0.665628	15.15156	4.445396	-10.96536
Kurtosis	Kurtosis	3.131609	24.82993	255.4535	28.29568	163.5638
Jarque-Bera	Jarque-Bera	54.60908	6178.276	835075.8	9286.022	339213.5
Probability	Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	Sum	3239.410	5664.590	583.2100	16956.22	1277.110
Sum Sq. Dev.	Sum Sq.Dev.	44504.28	117349.2	90290.97	2459230.	143655.1
Observations	Observations	310	310	310	310	310

	SOCIAL_DIS...	NET_INCOM...	NET_DEBT_...	LONG_TER...	SUSTAINAB...
Mean	19.52058	18.27287	1.881323	54.69748	4.119710
Median	15.31500	15.14500	0.530000	32.19500	4.980000
Maximum	64.06000	125.8900	288.1100	746.0500	70.23000
Minimum	0.000000	-149.3600	-43.18000	0.000000	-317.7400
Std. Dev.	19.14593	19.48771	17.09397	89.21140	21.56162
Skewness	0.502933	-0.665628	15.15156	4.445396	-10.96536
Kurtosis	1.925871	24.82993	255.4535	28.29568	163.5638
Jarque-Bera	27.97128	6178.276	835075.8	9286.022	339213.5
Probability	0.000001	0.000000	0.000000	0.000000	0.000000
Sum	6051.380	5664.590	583.2100	16956.22	1277.110
Sum Sq. Dev.	113269.0	117349.2	90290.97	2459230.	143655.1
Observations	310	310	310	310	310

	GOVERNAN...	NET_INCOM...	NET_DEBT_...	LONG_TER...	SUSTAINAB...
Mean	42.18926	18.27287	1.881323	54.69748	4.119710
Median	51.79000	15.14500	0.530000	32.19500	4.980000
Maximum	73.21000	125.8900	288.1100	746.0500	70.23000
Minimum	0.000000	-149.3600	-43.18000	0.000000	-317.7400
Std. Dev.	22.38326	19.48771	17.09397	89.21140	21.56162
Skewness	-1.221039	-0.665628	15.15156	4.445396	-10.96536
Kurtosis	2.827362	24.82993	255.4535	28.29568	163.5638
Jarque-Bera	77.41668	6178.276	835075.8	9286.022	339213.5
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	13078.67	5664.590	583.2100	16956.22	1277.110
Sum Sq. Dev.	154812.1	117349.2	90290.97	2459230.	143655.1
Observations	310	310	310	310	310

Appendix 5: Correlation Matrices

Covariance Analysis: Ordinary
Date: 02/07/19 Time: 22:23
Sample: 2007 2016
Included observations: 310

Correlation Probability	ESG_DISCL...	NET_INCOM...	NET_DEBT_...	LONG_TER...	SUSTAINAB...
ESG_DISCLOSUR...	1.000000 -----				
NET_INCOME_MA...	-0.029299 0.6073	1.000000 -----			
NET_DEBT___EBIT	0.156236 0.0058	-0.097628 0.0861	1.000000 -----		
LONG_TERM_DE...	0.149417 0.0084	-0.086633 0.1280	0.072845 0.2009	1.000000 -----	
SUSTAINABLE_G...	-0.063713 0.2634	0.060810 0.2858	-0.004786 0.9331	-0.016385 0.7738	1.000000 -----

Covariance Analysis: Ordinary
Date: 02/07/19 Time: 22:27
Sample: 2007 2016
Included observations: 310

Correlation Probability	ENVIRONM...	NET_INCOM...	NET_DEBT_...	LONG_TER...	SUSTAINAB...
ENVIRONMENTAL...	1.000000 -----				
NET_INCOME_MA...	-0.035392 0.5347	1.000000 -----			
NET_DEBT___EBIT	0.169514 0.0028	-0.097628 0.0861	1.000000 -----		
LONG_TERM_DE...	0.137949 0.0151	-0.086633 0.1280	0.072845 0.2009	1.000000 -----	
SUSTAINABLE_G...	-0.069470 0.2226	0.060810 0.2858	-0.004786 0.9331	-0.016385 0.7738	1.000000 -----

Covariance Analysis: Ordinary
Date: 02/07/19 Time: 22:28
Sample: 2007 2016
Included observations: 310

Correlation Probability	SOCIAL_DIS...	NET_INCOM...	NET_DEBT_...	LONG_TER...	SUSTAINAB...
SOCIAL_DISCLOS...	1.000000 -----				
NET_INCOME_MA...	0.044160 0.4385	1.000000 -----			
NET_OEBT___EBIT	0.130324 0.0217	-0.097628 0.0861	1.000000 -----		
LONG_TERM_DE...	0.132790 0.0193	-0.086633 0.1280	0.072845 0.2009	1.000000 -----	
SUSTAINABLE_G...	-0.042567 0.4552	0.060810 0.2858	-0.004786 0.9331	-0.016385 0.7738	1.000000 -----

Covariance Analysis: Ordinary
Date: 02/07/19 Time: 22:30
Sample: 2007 2016
Included observations: 310

Correlation Probability	GOVERNAN...	NET_INCOM...	NET_DEBT_...	LONG_TER...	SUSTAINAB...
GOVERNANCE_DI...	1.000000 -----				
NET_INCOME_MA...	-0.029106 0.6097	1.000000 -----			
NET_DEBT___EBIT	0.113346 0.0461	-0.097628 0.0861	1.000000 -----		
LONG_TERM_DE...	0.107609 0.0584	-0.086633 0.1280	0.072845 0.2009	1.000000 -----	
SUSTAINABLE_G...	-0.053215 0.3504	0.060810 0.2858	-0.004786 0.9331	-0.016385 0.7738	1.000000 -----

Appendix 6: Fixed Effect Test for ESG Disclosure Score

Dependent Variable: ESG_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 13:09
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.98442	1.236931	15.34800	0.0000
NET_INCOME_MARGIN	-0.041847	0.050758	-0.824444	0.4104
NET_DEBT___EBIT	0.072105	0.041122	1.753436	0.0806
LONG_TERM_DEBT___EQUITY	0.032339	0.010016	3.228707	0.0014
SUSTAINABLE_GROWTH_RATE	-3.35E-05	0.032910	-0.001017	0.9992

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.440375	Mean dependent var	20.12413
Adjusted R-squared	0.371185	S.D. dependent var	14.40655
S.E. of regression	11.42409	Akaike info criterion	7.815330
Sum squared resid	35890.17	Schwarz criterion	8.237201
Log likelihood	-1176.376	Hannan-Quinn criter.	7.983976
F-statistic	6.364716	Durbin-Watson stat	0.749845
Prob(F-statistic)	0.000000		

Appendix 7: Random Effect Test for ESG Disclosure Score

Dependent Variable: ESG_DISCLOSURE_SCORE
Method: Panel EGLS (Cross-section random effects)
Date: 10/27/18 Time: 13:14
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.90250	1.915995	9.865629	0.0000
NET_INCOME_MARGIN	-0.028517	0.046255	-0.616528	0.5380
NET_DEBT___EBIT	0.080444	0.040626	1.980106	0.0486
LONG_TERM_DEBT___EQUITY	0.029673	0.009381	3.163043	0.0017
SUSTAINABLE_GROWTH_RATE	-0.007687	0.032414	-0.237159	0.8127

