Suspicious or standard: how the 'S' in ESG has changed the game for companies under the Modern Slavery Act

Tamara H. Shadbolt

Bachelor of Business (Honours)

2021

Statement of Original Authorship

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text. I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of Student: Tamara H. Shadbolt[1]

Date: 22nd November 2021

Abstract

Even though modern slavery is technically illegal, over 40 million men, women and children are victims of modern slavery (Walk Free Foundation, 2018). Governments have attempted to mitigate modern slavery through legislation, with Australia joining the club as one of the most recent countries to implement a Modern Slavery Act (MSA). Australia is particularly exposed to practices of modern slavery through imported goods, for instance, apparel, fish, rice, cocoa, and electronics having long interconnected global supply chains. This introduction of legislation has affected how companies integrate Environmental, Social & Governance (ESG) strategies and investors seeking higher ESG ratings. In this thesis, I implement a cohort study that examines the effects of the adoption of the MSA on the Australian Securities Exchange (ASX) 200 constituents. I accomplish this by analysing a company's social responsibility behaviour between 2015 to 2020. The MSA aims to mitigate the lack of open data, transparency on supply chains, reporting standardisation, and exacerbating modern slavery. I find that five sectors; consumer services, consumer staples, industrials, information technology, and utilities, are affected by the introduction of the MSA. Furthermore, I uncover that Morgan Stanley Capital International (MSCI) modern slavery scores are sensitive to the introduction and enforcement of the MSA. Interestingly, during the MSA's three-year introduction period I find that a company's revenue and modern slavery labour management scores have a negative relation. This the first time the effects of the MSA on the ASX200 company's social behaviour is documented. The combination of research in an emerging area, a novel dataset on modern slavery, and analysis developed in this paper will significantly contribute to the current ESG and modern slavery literature.

Table of Contents

List of Figures

List of Tables

List of Defined Terms

Term	Definition
ANOVA	Analysis of Variance
ASX	Australian Securities Exchange
ATO	Australian Taxation Office
AUD	Australian Dollars
COVID-19	Coronavirus Disease
df	Degrees of freedom
ESG	Environmental Social & Governance
EY	Ernst & Young
GICS	Global Industry Classification Standard
GLM	Generalised Linear Model
GRI	Global Reporting Initiatives
GSI	Global Slavery Index
ISS	Institutional Shareholder Services
JSC	Australian Joint Standing Committee
MS	Mean Squares
MSA	Australian Modern Slavery Act (2018)
MSCI	Morgan Stanley Capital International
NFP	Not-for-Profit
NGOs	Non-Government Organisations
OLS	Ordinary Least Squares
PPE	Personal Protective Equipment
PWC	PricewaterhouseCoopers
RBA	Reserve Bank of Australia
S&P	Standard & Poor's
SASB	Sustainability Accounting Standards Board
SDGs	Sustainable Development Goals
SS	Sum of Squares
Transparency Act	Transparency in Supply Chains Act (2010)
UK	United Kingdom
USA	United States of America
USD	United States Dollars

1. Introduction

Global Environmental, Social & Governance (ESG) assets under management in 2020 surpassed 35 trillion United States Dollars (USD), representing 34% of total global assets under management (Bloomberg, 2021). Significant demand for sustainable investing has led to an exponential growth in the creation of ESG based indices and focused funds. The challenge to capture information on how a company's actions can influence society through negative and positive externalities has led to the birth of ESG metrics and creating transparency on reporting standards. This change has resulted in the wide availability of ESG data, ratings, reports, and frameworks for ESG integration. Global sustainable investments have significantly increased since 2004 by 68% (BlackRock, 2020). This growth in the scale of capital invested into ESG assets has led to a transformational shift to mainstream investing.

Upward pressure from activist investor trends, awareness (and acceptance) of the need to "step up" company engagement towards social issues is attracting industry attention (KPMG, 2021; Neilan, Reilly, & Fitzpatrick, 2020). In 2018, Australia and New Zealand had the highest share of sustainable investments globally with approximately 63% of professionally managed ESG assets (Global Sustainable Investment Alliance, 2019). This trend represents Australia's growing focus for investors to map their portfolios and align investment strategies with the United Nations Sustainable Development Goals (SDGs).

The 'S' component of ESG, commonly known as socially sustainable finance, is comprehensive and is difficult to quantify and define. Over the past two decades, socially sustainable finance has progressively widened with the evolution of businesses and markets becoming interconnected through the advancement of technology. Social factors include workplace health & safety, labour issues, diversity & equality, human rights & ethics, product safety & quality, and stakeholder opposition (Giese, Nagy, & Lee, 2021). Recently, incorporated into the 'S' component is the effect of modern slavery on company's supply chain systems, which has been an important shift.