Effects Specification

	S.D.	Rho
Cross-section random	8.405215	0.3512
Idiosyncratic random	11.42409	0.6488

Weighted Statistics

R-squared	0.046329	Mean dependent var	7.946564
Adjusted R-squared	0.033822	S.D. dependent var	11.63961
S.E. of regression	11.44108	Sum squared resid	39924.01
F-statistic	3.704180	Durbin-Watson stat	0.672676
Prob(F-statistic)	0.005820		

Unweighted Statistics

R-squared	0.039332	Mean dependent var	20.12413
Sum squared resid	61610.09	Durbin-Watson stat	0.435901

Appendix 8: Hausman Test for ESG Disclosure Score

Correlated Random Effects - Hausman Test
Equation: EQ01MODEL1
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. df.	Prob.
Cross-section random	4.908308	4	0.2968

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
NET_INCOME_MARGIN	-0.041847	-0.028517	0.000437	0.5236
NET_DEBT___EBIT	0.072105	0.080444	0.000041	0.1903
LONG_TERM_DEBT___EQUITY	0.032339	0.029673	0.000012	0.4475
SUSTAINABLE_GROWTH_RATE	-0.000033	-0.007687	0.000032	0.1789

Cross-section random effects test equation:
Dependent Variable: ESG_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 13:20
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.98442	1.236931	15.34800	0.0000
NET_INCOME_MARGIN	-0.041847	0.050758	-0.824444	0.4104
NET_DEBT___EBIT	0.072105	0.041122	1.753436	0.0806
LONG_TERM_DEBT___EQUITY	0.032339	0.010016	3.228707	0.0014
SUSTAINABLE_GROWTH_RATE	-3.35E-05	0.032910	-0.001017	0.9992

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.440375	Mean dependent var	20.12413
Adjusted R-squared	0.371185	S.D. dependent var	14.40655
S.E. of regression	11.42409	Akaike info criterion	7.815330
Sum squared resid	35890.17	Schwarz criterion	8.237201
Log likelihood	-1176.376	Hannan-Quinn criter.	7.983976
F-statistic	6.364716	Durbin-Watson stat	0.749845
Prob(F-statistic)	0.000000		

Appendix 9: Pooled OLS Test for ESG Disclosure Score

Dependent Variable: ESG_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 14:00
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.83454	1.249138	15.07803	0.0000
NET_INCOME_MARGIN	0.000436	0.041724	0.010446	0.9917
NET_DEBT___EBIT	0.123015	0.047430	2.593603	0.0100
LONG_TERM_DEBT___EQUITY	0.022259	0.009079	2.451626	0.0148
SUSTAINABLE_GROWTH_RATE	-0.040619	0.037415	-1.085613	0.2785

R-squared	0.047256	Mean dependent var	20.12413
Adjusted R-squared	0.034761	S.D. dependent var	14.40655
S.E. of regression	14.15394	Akaike info criterion	8.153861
Sum squared resid	61101.87	Schwarzcriterion	8.214128
Log likelihood	-1258.848	Hannan-Quinn criter.	8.177953
F-statistic	3.782001	Durbin-Watson stat	0.461340
Prob(F-statistic)	0.005105		

Appendix 10: GMM Test for ESG Disclosure Score

Dependent Variable: ESG_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Date: 10/27/18 Time: 14:21
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310
2SLS instrument weighting matrix
Instrument specification: C NET_INCOME_MARGIN NET_DEBT___EBIT LONG_TERM_DEBT___EQUITY SUSTAINABLE_GROWTH_RATE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.83454	1.249138	15.07803	0.0000
NET_INCOME_MARGIN	0.000436	0.041724	0.010446	0.9917
NET_DEBT___EBIT	0.123015	0.047430	2.593603	0.0100
LONG_TERM_DEBT___EQUITY	0.022259	0.009079	2.451626	0.0148
SUSTAINABLE_GROWTH_RATE	-0.040619	0.037415	-1.085613	0.2785

R-squared	0.047256	Mean dependent var	20.12413
Adjusted R-squared	0.034761	S.D.dependentvar	14.40655
S.E. of regression	14.15394	Sum squared resid	61101.87
Durbin-Watson stat	0.461340	J-statistic	8.09E-29
Instrument rank	5		

Appendix 11: Fixed Effect Test for Environmental Disclosure Score

Dependent Variable: ENVIRONMENTAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 13:25
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.527976	0.980480	9.717666	0.0000
NET_INCOME_MARGIN	-0.020118	0.040235	-0.500018	0.6175
NET_DEBT___EBIT	0.065408	0.032596	2.006613	0.0458
LONG_TERM_DEBT___EQUITY	0.019436	0.007939	2.447997	0.0150
SUSTAINABLE_GROWTH_RATE	0.025052	0.026087	0.960306	0.3377

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.493289	Mean dependent var	10.44971
Adjusted R-squared	0.430641	S.D. dependent var	12.00112
S.E. of regression	9.055545	Akaike info criterion	7.350637
Sum squared resid	22550.80	Schwarz criterion	7.772508
Log likelihood	-1104.349	Hannan-Quinn criter.	7.519283
F-statistic	7.873998	Durbin-Watson stat	0.734644
Prob(F-statistic)	0.000000		

Appendix 12: Random Effect Test for Environmental Disclosure Score

Dependent Variable: ENVIRONMENTAL_DISCLOSURE_SCORE
Method: Panel EGLS (Cross-section random effects)
Date: 10/27/18 Time: 13:26
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.500390	1.578936	6.016958	0.0000
NET_INCOME_MARGIN	-0.015433	0.036963	-0.417526	0.6766
NET_DEBT___EBIT	0.072627	0.032240	2.252714	0.0250
LONG_TERM_DEBT___EQUITY	0.018892	0.007480	2.525721	0.0121
SUSTAINABLE_GROWTH_RATE	0.014893	0.025730	0.578805	0.5631

Effects Specification

	S.D.	Rho
Cross-section random	7.067176	0.3785
Idiosyncratic random	9.055545	0.6215

Weighted Statistics

R-squared	0.038109	Mean dependent var	3.924295
Adjusted R-squared	0.025494	S.D. dependent var	9.249556
S.E. of regression	9.130889	Sum squared resid	25428.81
F-statistic	3.020966	Durbin-Watson stat	0.658022
Prob(F-statistic)	0.018194		

Unweighted Statistics

R-squared	0.037105	Mean dependent var	10.44971
Sum squared resid	42852.95	Durbin-Watson stat	0.390468

Appendix 13: Hausman Test for Environmental Disclosure Score

Correlated Random Effects - Hausman Test
Equation: EQ02MODEL2
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	9.096417	4	0.0587