Modern businesses across all sectors face challenges with the adoption of technology which has equated to companies having long and complex supply chains and operations. These supply chains are commonly outsourced by more cost-efficient international partners (Tian & Guo, 2019). This complexity of interconnected supply chain systems can increase the probability of modern slavery going undetected. The major challenge stakeholders face is the convolution around capturing social factors in ESG compared to the environmental and governance factors. Also, the lack of consistency and comparability in social scores and techniques to reduce the risks of modern slavery impede the drive towards more socially sustainable investing. As the spotlight grows on the 'S' component, companies will need to adapt and change their position from reactive to proactive. This shift means fund managers face challenges beyond the reporting of data to addressing non-financial material societal issues in their investment strategies.

Entities such as Morgan Stanley Capital International (MSCI) have become the "gold" standard for ESG ratings across various industries and are used globally. For instance, KPMG, PricewaterhouseCoopers (PWC), Ernst & Young (EY), Deloitte, and the world's largest asset manager,

BlackRock, all use MSCI ratings (Deloitte, 2020; EY, 2021; KPMG, 2020; PWC, 2021). MSCI is one of the longest standing ESG rating metrics developed in 1990[2]. With over 30 years of experience MSCI ESG ratings have extensive exposure to a wide range of companies including, large-, mid-, and small-capitalisation emerging market companies compared to other ESG rating agencies (Abhayawansa & Tyagi, 2021). Supply chain management is an essential social and environmental issue surrounding corporate sustainability (Ortas, M. Moneva, & Álvarez, 2014). Companies interest in supply chain risks has increased in recent years due to global competition, manufacturing out-sourcing, and decreased product life cycles (Gold, Trautrims, & Trodd, 2015). With these factors in mind, companies face the risk of modern slavery in their supply chains.

Modern slavery is a broad term that encompasses a diverse range of activities, for instance, forced labour, bonded labour, debt bondage, child labour, forced marriage, human trafficking and domestic servitude (Christ & Burritt, 2018). It is estimated that globally in 2018, approximately 40 million men, women and children were victims of modern slavery (Walk Free Foundation, 2018). The United Nations SDGs have focused their global policy initiative to combat measurement accessibility of modern slavery (United Nations, 2021). Furthermore, markets and regulators are focusing on modern slavery risks to align with the SDGs. To mitigate modern slavery, countries have increased regulations and created policies. The Commonwealth of Australia in 2018 launched the Modern Slavery Act (MSA). The goal of the MSA was to ensure that Australian firms whose annual revenue surpasses 100 million Australian Dollars (AUD) do not add to modern slave trade. The MSA stipulates that entities operating or based in Australia must submit annual statements on the potential risks of modern slavery in their supply chains, operations, and actions to mitigate modern slavery (Australian Department of Home Affairs, 2018). The MSA supports the United Nations Guiding Principles on Business and Human Rights and is mirrored through global frameworks and increased disclosure rules (United Nations, 2021).

Frameworks such as, Sustainability Accounting Standards Board (SASB) materiality map help investors identify sustainability issues that affect the financial condition or operating performance across sectors. The relevant factors for modern slavery in sub-industry risk include supply chain management, labour practices, employee health & safety, and business ethics (Global Reporting Initiative, Sustainability Accounting Standards Board, & PWC, 2021). ESG metrics providers like MSCI are used widely by investors to assess and reveal exposures to ESG risks. Ultimately, these ESG metrics can be the deciding factor for investors when constructing their investment portfolios. The influence ESG ratings providers have on capital allocation to address the SDGs is therefore significant. Whilst the supply chain component of the ESG ratings exists, most asset managers and fund managers are in the early stages of enhancing their ESG integration to include modern slavery factors in the investment process and portfolio holdings. This differentiation across metrics highlights the challenges in evaluating the accuracy of index providers measures and, more importantly appropriate integration, engagement, and effective risk management.

---

[2] MSCI website: https://www.msci.com/our-solutions/indexes/kld-400-social-index

Exposure to companies that are at risk of modern slavery within their supply chains will adversely affect portfolio credit quality and future returns (Babich, Burnetas, & Ritchken, 2007). However, there is little connection between credit quality and ESG ratings (Kiesel & Lücke, 2019).

The dearth of research between the influence of the MSA on the Australian Securities Exchange (ASX) 200 and ESG metrics has led to an emphasis on benchmarking ESG ratings. The objective of this study is to investigate whether the standard ESG ratings (MSCI) truly represent modern slavery risks, in particular supply chain risk. This objective is important because investors heavily rely on ESG ratings to make informed investment decisions which may be erroneous or misleading in capital allocation.

To empirically analyse the association between the introduction and enforcement of the MSA on the ASX200, trends were examined during the period 2015 – 2020. I use a novel dataset that measures modern slavery risks and a leading industry ESG rating provider, MSCI, to analyse a company's social responsibility behaviour. The estimation technique adopted to empirically analyse the effects of the MSA, and a company's social responsibility is a Generalised Linear Model (GLM) approach with repeated measures.

I find that a company's MSCI social scores and modern slavery scores are sensitive to the three key announcements of the MSA. In 2017 when the first media announcement was made, in 2018 when the MSA was passed in Parliament and, 2019 when the MSA was enforced. I find that the Global Industry Classification Standard (GICS) sector, a moderating factor influences a company's social scores with significant increases during 2017, 2018, and 2019. This suggests that the MSA in the short-term drives a company's social scores depending on GICS sector. A company's MSCI social score, supply chain score, and human capital score all demonstrate moderating associations with a company's revenue, market capitalisation, and GICS sector. In December 2021 the Australian Parliament will revise the MSA. It is recommended that any revisions to the MSA incorporate a lower revenue threshold from 100 million AUD to 10 million AUD to include small- and medium-sized companies. In addition, the MSA should include different reporting requirements for each sector based on varying levels of modern slavery risk. It is clear from the analysis that each sector has a different level of risk associated with modern slavery and further reporting requirements should be included in the MSA.

Moreover, revenue is found to have an association on a company's MSCI scores. The labour management score a proxy for modern slavery with a focus on a company's supply chain management revealed a negative relation with revenue during 2016 - 2018. Suggesting, that a company was focusing more on generating revenue during the three-year MSA enforcement period rather than increasing their labour management score. Thus, during 2016 and 2018 as a company's revenue increases their labour management score decreases.

I also uncover that when comparing long-standing MSCI scores to a new modern slavery scorecard metric from the Institutional Shareholder Services (ISS) (used by Australia's second largest superfund with

over 130 billion AUD assets under management in 2020, Aware Super[3]), they have low correlations. Highlighting the differences among ESG rating providers. Furthermore, when comparing social scores via GICS sector they differed across the two metrics. Further analysis can be conducted when more data becomes available, as the new modern slavery scorecard from ISS was released in June 2021 with one reporting period.

This paper contributes to the current ESG and modern slavery legislation literature and highlights the importance of mitigating modern slavery. The provisions of this paper are three-fold by nature. Firstly, to demonstrate key findings of an empirical analysis of the modern slavery legislation and the implications the MSA has on a company's social scores. Secondly, by integrating variables with the SDGs, this paper highlights the need for company transparency and the complexity around screening for modern slavery. Lastly, government agencies, in particular policymakers and regulators, and non-government organisations (NGOs) will gain a further understanding of how modern slavery can socially impact a company's behaviour. Furthermore, as the MSA will be revised in December 2021, this paper can be used as reference point when implementing changes.

Modern slavery is still globally prevalent, and change is needed. To ignite this change further research is a crucial element to combating modern slavery. This paper aims to analyse the effects of implementing a country wide modern day slavery legislation and a company's social behaviour. The economic rationale behind this research is to describe the ASX200 company's social behaviour during the introduction and enforcement of the MSA. This research will be the first to document this behaviour. This paper seeks to create transparency around global supply chain risks, standardise ESG ratings, and understand ESG risk exposures. In addition, to further understand if there is an association between the adoption of the MSA and a company's social behaviour. Lastly, this paper will provide insights for other countries looking to employ a modern slavery legislation. My findings highlight the economic value of maintaining socially responsible sourcing practices and inform the current policy debate on the importance of greater transparency in corporate supply chains.

This paper is structured and follows the following layout. Section 2 outlines the relevant literature on modern slavery, legislation, ESG integration, and socially responsible investing. Section 3 includes hypothesis development. Section 4 describes the data and methodology development including variable explanations, descriptive statistics, and limitations. Section 5 presents the empirical findings including a trend analysis, main results, robustness checks and implications for future research. Finally, section 6 includes concluding remarks.

---

[3] Aware Super website: https://aware.com.au/

2. Literature Review

The literature was used to determine key factors behind ESG reporting metrics, risk factors of modern slavery and the MSA. English papers issued between 1963 and 2021 were selected via ScienceDirect, Crunchbase, and Google Scholar using a backward snowballing method[4]. Abstracts and titles were analysed and categorised into key themes. These dimensions include transparency, modern slavery, supply chains, ESG ratings, sectors, capital allocation and quantification. A total of 110 papers were selected from the process, representing the most relevant evidence to support the study objectives.