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff)	Prob.
NET_INCOME_MARGIN	-0.020118	-0.015433	0.000253	0.7681
NET_DEBT___EBIT	0.065408	0.072627	0.000023	0.1332
LONG_TERM_DEBT___EQUITY	0.019436	0.018892	0.000007	0.8381
SUSTAINABLE_GROWTH_RATE	0.025052	0.014893	0.000019	0.0182

Cross-section random effects test equation:
Dependent Variable: ENVIRONMENTAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 13:30
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.527976	0.980480	9.717666	0.0000
NET_INCOME_MARGIN	-0.020118	0.040235	-0.500018	0.6175
NET_DEBT___EBIT	0.065408	0.032596	2.006613	0.0458
LONG_TERM_DEBT___EQUITY	0.019436	0.007939	2.447997	0.0150
SUSTAINABLE_GROWTH_RATE	0.025052	0.026087	0.960306	0.3377

Effects Specification

Cross-section fixed (dummy variables)			
R-squared	0.493289	Mean dependent var	10.44971
Adjusted R-squared	0.430641	S.D. dependent var	12.00112
S.E. of regression	9.055545	Akaike info criterion	7.350637
Sum squared resid	22550.80	Schwarz criterion	7.772508
Log likelihood	-1104.349	Hannan-Quinn criter.	7.519283
F-statistic	7.873998	Durbin-Watson stat	0.734644
Prob(F-statistic)	0.000000		

Appendix 14: Pooled OLS Test for Environmental Disclosure Score

Dependent Variable: ENVIRONMENTAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 14:03
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.528544	1.039586	9.165708	0.0000
NET_INCOME_MARGIN	-0.003055	0.034725	-0.087980	0.9300
NET_DEBT___EBIT	0.112065	0.039473	2.839002	0.0048
LONG_TERM_DEBT___EQUITY	0.016789	0.007556	2.221877	0.0270
SUSTAINABLE_GROWTH_RATE	-0.036936	0.031139	-1.186170	0.2365

R-squared	0.049060	Mean dependent var	10.44971
Adjusted R-squared	0.036589	S.D. dependent var	12.00112
S.E. of regression	11.77952	Akaike info criterion	7.786599
Sum squared resid	42320.89	Schwarz criterion	7.846866
Log likelihood	-1201.923	Hannan-Quinn criter.	7.810691
F-statistic	3.933837	Durbin-Watson stat	0.447095
Prob(F-statistic)	0.003952		

Appendix 15: GMM Test for Environmental Disclosure Score

Dependent Variable: ENVIRONMENTAL_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Date: 10/27/18 Time: 14:24
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310
2SLS instrument weighting matrix
Instrument specification: C NET_INCOME_MARGIN NET_DEBT___EBIT LONG_TERM_DEBT___EQUITY SUSTAINABLE_GROWTH_RATE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.528544	1.039586	9.165708	0.0000
NET_INCOME_MARGIN	-0.003055	0.034725	-0.087980	0.9300
NET_DEBT___EBIT	0.112065	0.039473	2.839002	0.0048
LONG_TERM_DEBT___EQUITY	0.016789	0.007556	2.221877	0.0270
SUSTAINABLE_GROWTH_RATE	-0.036936	0.031139	-1.186170	0.2365

R-squared	0.049060	Mean dependent var	10.44971
Adjusted R-squared	0.036589	S.D. dependent var	12.00112
S.E. of regression	11.77952	Sum squared resid	42320.89
Durbin-Watson stat	0.447095	J-statistic	8.12E-29
Instrument rank	5		

Appendix 16: Fixed Effect Test for Social Disclosure Score

Dependent Variable: SOCIAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 13:39
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.12589	1.562379	11.60147	0.0000
NET_INCOME_MARGIN	-0.058943	0.064113	-0.919351	0.3587
NET_DEBT___EBIT	0.082961	0.051941	1.597197	0.1114
LONG_TERM_DEBT___EQUITY	0.040513	0.012651	3.202230	0.0015
SUSTAINABLE_GROWTH_RATE	0.024206	0.041569	0.582308	0.5608

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.494471	Mean dependent var	19.52058
Adjusted R-squared	0.431969	S.D. dependent var	19.14593
S.E. of regression	14.42986	Akaike info criterion	8.282482
Sum squared resid	57260.77	Schwarz criterion	8.704353
Log likelihood	-1248.785	Hannan-Quinn criter.	8.451128
F-statistic	7.911315	Durbin-Watson stat	0.756556
Prob(F-statistic)	0.000000		

Appendix 17: Random Effect Test for Social Disclosure Score

Dependent Variable: SOCIAL_DISCLOSURE_SCORE
Method: Panel EGLS (Cross-section random effects)
Date: 10/27/18 Time: 13:41
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.74216	2.673952	6.635181	0.0000
NET_INCOME_MARGIN	-0.027209	0.059564	-0.456799	0.6481
NET_DEBT___EBIT	0.090057	0.051453	1.750275	0.0811
LONG_TERM_DEBT___EQUITY	0.037441	0.012015	3.116205	0.0020
SUSTAINABLE_GROWTH_RATE	0.014136	0.041079	0.344121	0.7310

Effects Specification	S.D.	Rho
Cross-section random	12.30598	0.4211
Idiosyncratic random	14.42986	0.5789

Weighted Statistics			
R-squared	0.041863	Mean dependent var	6.786779
Adjusted R-squared	0.029297	S.D. dependent var	14.67816
S.E. of regression	14.46155	Sum squared resid	63786.59
F-statistic	3.331489	Durbin-Watson stat	0.676821
Prob(F-statistic)	0.010865		

Unweighted Statistics			
R-squared	0.022409	Mean dependent var	19.52058
Sum squared resid	110730.8	Durbin-Watson stat	0.389884

Appendix 18: Hausman Test for Social Disclosure Score

Correlated Random Effects - Hausman Test
Equation: EQ03MODEL3
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.340852	4	0.2541

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
NET_INCOME_MARGIN	-0.058943	-0.027209	0.000563	0.1810
NET_DEBT___EBIT	0.082961	0.090057	0.000051	0.3180
LONG_TERM_DEBT___EQUITY	0.040513	0.037441	0.000016	0.4382
SUSTAINABLE_GROWTH_RATE	0.024206	0.014136	0.000041	0.1137

Cross-section random effects test equation:
Dependent Variable: SOCIAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 13:44
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.12589	1.562379	11.60147	0.0000
NET_INCOME_MARGIN	-0.058943	0.064113	-0.919351	0.3587
NET_DEBT___EBIT	0.082961	0.051941	1.597197	0.1114
LONG_TERM_DEBT___EQUITY	0.040513	0.012651	3.202230	0.0015
SUSTAINABLE_GROWTH_RATE	0.024206	0.041569	0.582308	0.5608

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.494471	Mean dependent var	19.52058
Adjusted R-squared	0.431969	S.D. dependent var	19.14593
S.E. of regression	14.42986	Akaike info criterion	8.282482
Sum squared resid	57260.77	Schwarz criterion	8.704353
Log likelihood	-1248.785	Hannan-Quinn criter.	8.451128
F-statistic	7.911315	Durbin-Watson stat	0.756556
Prob(F-statistic)	0.000000		

Appendix 19: Pooled OLS Test for Social Disclosure Score

Dependent Variable: SOCIAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 14:06
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.63523	1.667480	9.976272	0.0000
NET_INCOME_MARGIN	0.069231	0.055698	1.242976	0.2148
NET_DEBT___EBIT	0.142922	0.063315	2.257340	0.0247
LONG_TERM_DEBT___EQUITY	0.027659	0.012120	2.282023	0.0232
SUSTAINABLE_GROWTH_RATE	-0.039185	0.049946	-0.784552	0.4333

R-squared	0.038734	Mean dependent var	19.52058
Adjusted R-squared	0.026127	S.D. dependent var	19.14593
S.E. of regression	18.89416	Akaike info criterion	8.731580
Sum squared resid	108881.7	Schwarz criterion	8.791847
Log likelihood	-1348.395	Hannan-Quinn criter.	8.755672
F-statistic	3.072459	Durbin-Watson stat	0.425709
Prob(F-statistic)	0.016709		

Appendix 20: GMM Test for Social Disclosure Score

Dependent Variable: SOCIAL_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Date: 10/27/18 Time: 14:26
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310
2SLS instrument weighting matrix
Instrument specification: C NET_INCOME_MARGIN NET_DEBT___EBIT LONG_TERM_DEBT___EQUITY SUSTAINABLE_GROWTH_RATE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.63523	1.667480	9.976272	0.0000
NET_INCOME_MARGIN	0.069231	0.055698	1.242976	0.2148
NET_DEBT___EBIT	0.142922	0.063315	2.257340	0.0247
LONG_TERM_DEBT___EQUITY	0.027659	0.012120	2.282023	0.0232
SUSTAINABLE_GROWTH_RATE	-0.039185	0.049946	-0.784552	0.4333

R-squared	0.038734	Mean dependent var	19.52058
Adjusted R-squared	0.026127	S.D. dependent var	19.14593
S.E. of regression	18.89416	Sum squared resid	108881.7
Durbin-Watson stat	0.425709	J-statistic	2.04E-28
Instrument rank	5		

Appendix 21: Fixed Effect Test for Governance Disclosure Score

Dependent Variable: GOVERNANCE_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 13:53
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	39.47353	2.109925	18.70850	0.0000
NET_INCOME_MARGIN	-0.008002	0.086582	-0.092426	0.9264
NET_DEBT___EBIT	0.084311	0.070145	1.201952	0.2304
LONG_TERM_DEBT___EQUITY	0.055344	0.017085	3.239297	0.0013
SUSTAINABLE_GROWTH_RATE	-0.078607	0.056138	-1.400254	0.1626

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.325451	Mean dependent var	42.18926
Adjusted R-squared	0.242052	S.D. dependent var	22.38326
S.E. of regression	19.48691	Akaike info criterion	8.883368
Sum squared resid	104428.4	Schwarz criterion	9.305239
Log likelihood	-1341.922	Hannan-Quinn criter.	9.052014
F-statistic	3.902345	Durbin-Watson stat	0.914119
Prob(F-statistic)	0.000000		

Appendix 22: Random Effect Test for Governance Disclosure Score

Dependent Variable: GOVERNANCE_DISCLOSURE_SCORE
Method: Panel EGLS (Cross-section random effects)
Date: 10/27/18 Time: 13:55
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	39.97470	2.789949	14.32811	0.0000
NET_INCOME_MARGIN	-0.004789	0.075606	-0.063336	0.9495
NET_DEBT___EBIT	0.097448	0.068867	1.415022	0.1581
LONG_TERM_DEBT___EQUITY	0.044104	0.015512	2.843231	0.0048
SUSTAINABLE_GROWTH_RATE	-0.071279	0.054867	-1.299106	0.1949

Effects Specification	S.D.	Rho
Cross-section random	11.00206	0.2417
Idiosyncratic random	19.48691	0.7583

Weighted Statistics			
R-squared	0.038313	Mean dependent var	20.61674
Adjusted R-squared	0.025701	S.D. dependent var	19.75027
S.E. of regression	19.49482	Sum squared resid	115914.7
F-statistic	3.037751	Durbin-Watson stat	0.810812
Prob(F-statistic)	0.017696		

Unweighted Statistics			
R-squared	0.018510	Mean dependent var	42.18926
Sum squared resid	151946.5	Durbin-Watson stat	0.618540

Appendix 23: Hausman Test for Governance Disclosure Score

Correlated Random Effects - Hausman Test
Equation: EQ04MODEL4
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.247750	4	0.3735

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
NET_INCOME_MARGIN	-0.008002	-0.004789	0.001780	0.9393
NET_DEBT___EBIT	0.084311	0.097448	0.000178	0.3243
LONG_TERM_DEBT___EQUITY	0.055344	0.044104	0.000051	0.1165
SUSTAINABLE_GROWTH_RATE	-0.078607	-0.071279	0.000141	0.5371

Cross-section random effects test equation:
Dependent Variable: GOVERNANCE_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 13:56
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	39.47353	2.109925	18.70850	0.0000
NET_INCOME_MARGIN	-0.008002	0.086582	-0.092426	0.9264
NET_DEBT___EBIT	0.084311	0.070145	1.201952	0.2304
LONG_TERM_DEBT___EQUITY	0.055344	0.017085	3.239297	0.0013
SUSTAINABLE_GROWTH_RATE	-0.078607	0.056138	-1.400254	0.1626

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.325451	Mean dependent var	42.18926
Adjusted R-squared	0.242052	S.D. dependent var	22.38326
S.E. of regression	19.48691	Akaike info criterion	8.883368
Sum squared resid	104428.4	Schwarz criterion	9.305239
Log likelihood	-1341.922	Hannan-Quinn criter.	9.052014
F-statistic	3.902345	Durbin-Watson stat	0.914119
Prob(F-statistic)	0.000000		

Appendix 24: Pooled OLS Test for Governance Disclosure Score

Dependent Variable: GOVERNANCE_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/27/18 Time: 14:18
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	40.94661	1.962872	20.86056	0.0000
NET_INCOME_MARGIN	-0.008293	0.065564	-0.126483	0.8994
NET_DEBT___EBIT	0.137783	0.074531	1.848682	0.0655
LONG_TERM_DEBT___EQUITY	0.024711	0.014267	1.731994	0.0843
SUSTAINABLE_GROWTH_RATE	-0.052589	0.058794	-0.894464	0.3718

R-squared	0.025431	Mean dependent var	42.18926
Adjusted R-squared	0.012650	S.D. dependentvar	22.38326
S.E. of regression	22.24123	Akaike info criterion	9.057771
Sum squared resid	150875.1	Schwarz criterion	9.118038
Log likelihood	-1398.954	Hannan-Quinn criter.	9.081863
F-statistic	1.989707	Durbin-Watson stat	0.616761
Prob(F-statistic)	0.095981		