2.1   Defining Modern Slavery

The term modern slavery is a relatively new term but is slowly being incorporated into legislation, government policies and company practise. According to the Global Slavery Index (GSI), modern slavery includes any practices that constitute to human trafficking, slavery, servitude, forced labour, debt bondage, forced marriage and child labour (Walk Free Foundation, 2018). In 2018, the GSI revealed that 40.3 million people globally were living in modern slavery, with 71% female and 29% male. Of the 40.3 million suffering from modern slavery, 24.9 million were in forced labour. Unfortunately, approximately 15,000 victims were accounted for in Australia (Walk Free Foundation, 2018). Even though slavery technically has been outlawed, it still occurs in developed countries' societies. The top 10 countries with the highest prevalence of modern slavery according to the Walk Free Foundation (2018) are outlined in Figure 1. The leading products with the highest risk of modern slavery include laptops, computers and mobile phones, clothing, fish, cocoa, and sugarcane (Walk Free Foundation, 2018).

Figure 1. Top 10 countries at high risk of modern slavery[5]

---
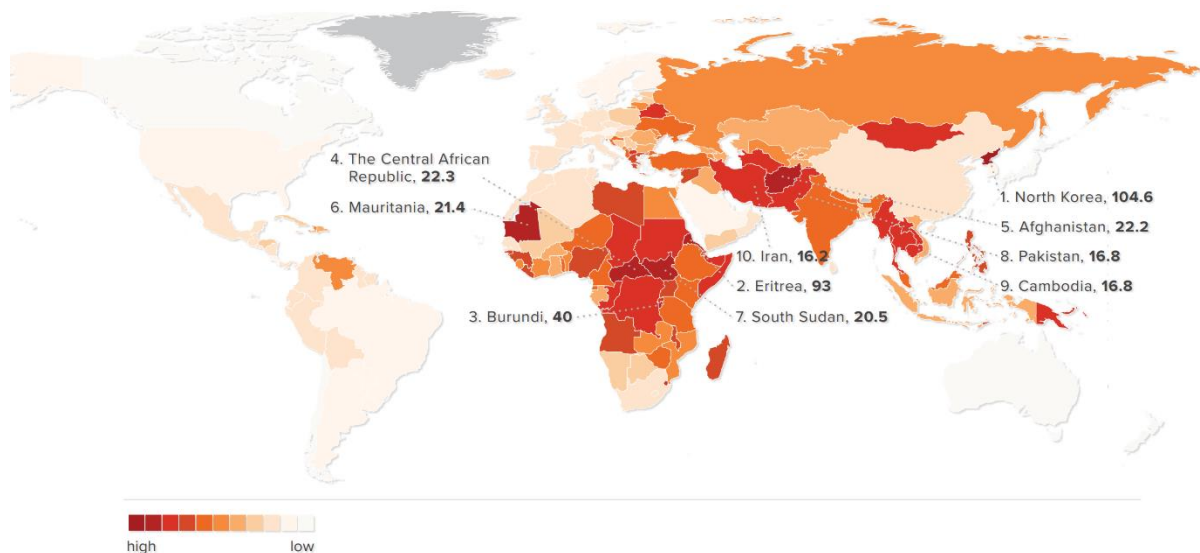
[4] Backward snowballing method is used when conducting systematic literature reviews and uses the reference lists to identify additional papers (Badampudi, Wohlin, & Petersen, 2015) (see section 7.1 Appendix 1 for more details).

[5] Estimated prevalence of modern slavery by country per 1,000 population (Walk Free Foundation, 2018).

2.2   Modern Slavery Literature

The dearth of research between the adoption of the MSA and a company's social behaviour has prompted this study. The predominant literature around modern slavery legislation is law papers (Perry, 2018). Vijeyarasa (2019) study highlighted how Australia missed the opportunity the create good company practise through the MSA. Furthermore, an event study by Cousins, Dutordoir, Lawson, and Neto (2020) examines the shareholders wealth effects of the adoption of the United Kingdom (UK) Modern Slavery Act 2015. They analyse stock price reactions of UK companies covered by the UK Modern Slavery Act to eight events associated with the UK Modern Slavery Act. They found no evidence of abnormal stock returns but suggest that the UK Modern Slavery Act provides a competitive advantage to companies addressing risks of modern slavery. The study highlighted important market behaviour in reaction to the adoption of the UK Modern Slavery Act.

Other research around modern slavery includes discourse quality statements. Pham, Cui, and Ruthbah (2021) from Monash University conducted an analysis on the ASX100 disclosure statement quality. They found a wide dispersion in terms of quality of the modern slavery statements. Woolworths has the best disclosure quality score and Resmed with the weakest disclosure score. This study emphasised the wide range of modern slavery statements quality submitted and suggests that government include disclosure templates for companies. Currently, there is no literature on the effects of implementing the MSA and the effects of company's social behaviour. This study is first of its kind and with significantly add to the emerging literature of modern slavery.