Appendix 25: GMM Test for Governance Disclosure Score

Dependent Variable: GOVERNANCE_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Date: 10/27/18 Time: 14:29
Sample: 2007 2016
Periods included: 10
Cross-sections included: 31
Total panel (balanced) observations: 310
2SLS instrument weighting matrix
Instrument specification: C NET_INCOME_MARGIN NET_DEBT___EBIT LONG_TERM_DEBT___EQUITY SUSTAINABLE_GROWTH_RATE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	40.94661	1.962872	20.86056	0.0000
NET_INCOME_MARGIN	-0.008293	0.065564	-0.126483	0.8994
NET_DEBT___EBIT	0.137783	0.074531	1.848682	0.0655
LONG_TERM_DEBT___EQUITY	0.024711	0.014267	1.731994	0.0843
SUSTAINABLE_GROWTH_RATE	-0.052589	0.058794	-0.894464	0.3718

R-squared	0.025431	Mean dependent var	42.18926
Adjusted R-squared	0.012650	S.D. dependent var	22.38326
S.E. of regression	22.24123	Sum squared resid	150875.1
Durbin-Watson stat	0.616761	J-statistic	6.72E-28
Instrument rank	5		

Appendix 26: Diagnostic Test for ESG Disclosure Score

Dependent Variable: ESG_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 12/15/18 Time: 19:33
Sample (adjusted): 2008 2016
Periods included: 9
Cross-sections included: 31
Total panel (balanced) observations: 279
Difference specification instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: NET_INCOME_MARGIN NET_DEBT___EBIT
LONG_TERM_DEBT___EQUITY SUSTAINABLE_GROWTH_RATE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NET_INCOME_MARGIN	0.046826	0.032083	1.459524	0.1456
NET_DEBT___EBIT	0.031565	0.003433	9.194240	0.0000
LONG_TERM_DEBT___EQUITY	0.004053	0.006407	0.632510	0.5276
SUSTAINABLE_GROWTH_RATE	0.020287	0.005815	3.488984	0.0006

Effects Specification

Cross-section fixed (first differences)

Mean dependentvar	1.993047	S.D. dependent var	8.830265
S.E. of regression	9.026034	Sum squared resid	22404.05
J-statistic	7.64E-31	Instrument rank	4

Arellano-Bond Serial Correlation Test
Equation: EQ1_15122018GMM
Date: 12/15/18 Time: 19:33
Sample: 2007 2016
Included observations: 279

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	1.530232	1632.379...	1066.752...	0.1260
AR(2)	-0.129444	-134.3789...	1038.126...	0.8970

Appendix 27: Diagnostic Test for Environmental Disclosure Score

Dependent Variable: ENVIRONMENTAL_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 12/15/18 Time: 18:46
Sample (adjusted): 2008 2016
Periods included: 9
Cross-sections included: 31
Total panel (balanced) observations: 279
Difference specification instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: NET_INCOME_MARGIN NET_DEBT___EBIT LONG_TERM_DEBT___EQUITY SUSTAINABLE_GROWTH_RATE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NET_INCOME_MARGIN	0.022111	0.019732	1.120569	0.2634
NET_DEBT___EBIT	0.032623	0.002700	12.08140	0.0000
LONG_TERM_DEBT___EQUITY	0.002991	0.003981	0.751245	0.4531
SUSTAINABLE_GROWTH_RATE	0.034993	0.002685	13.03231	0.0000

Effects Specification

Cross-section fixed (first differences)			
Mean dependent var	1.500824	S.D. dependent var	7.141903
S.E. of regression	7.212219	Sum squared resid	14304.43
J-statistic	3.65E-31	Instrument rank	4

Arellano-Bond Serial Correlation Test
Equation: EQ2_15122018GMM
Date: 12/15/18 Time 19:35
Sample: 2007 2016
Included observations: 279

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	1.735988	1147.610...	661.070673	0.0826
AR(2)	-0.670438	-408.8775...	609.865856	0.5026

Appendix 28: Diagnostic Test for Social Disclosure Score

Dependent Variable: SOCIAL_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 12/15/18 Time: 18:50
Sample (adjusted): 2008 2016
Periods included: 9
Cross-sections included: 31
Total panel (balanced) observations: 279
Difference specification instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: NET_INCOME_MARGIN NET_DEBT___EBIT
LONG_TERM_DEBT___EQUITY SUSTAINABLE_GROWTH_RATE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NET_INCOME_MARGIN	0.035897	0.036140	0.993287	0.3214
NET_DEBT___EBIT	0.006437	0.004308	1.494086	0.1363
LONG_TERM_DEBT___EQUITY	0.007389	0.009234	0.800155	0.4243
SUSTAINABLE_GROWTH_RATE	0.059469	0.005521	10.77175	0.0000

Effects Specification

Cross-section fixed (first differences)			
Mean dependent var	2.493763	S.D. dependent var	11.22966
S.E. of regression	11.40561	Sum squared resid	35774.20
J-statistic	3.28E-31	Instrument rank	4

Arellano-Bond Serial Correlation Test
Equation: EQ3_15122018GMM
Date: 12/15/18 Time: 19:36
Sample: 2007 2016
Included observations: 279

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	1.030621	1922.356...	1865.240...	0.3027
AR(2)	-0.594650	-1073.859...	1805.866...	0.5521

Appendix 29: Diagnostic Test for Governance Disclosure Score

Dependent Variable: GOVERNANCE_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 12/15/18 Time: 18:53
Sample (adjusted): 2008 2016
Periods included: 9
Cross-sections included: 31
Total panel (balanced) observations: 279
Difference specification instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: NET_INCOME_MARGIN NET_DEBT___EBIT LONG_TERM_DEBT___EQUITY SUSTAINABLE_GROWTH_RATE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NET_INCOME_MARGIN	0.104471	0.074416	1.403869	0.1615
NET_DEBT___EBIT	0.055824	0.015240	3.662885	0.0003
LONG_TERM_DEBT___EQUITY	0.000957	0.012372	0.077317	0.9384
SUSTAINABLE_GROWTH_RATE	-0.053984	0.019254	-2.803695	0.0054

Effects Specification

Cross-section fixed (first differences)

Mean dependent var	2.739391	S.D. dependent var	17.07217
S.E. of regression	17.21514	Sum squared resid	81499.25
J-statistic	3.33E-31	Instrument rank	4

Arellano-Bond Serial Correlation Test
Equation: EQ4_15122018GMM
Date: 12/15/18 Time: 19:37
Sample: 2007 2016
Included observations: 279

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	-1.015670	-4496.979...	4427.599...	0.3098
AR(2)	0.266446	1177.200...	4418.150...	0.7899

Appendix 30: Regression Analysis on Profitability Ratio

Fixed Effect Test Outcomes:

Dependent Variable: ESG_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 13:05
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.93628	1.455139	10.95172	0.0000
PROFITABILITY_RATIO	0.127154	0.116037	1.095802	0.2743
LIQUIDITY_RATIO	1.388611	0.601261	2.309496	0.0218
GROWTH_RATIO	-0.001396	0.001352	-1.032962	0.3027
YIELD_RATIO	0.261473	0.189846	1.377288	0.1697

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.447207	Mean dependent var	19.70230
Adjusted R-squared	0.377819	S.D. dependentvar	14.90829
S.E. of regression	11.75942	Akaike info criterion	7.874858
Sum squared resid	33049.89	Schwarz criterion	8.288010
Log likelihood	-1032.106	Hannan-Quinn criter.	8.040762
F-statistic	6.445004	Durbin-Watson stat	0.648340
Prob(F-statistic)	0.000000		

Dependent Variable: ENVIRONMENTAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 13:14
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.464310	1.180921	8.014348	0.0000
PROFITABILITY_RATIO	0.044820	0.094170	0.475948	0.6345
LIQUIDITY_RATIO	0.568407	0.487955	1.164875	0.2452
GROWTH_RATIO	-0.001110	0.001097	-1.011844	0.3126
YIELD_RATIO	0.138626	0.154070	0.899757	0.3692

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.483753	Mean dependent var	10.95611
Adjusted R-squared	0.418952	S.D. dependent var	12.51977
S.E. of regression	9.543382	Akaike info criterion	7.457244
Sum squared resid	21767.20	Schwarz criterion	7.870396
Log likelihood	-975.7280	Hannan-Quinn criter.	7.623148
F-statistic	7.465220	Durbin-Watson stat	0.709590
Prob(F-statistic)	0.000000		

Dependent Variable: SOCIAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 13:18
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.42825	1.779223	8.671340	0.0000
PROFITABILITY_RATIO	0.076754	0.141880	0.540974	0.5890
LIQUIDITY_RATIO	1.022850	0.735172	1.391306	0.1654
GROWTH_RATIO	-0.001678	0.001653	-1.015676	0.3108
YIELD_RATIO	0.192947	0.232128	0.831209	0.4067

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.486193	Mean dependentvar	1802978
Adjusted R-squared	0.421698	S.D. dependent var	18.90752
S.E. of regression	14.37844	Akaike info criterion	8.277009
Sum squared resid	49410.77	Schwarzcriterion	8.690161
Log likelihood	-1086.396	Hannan-Quinn criter.	8.442912
F-statistic	7.538496	Durbin-Watson stat	0.692955
Prob(F-statistic)	0.000000		

Dependent Variable: GOVERNANCE_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 13:21
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	31.22813	2.484979	12.56676	0.0000
PROFITABILITY_RATIO	0.393035	0.198159	1.983429	0.0485
LIQUIDITY_RATIO	3.374094	1.026790	3.286061	0.0012
GROWTH_RATIO	-0.001756	0.002308	-0.760783	0.4475
YIELD_RATIO	0.477133	0.324205	1.471699	0.1424

Effects Specification

Cross-section fixed (dummy variables)			
R-squared	0.337717	Mean dependentvar	40.93252
Adjusted R-squared	0.254585	S.D. dependentvar	23.25976
S.E. of regression	20.08187	Akaike info criterion	8.945184
Sum squared resid	96384.32	Schwarz criterion	9.358336
Log likelihood	-1176.600	Hannan-Quinn criter.	9.111087
F-statistic	4.062430	Durbin-Watson stat	0.872638
Prob(F-statistic)	0.000000		

Random Effect Test Outcomes:

Dependent Variable: ESG_DISCLOSURE_SCORE
Method: Panel EGLS (Cross-section random effects)
Date: 10/13/18 Time: 13:26
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.26235	2.318732	7.013470	0.0000
PROFITABILITY_RATIO	0.127204	0.108860	1.168518	0.2436
LIQUIDITY_RATIO	1.206925	0.568414	2.123318	0.0347
GROWTH_RATIO	-0.001530	0.001340	-1.141570	0.2547
YIELD_RATIO	0.271513	0.186102	1.458948	0.1458

Effects Specification	S.D.	Rho
Cross-section random	9.615291	0.4007
Idiosyncratic random	11.75942	0.5993

Weighted Statistics			
R-squared	0.039684	Mean dependent var	7.106775
Adjusted R-squared	0.025189	S.D. dependent var	11.86337
S.E. of regression	11.71301	Sum squared resid	36356.55
F-statistic	2.737741	Durbin-Watson stat	0.589334
Prob(F-statistic)	0.029262		

Unweighted Statistics			
R-squared	0.023832	Mean dependent var	19.70230
Sum squared resid	58362.26	Durbin-Watson stat	0.367123

Dependent Variable: ENVIRONMENTAL_DISCLOSURE_SCORE
Method: Panel EGLS (Cross-section random effects)
Date: 10/13/18 Time: 13:29
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.491945	1.973488	4.809731	0.0000
PROFITABILITY_RATIO	0.064541	0.088964	0.725472	0.4688
LIQUIDITY_RATIO	0.458471	0.464177	0.987708	0.3242
GROWTH_RATIO	-0.001260	0.001089	-1.157659	0.2480
YIELD_RATIO	0.161004	0.151370	1.063645	0.2885

Effects Specification

	S.D.	Rho
Cross-section random	8.374260	0.4350
Idiosyncratic random	9.543382	0.5650

Weighted Statistics

R-squared	0.016496	Mean dependent var	3.714479
Adjusted R-squared	0.001651	S.D. dependent var	9.526724
S.E. of regression	9.518859	Sum squared resid	24011.30
F-statistic	1.111180	Durbin-Watson stat	0.645216
Prob(F-statistic)	0.351602		

Unweighted Statistics

R-squared	0.022697	Mean dependent var	10.95611
Sum squared resid	41207.29	Durbin-Watson stat	0.375964

Dependent Variable: SOCIAL_DISCLOSURE_SCORE
Method: Panel EGLS (Cross-section random effects)
Date: 10/13/18 Time: 13:31
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.60958	3.036714	5.140288	0.0000
PROFITABILITY_RATIO	0.064777	0.134414	0.481919	0.6303
LIQUIDITY_RATIO	0.959726	0.701103	1.368881	0.1722
GROWTH_RATIO	-0.001836	0.001641	-1.118767	0.2643
YIELD_RATIO	0.221397	0.228266	0.969905	0.3330

Effects Specification

	S.D.	Rho
Cross-section random	13.00719	0.4501
Idiosyncratic random	14.37844	0.5499

Weighted Statistics

R-squared	0.017649	Mean dependent var	5.949553
Adjusted R-squared	0.002821	S.D. dependent var	14.33994
S.E. of regression	14.31970	Sum squared resid	54339.23
F-statistic	1.190264	Durbin-Watson stat	0.632411
Prob(F-statistic)	0.315414		

Unweighted Statistics

R-squared	0.016308	Mean dependent var	18.02978
Sum squared resid	94597.71	Durbin-Watson stat	0.363272