2.3   Legislation

Regulatory attempts to tackle modern slavery vary among different countries. In the United States of America (USA), only in the state of California introduced the Transparency in Supply Chains Act (Transparency Act) in 2010. The Transparency Act requires retail sellers or manufacturing companies with an excess of 100 million USD worldwide revenue to disclose efforts to eradicate slavery and human trafficking from their supply chains (State of California Department of Justice Office, 2010). Since the Transparency Act was voluntary, many companies decided not to disclose this information. As a result, only 19% of companies submitted a report between 2010 and 2015 (Hsin, 2020). Thus, the Transparency Act did not create a large amount of transparency. Five years after the Transparency Act, the UK introduced a Modern Slavery Act with companies whose annual revenue surpasses £36 million, requiring reporting of any potential risks of modern slavery. Note, the UK's Act did not focus on supply chains and manufacturing regulations. Like the USA Transparency Act, the UK's Act did not make reporting mandatory and approximately 50% of companies produced annual modern slavery report (Walk Free Foundation, 2019).

Australia introduced the MSA in 2018 with a focus on supply chains, transparency, and accountability (Vijeyarasa, 2019). The MSA stipulates that companies operating or based in Australia with an annual consolidated revenue over 100 million AUD are required to annually report any risks of modern slavery in their supply chains and operations, and actions to mitigate those risks of modern slavery. The MSA came into force on 1 January 2019 and currently has 2,214 reporting entities, with 1,961 mandatory

and 253 voluntary statements lodged with 36 countries being involved (Department of Home Affairs, 2018).

Based on the recent the GSI report, the top 10 countries taking action to mitigate modern slavery are: The Netherlands, USA, UK, Sweden, Belgium, Croatia, Spain, Norway, Portugal and Montenegro (Walk Free Foundation, 2018). Note, Australia was not included in the list as the MSA had not been passed at the time of the report. However, Australia's top 5 imported products at high risk of modern slavery were mentioned the GSI report and included: electronics, garments, fish, rice and cocoa (Walk Free Foundation, 2018).

A number of academics have investigated whether a regulatory approach centred on transparency is more appropriate than legislation. For instance, LeBaron and Rühmkorf (2017) argues that the UK's Act was a soft form of law and did not include incentives for companies to improve good practice. By introducing government incentives as suggested by LeBaron and Rühmkorf (2017) creates good practice but is not a long-term solution.

France has taken steps to join the fight against modern slavery with the introduction of the French Corporate Duty of Vigilance law in 2017. The law is intended to strengthen companies' corporate social responsibly and aid any modern slavery victims (Schilling-Vacaflor, 2021). In 2019, The Netherlands introduced the Netherlands Child Labour Due Diligence Law to tackle modern slavery in global supply chains. Entities covered by the Law must report due diligence around their supply chains to prevent child labour. The regulator provides an online registry available to the public.

Government's tend to promote the belief that legislation around reporting and disclosures is a solution to the complexity of modern slavery (Nolan & Boersma, 2019). Currently, the majority of reporting requirements are on a voluntary basis, allowing a company to determine how and what to divulge. A number of critics believe governments have fallen short by not requiring more transparency (Hsin, 2020; Islam & Van Staden, 2021; Vijeyarasa, 2019). Christ and Burritt (2018) argue that countries should use France's Law as a template. In particular, the strong emphasis towards accountability with France executing penalties of up to €10 million if reporting regulations are not met.

2.3.1   Australian Modern Slavery Act 2018

Throughout history human slavery has been one of the most horrendous crimes (Muhammad, 2003). One of the first legislation to combat slavery, The Centenary of the Emancipation Act was passed in 1833 by the British Parliament (Drescher, 1987). This Act was a steppingstone that has paved the way for our current society. The term 'modern slavery' prompts the world that slavery and slavery-like practices are still prevalent around the world, often hidden in plain sight. As of 2018, according to the Global Sustainable Investment Alliance (2019) Australia has approximately 15,000 victims of modern slavery (0.54% of the population), thus, highlighting the need for government action.

The Australian Joint Standing Committee (JSC) on Foreign Affairs, Defence and Trade in February 2017 conducted an inquiry into establishing a Modern Slavery Act in Australia comparable to the UK's 2015 Modern Slavery Act. This was one of many steps Australia has taken to address modern slavery and was driven by Not-for-Profit (NFP) agencies, The Cambodian Children's Trust and Forget Me Not Foundation. During the inquiry 2017, Tara Winkler founder of The Cambodian Children's Trust stated *"…the stark reality is that many Australians are paying child traffickers and child abusers, indirectly"* (Murdoch, 2017). As a result of this inquiry the Australian government announced in February 2017 the introduction of legislation to combat modern slavery and will require large businesses to report annually on their actions taken to address modern slavery (Commonwealth of Australia, 2017).