Dependent Variable: GOVERNANCE_DISCLOSURE_SCORE
Method: Panel EGLS (Cross-section random effects)
Date: 10/13/18 Time: 13:34
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	32.71920	3.258665	10.04068	0.0000
PROFITABILITY_RATIO	0.341847	0.178552	1.914556	0.0566
LIQUIDITY_RATIO	2.791956	0.936023	2.982785	0.0031
GROWTH_RATIO	-0.001721	0.002275	-0.756722	0.4499
YIELD_RATIO	0.449901	0.313607	1.434602	0.1526

Effects Specification

	S.D.	Rho
Cross-section random	11.86186	0.2587
Idiosyncratic random	20.08187	0.7413

Weighted Statistics

R-squared	0.066376	Mean dependentvar	19.31946
Adjusted R-squared	0.052283	S.D. dependent var	20.59387
S.E. of regression	20.04829	Sum squared resid	106512.5
F-statistic	4.710035	Durbin-Watson stat	0.783382
Prob(F-statistic)	0.001093		

Unweighted Statistics

R-squared	0.030072	Mean dependentvar	40.93252
Sum squared resid	141156.9	Durbin-Watson stat	0.591115

Hausman Test Outcomes:

Correlated Random Effects - Hausman Test
Equation: MODEL1EQ1FIXRD
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.912089	4	0.7519

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff)	Prob.
PROFITABILITY_RATIO	0.127154	0.127204	0.001614	0.9990
LIQUIDITY_RATIO	1.388611	1.206925	0.038420	0.3540
GROWTH_RATIO	-0.001396	-0.001530	0.000000	0.4476
YIELD_RATIO	0.261473	0.271513	0.001408	0.7890

Cross-section random effects test equation:
Dependent Variable: ESG_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 13:41
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.93628	1.455139	10.95172	0.0000
PROFITABILITY_RATIO	0.127154	0.116037	1.095802	0.2743
LIQUIDITY_RATIO	1.388611	0.601261	2.309496	0.0218
GROWTH_RATIO	-0.001396	0.001352	-1.032962	0.3027
YIELD_RATIO	0.261473	0.189846	1.377288	0.1697

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.447207	Mean dependent var	19.70230
Adjusted R-squared	0.377819	S.D. dependent var	14.90829
S.E. of regression	11.75942	Akaike info criterion	7.874858
Sum squared resid	33049.89	Schwarz criterion	8.288010
Log likelihood	-1032.106	Hannan-Quinn criter.	8.040762
F-statistic	6.445004	Durbin-Watson stat	0.648340
Prob(F-statistic)	0.000000		

Correlated Random Effects - Hausman Test
Equation: MODEL2EQ2FXRD
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.639813	4	0.6198

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
PROFITABILITY_RATIO	0.044820	0.064541	0.000953	0.5230
LIQUIDITY_RATIO	0.568407	0.458471	0.022640	0.4650
GROWTH_RATIO	-0.001110	-0.001260	0.000000	0.2632
YIELD_RATIO	0.138626	0.161004	0.000825	0.4358

Cross-section random effects test equation:
Dependent Variable: ENVIRONMENTAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 13:46
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.464310	1.180921	8.014348	0.0000
PROFITABILITY_RATIO	0.044820	0.094170	0.475948	0.6345
LIQUIDITY_RATIO	0.568407	0.487955	1.164875	0.2452
GROWTH_RATIO	-0.001110	0.001097	-1.011844	0.3126
YIELD_RATIO	0.138626	0.154070	0.899757	0.3692

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.483753	Mean dependentvar	10.95611
Adjusted R-squared	0.418952	S.D. dependent var	12.51977
S.E. of regression	9.543382	Akaike info criterion	7.457244
Sum squared resid	21767.20	Schwarz criterion	7.870396
Log likelihood	-975.7280	Hannan-Quinn criter.	7.623148
F-statistic	7.465220	Durbin-Watson stat	0.709590
Prob(F-statistic)	0.000000		

Correlated Random Effects - Hausman Test
Equation: MODEL3EQ3FXRD
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. df.	Prob.
Cross-section random	1.838926	4	0.7654

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
PROFITABILITY_RATIO	0.076754	0.064777	0.002063	0.7920
LIQUIDITY_RATIO	1.022850	0.959726	0.048934	0.7754
GROWTH_RATIO	-0.001678	-0.001836	0.000000	0.4254
YIELD_RATIO	0.192947	0.221397	0.001778	0.4999

Cross-section random effects test equation:
Dependent Variable: SOCIAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 13:51
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.42825	1.779223	8.671340	0.0000
PROFITABILITY_RATIO	0.076754	0.141880	0.540974	0.5890
LIQUIDITY_RATIO	1.022850	0.735172	1.391306	0.1654
GROWTH_RATIO	-0.001678	0.001653	-1.015676	0.3108
YIELD_RATIO	0.192947	0.232128	0.831209	0.4067

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.486193	Mean dependent var	18.02978
Adjusted R-squared	0.421698	S.D. dependent var	18.90752
S.E. of regression	14.37844	Akaike info criterion	8.277009
Sum squared resid	49410.77	Schwarz criterion	8.690161
Log likelihood	-1086.396	Hannan-Quinn criter.	8.442912
F-statistic	7.538496	Durbin-Watson stat	0.692955
Prob(F-statistic)	0.000000		

Correlated Random Effects - Hausman Test
Equation: MODEL4EQ4FXRD
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. df.	Prob.
Cross-section random	3.114324	4	0.5389

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
PROFITABILITY_RATIO	0.393035	0.341847	0.007386	0.5514
LIQUIDITY_RATIO	3.374094	2.791956	0.178158	0.1678
GROWTH_RATIO	-0.001756	-0.001721	0.000000	0.9295
YIELD_RATIO	0.477133	0.449901	0.006760	0.7405

Cross-section random effects test equation:
Dependent Variable: GOVERNANCE_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 13:53
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	31.22813	2.484979	12.56676	0.0000
PROFITABILITY_RATIO	0.393035	0.198159	1.983429	0.0485
LIQUIDITY_RATIO	3.374094	1.026790	3.286061	0.0012
GROWTH_RATIO	-0.001756	0.002308	-0.760783	0.4475
YIELD_RATIO	0.477133	0.324205	1.471699	0.1424

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.337717	Mean dependent var	40.93252
Adjusted R-squared	0.254585	S.D. dependent var	23.25976
S.E. of regression	20.08187	Akaike info criterion	8.945184
Sum squared resid	96384.32	Schwarz criterion	9.358336
Log likelihood	-1176.600	Hannan-Quinn criter.	9.111087
F-statistic	4.062430	Durbin-Watson stat	0.872638
Prob(F-statistic)	0.000000		

Pooled OLS Test Outcomes:

Dependent Variable: ESG_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 15:09
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.49246	1.471311	11.88903	0.0000
PROFITABILITY_RATIO	0.117806	0.103294	1.140492	0.2551
LIQUIDITY_RATIO	0.556326	0.547541	1.016043	0.3105
GROWTH_RATIO	-0.002361	0.001597	-1.477960	0.1406
YIELD_RATIO	0.334191	0.210179	1.590032	0.1130