The Commonwealth of Australia passed the MSA on 10 December 2018 and entered into force on 1 January 2019 (Australian Department of Home Affairs, 2018). The MSA established a national modern slavery reporting obligation. Australian entities and other entities in the Australian market with annual consolidated revenue that surpasses 100 million AUD will need to fulfill the reporting obligations, affecting 2,500 entities (Australian Department of Home Affairs, 2018). The MSA stipulates entities operating or based in Australia must submit annual statements on the potential risks of modern slavery in their supply chains, operations, and actions to mitigate modern slavery (Australian Department of Home Affairs, 2018).

The MSA prompts the Australian business community to "clean up" their social responsibly. The MSA creates accountability and transparency among businesses. Furthermore, the Australian Government publishes theses annual modern slavery statements through the Australian Boarder Force online modern slavery registry, available to public. The MSA supports the United Nations SDGs and is mirrored through global frameworks and increased disclosure rules (United Nations, 2021).

The goal of the MSA was to join the global battle to mitigate modern slavery and to create transparency and accountability around reporting standards. The MSA has had two reporting periods since enforced and will be revised in December 2021. From the literature, the MSA has had a positive impact and utilised frameworks other countries legislations to improve practises. In contrast, Vijeyarasa (2019) suggests that Australia had a missed opportunity to create company "good" practice but instead created another compliance issue. Vijeyarasa (2019) believes that the reporting requirements annual consolidated revenue threshold should have been lowered to 10 million AUD to include medium sized entities[6]. Furthermore, a risk-based approach for companies with a lower annual consolidated revenue could have been considered. This would force smaller business to assess exposures to their supply chains and potentially widen the reach of the enactment where relevant.

Overall, the literature argues both positive and negative aspects of the MSA in Australia, with hindsight in mind. Vijeyarasa (2019) view on how the MSA highlighted Australia's missed opportunity was

---

[6] The Australian Tax Office (ATO) defines a small business as having annual consolidated revenue of less than 10 million AUD (Australian Taxation Office, 2016).

interesting and had valid points but was a harsh critique and should be considered for the review in December 2021. Moreover, the MSA enactment out weights the negative critiques and is a positive step towards eradicating modern slavery.

2.4   ESG Integration

The Global Sustainable Investment Alliance (2019) report revealed that Australia and New Zealand in 2018 had the highest sustainable investments in the world with 63% of professionally managed funds. Since then, Australia and New Zealand's proportion of sustainable investing assets have dropped to 37.9% as of 2020 (The Global Sustainable Investment Alliance, 2021). From this report, it is evident that ESG investing is making a large impact on fund managers investment strategies and thus, the need for ESG rating metrics.

In recent decades asset managers have started integrating ESG metric ratings into their investment decisions, but ESG does not come without controversy. In 2014, Eurosif (2014) stated that ESG integration *"…is an explicit inclusion by asset managers of ESG risks and opportunities into traditional financial analysis and investment decisions based on a systematic process and appropriate research sources...".* The integration of ESG on portfolio construction can potentially add higher costs and constraints for asset managers. van Duuren, Plantinga, and Scholtens (2016) argues that mutual funds engaged with ESG investing increased their funds expense ratio. The study revealed that, the average differed by 13 basis points and was statistically significant. It is interesting to note that the van Duuren et al.'s study findings had a limited sample size and a short collection period. The overall conclusion, is establishing the right balance between ESG investing and satisfying shareholders' needs is not easily determined (Kotsantonis & Serafeim, 2019). This conclusion suggests that there is a need for standardised ESG ratings.

Historically, fund managers have based their investment strategies on two key pillars of information. First, fundamental information which is around a company's financial statements, intrinsic value, and growth prospects. And secondly, technical information derived from historical performance returns, stock prices momentum or movement and market trends. For decades this information has aided fund managers in making sound investment strategies. Verheyden, Eccles, and Feiner (2016) argue that with technological advancements, widespread availability of data and speed of processing information has led to challenges in creating investment strategies that out preform the market.

Multiple attempts have been made to standardise ESG ratings with MSCI, Morningstar, Bloomberg and *S*ustainalytics leading the industry. Fund managers use these platforms to make informed investment decisions around sustainable investing and reduce exposures to ESG risks (Giese et al., 2021). ESG scores deliver insights on the ESG performance of a company in caparison to its industry peers. Fund managers utilise these scores to reduce exposures to ESG risks (Hübel & Scholz, 2020). In summary, fund managers aim to outperform the market and reduce exposure to risk. As the popularity of ESG-linked assets are rising the importance of benching ESG ratings is vital in creating transparency.