R-squared	0.030567	Mean dependent var	19.70230
Adjusted R-squared	0.015934	S.D. dependent var	14.90829
S.E. of regression	14.78903	Akaike info criterion	8.243994
Sum squared resid	57959.60	Schwarz criterion	8.310631
Log likelihood	-1107.939	Hannan-Quinn criter.	8.270752
F-statistic	2.088932	Durbin-Watson stat	0.377773
Prob(F-statistic)	0.082585		

Dependent Variable: ENVIRONMENTAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 15:15
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.706573	1.235035	7.859348	0.0000
PROFITABILITY_RATIO	0.126773	0.086706	1.462105	0.1449
LIQUIDITY_RATIO	0.028352	0.459612	0.061687	0.9509
GROWTH_RATIO	-0.002310	0.001341	-1.723067	0.0860
YIELD_RATIO	0.278754	0.176427	1.580000	0.1153

R-squared	0.031431	Mean dependent var	10.95611
Adjusted R-squared	0.016811	S.D. dependent var	12.51977
S.E. of regression	12.41409	Akaike info criterion	7.893885
Sum squared resid	40839.02	Schwarz criterion	7.960523
Log likelihood	-1060.675	Hannan-Quinn criter.	7.920644
F-statistic	2.149897	Durbin-Watson stat	0.399431
Prob(F-statistic)	0.075045		

Dependent Variable: SOCIAL_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 15:18
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.46625	1.875077	8.781638	0.0000
PROFITABILITY_RATIO	-0.000299	0.131640	-0.002271	0.9982
LIQUIDITY_RATIO	0.665704	0.697801	0.954003	0.3410
GROWTH_RATIO	-0.003007	0.002036	-1.477024	0.1409
YIELD_RATIO	0.422200	0.267858	1.576211	0.1162

R-squared	0.021111	Mean dependent var	18.02978
Adjusted R-squared	0.006335	S.D. dependent var	18.90752
S.E. of regression	18.84753	Akaike info criterion	8.728986
Sum squared resid	94135.83	Schwarz criterion	8.795624
Log likelihood	-1173.413	Hannan-Quinn criter.	8.755745
F-statistic	1.428740	Durbin-Watson stat	0.383478
Prob(F-statistic)	0.224731		

Dependent Variable: GOVERNANCE_DISCLOSURE_SCORE
Method: Panel Least Squares
Date: 10/13/18 Time: 15:24
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	35.50807	2.285498	15.53625	0.0000
PROFITABILITY_RATIO	0.247423	0.160454	1.542018	0.1243
LIQUIDITY_RATIO	1.683334	0.850537	1.979143	0.0488
GROWTH_RATIO	-0.001683	0.002481	-0.678416	0.4981
YIELD_RATIO	0.420293	0.326487	1.287320	0.1991

R-squared	0.039018	Mean dependent var	40.93252
Adjusted R-squared	0.024512	S.D. dependent var	23.25976
S.E. of regression	22.97292	Akaike info criterion	9.124854
Sum squared resid	139855.1	Schwarz criterion	9.191491
Log likelihood	-1226.855	Hannan-Quinn criter.	9.151613
F-statistic	2.689871	Durbin-Watson stat	0.593754
Prob(F-statistic)	0.031628		

GMM Test Outcomes:

Dependent Variable: ESG_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Date: 10/13/18 Time: 15:36
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270
2SLS instrument weighting matrix
Instrument specification: C PROFITABILITY_RATIO LIQUIDITY_RATIO GROWTH_RATIO YIELD_RATIO
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.49246	1.471311	11.88903	0.0000
PROFITABILITY_RATIO	0.117806	0.103294	1.140492	0.2551
LIQUIDITY_RATIO	0.556326	0.547541	1.016043	0.3105
GROWTH_RATIO	-0.002361	0.001597	-1.477960	0.1406
YIELD_RATIO	0.334191	0.210179	1.590032	0.1130

R-squared	0.030567	Mean dependent var	19.70230
Adjusted R-squared	0.015934	S.D. dependent var	14.90829
S.E. of regression	14.78903	Sum squared resid	57959.60
Durbin-Watson stat	0.377773	J-statistic	8.03E-28
Instrument rank	5		

Dependent Variable: ENVIRONMENTAL_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Date: 10/13/18 Time: 15:40
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270
2SLS instrument weighting matrix
Instrument specification: C PROFITABILITY_RATIO LIQUIDITY_RATIO GROWTH_RATIO YIELD_RATIO
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.706573	1.235035	7.859348	0.0000
PROFITABILITY_RATIO	0.126773	0.086706	1.462105	0.1449
LIQUIDITY_RATIO	0.028352	0.459612	0.061687	0.9509
GROWTH_RATIO	-0.002310	0.001341	-1.723067	0.0860
YIELD_RATIO	0.278754	0.176427	1.580000	0.1153

R-squared	0.031431	Mean dependent var	10.95611
Adjusted R-squared	0.016811	S.D. dependent var	12.51977
S.E. of regression	12.41409	Sum squared resid	40839.02
Durbin-Watson stat	0.399431	J-statistic	2.25E-28
Instrument rank	5		

Dependent Variable: SOCIAL_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Date: 10/13/18 Time: 15:43
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270
2SLS instrument weighting matrix
Instrument specification: C PROFITABILITY_RATIO LIQUIDITY_RATIO GROWTH_RATIO YIELD_RATIO
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.46625	1.875077	8.781638	00000
PROFITABILITY_RATIO	-0.000299	0.131640	-0.002271	0.9982
LIQUIDITY_RATIO	0.665704	0.697801	0.954003	0.3410
GROWTH_RATIO	-0.003007	0.002036	-1.477024	0.1409
YIELD_RATIO	0.422200	0.267858	1.576211	0.1162

R-squared	0.021111	Mean dependent var	18.02978
Adjusted R-squared	0.006335	S.D. dependent var	18.90752
S.E. of regression	18.84753	Sum squared resid	94135.83
Durbin-Watson stat	0.383478	J-statistic	1.01E-28
Instrument rank	5		

Dependent Variable: GOVERNANCE_DISCLOSURE_SCORE
Method: Panel Generalized Method of Moments
Date: 10/13/18 Time: 15:47
Sample: 2007 2016
Periods included: 10
Cross-sections included: 27
Total panel (balanced) observations: 270
2SLS instrument weighting matrix
Instrument specification: C PROFITABILITY_RATIO LIQUIDITY_RATIO GROWTH_RATIO YIELD_RATIO
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	35.50807	2.285498	15.53625	0.0000
PROFITABILITY_RATIO	0.247423	0.160454	1.542018	0.1243
LIQUIDITY_RATIO	1.683334	0.850537	1.979143	0.0488
GROWTH_RATIO	-0.001683	0.002481	-0.678416	0.4981
YIELD_RATIO	0.420293	0.326487	1.287320	0.1991

R-squared	0.039018	Mean dependent var	40.93252
Adjusted R-squared	0.024512	S.D. dependent var	23.25976
S.E. of regression	22.97292	Sum squared resid	139855.1
Durbin-Watson stat	0.593764	J-statistic	1.49E-28
Instrument rank	5		