2.5   Socially Responsible Investing

Social investment decisions are becoming a widely discussed topic among investors. A paradigm shift is slowly emerging towards viewing social integration not just as performance based around risk and return but more towards social outcomes (Kiesel & Lücke, 2019). Since the early 2000's various ESG rating metrics have been developed at a firm-level to measure ESG performance, which are extensively cited in the literature (Fatemi, Glaum, & Kaiser, 2018; Friede, Busch, & Bassen, 2015; Velte, 2017). A major issue is that these ESG rating metrics reveal inconsistencies among rating agencies. Ratings depend on the providers preferences, weights of contributing factors and their systematic methodology.

As a result, some companies may receive a high ESG score but upon further investigation have poor social standards. For example, Boohoo a leading UK fast fashion company was given the second highest rating by an influential ESG metric agency, MSCI, mainly due to the location of its supply chain. Boohoo's supply chain is located in the UK and not in a high-risk jurisdiction of modern slavery, thus, MSCI gave a high rating. This outcome led to Boohoo receiving large investments from ESG funds (Cohen, Nelson, & Rosenman, 2021). During the Coronavirus Disease (COVID-19) pandemic in 2020 the company was found to be sourcing garments from Leicester factories, well known for modern slavery conditions (Khan & Richards, 2021). Boohoo was further shamed for not providing their workers with the correct personal protective equipment (PPE), contributing to its share price crashing. This is a demonstration of inefficient capital allocation and highlights the methodological floors in ESG rating metrics. But MSCI was not the only one, a review from nine other ESG rating agencies placed Boohoo in the top 25th percentile globally (Cohen et al., 2021).

Liang and Renneboog (2020) argue that the COVID-19 pandemic rapidly exposed how the interconnections between economic impact and ESG risks heavily rely on social aspects compared to environmental and governance factors. This has sparked the debate on how much social impact weighs against the environmental and governance components. There is a plethora of literature and data surrounding environmental and governance investing but social investing is lagging behind. Halbritter and Dorfleitner (2015) believe that fund managers and asset managers must go beyond the traditional performance metrics (Fama-French three-factor model, Fama-French-Carhart four-factor model, Fama–MacBeth regression etc) and standard ESG ratings in order to examine the relationship between a company's financial and social performance. Their study revealed, results that contradicted the prominent ESG literature and strongly questioned whether there is an actual relationship between ESG ratings and returns. Thus, modern fund managers are moving away from traditional performance metrics and not viewing social factors as a material financial risk. Currently, there is a lack of consensus among the literature whether socially responsible investing increases or weakens performance, in the short term.

2.6   Socially Responsible Sourcing

Managing the social responsibility of interconnected supply chains has become a challenge in modern management. There have been numerus examples of unethical, irresponsible, and potential criminal behaviour from suppliers (Lin-Hi & Müller, 2013; Scheidler & Edinger-Schons, 2020). These serious implications can have a ripple effect on firms supply chains. For instance, Nike, an American sporting apparel company in the late 1990s revamped their social image around supply chains. They developed a manufacturing strategy that was designed to maximise investments and increase shareholder value regardless of any social impacts. Nike was found to be subcontracting manufacturing to sweatshops in under developed countries with low wages, poor labour standards, child labour and ignored good practice (Greenberg & Knight, 2004). A report was leaked to the media on Nike's factory working conditions and global supply chains. As a result, Nike experienced intense public backlash for supporting modern slavery. This event triggered the need for awareness and transparency around supply chains.

There is a rapid growth in literature on social responsibility in supply chains with a focus on decision making. The majority of papers focus on the effects of introducing incentives and legislation on suppliers and if firms behave responsibly. A theoretical study by Cho, Fang, Tayur, and Xu (2019) analyses different pricing and inception strategies that highlight the challenges of child labour in supply chains. They found that a global firm can reduce their prevalence of child labour by physically inspecting each supplier. But this is not always a practical solution in modern management as supply chains and often international and interconnected. Thus, Cho et al. (2019) study was a good start but lacked practical solutions to combat child labour in supply chains.

In contrast, Kraft and Raz (2017) investigated the power of consumer awareness and how stakeholders can influence a firms supply chain sustainability. Interestingly, the study found collaboration was only possible when an equilibrium was met of shared fixed cost savings for both stakeholders and consumers. Kraft and Raz (2017) study highlighted the complexity around socially responsible supply chains and concluded that collaboration with manufactures is vital. Furthermore, collaboration is paramount to creating future strategies that have both social and economic benefits for socially responsible firms.

2.7   Sectors at Risk of Modern Slavery

Each country has certain sectors that are at higher risk of modern slavery than others, mainly depending on a country's imports and exports. The classification of sectors can heavily influence a company's social scores (GICS, 2020). In Australia, the top 7 sectors at risk of modern slavery are outlined in Figure 2.

Figure 2. Australia's sectors at high risk for modern slavery.

Consumer Discretionary	Consumer Staples	Materials	Finanical Scerices	Healthcare	Industrials	Real Estate
Garnments	Rice	Mining	Value Chain	Surgical Equipment	Cleaning Services	Property Development
	Fish	Business Models	Investment Insurance Products	Medical Supplies	Electronics	Property Management
	Cocoa	Supplies	Customers	Sourcing of Workers From Asia		Construction
	Agraculture					

The financial services sector represents 35% of the ASX200. The financial services are increasingly exposed to high risk of modern slavery through their supply chains, in particular, their investment insurance products (ACSI & KPMG, 2019). The real estate and industrials sector together represents 16 % of ASX200 companies. The areas that are at high risk for modern slavery are property development/management, cleaning services, construction, and real estate investment trusts (ACSI & KPMG, 2019). The consumer staples have the highest risk of modern slavery in Australia due to high levels of importing rice, fish and cocoa from overseas (Global Sustainable Investment Alliance, 2019). Approximately 16% of ASX200 represents the materials sector. Areas that are at high risk for modern slavery in this sector include mining and their complex supply chains, product procurement and transportation (Walk Free Foundation, 2018). Healthcare represents 8.2% of ASX200 companies and faces its highest risk of modern slavery in the procurement of medical goods. For instance, electronics, surgical equipment, and medical supplies. As factories are generally located in high geographical areas of modern slavery (ACSI & KPMG, 2019).

3. Hypothesis Development

The dearth of research between the adoption of the MSA and the ASX200 company's social behaviour highlighted the need for research in this area. There is tension in the literature with studies focusing predominately on the missed opportunities of the UK Modern Slavery Act 2015 and the California Transparency Act 2010. Also, there has been studies focused on the quality of the modern slavery disclosure statements. This is the first time the effects of the introduction of the MSA on Australian company's social behaviour will be documented.

The lack of data and barriers around quantification of modern slavery has yielded the growth of literature on the effects of the MSA on the ASX200 constituents. This study addresses these barriers by formulating three hypothesises related to the effects of the introduction of the MSA on the ASX200 constituents MSCI social scores.

Our main research question establishes the effects of the adoption of the MSA and a company's social behaviour. Therefore, I set the hypothesises as:

Hypothesis 1: The introduction of the Modern Slavery Act improves a company's social pillar score, due to the transparency around reporting and MSCI's systematic methodology.

Hypothesis 2: The regulation and use of existing global systematic metric ratings such as MSCI, in the short term, prompts higher social scores without fully capturing modern slavery.

Hypothesis 3: The announcement of the MSA encourages companies to utilise the opportunity to increase their revenue before legislation comes into force.

The size and risks associated with modern slavery are hard to quantify, but an attempt has been made in this study using a novel data set that has the potential to significantly add to the literature.

4. Data and Empirical Design

This section outlines the sample selection, essential data sources required and a proposed methodology to empirically analyse the effects of the MSA on the ASX200. In addition, missing data techniques applied are outlined. Lastly, data descriptive statistics, Pearson's correlation matrix, limitations and address other econometric issues are discussed.

4.1 Sample Selection

The benchmark selected to empirically analyse the effects of modern slavery on Australian companies is the ASX200. The sample selection of this study was limited to the available data provided by MSCI on the ASX200 constituents social ratings between 2015 and 2020. From the ASX200, 134 companies had complete data between 2015 and 2020, while 64 companies had partial data and 2 companies had no data available (see section 7.2 Appendix 2 for list of companies). Therefore, the sample for this study analyses 134 ASX200 companies.

A longer collection period was desired but due to MSCI's adaptive framework model, prior to 2015 MSCI's social score calculations differed (MSCI, 2014). The human capital theme score experienced the most changes within the social pillar score. In particular, labour management, health & safety, and supply chain labour standard scores were not included or differed prior to 2015 (Madison & Schiehll, 2021). Therefore, 2015 was selected as the starting period. Moreover, an attempt was made to extend the collection period to 2021. However, financial information such as, revenue and market capitalisation had high levels of missing data for 2021. Consequently, 2021 was dropped and 2020 was selected as the end period to mitigate the large amount of missing data for revenue and market capitalisation.

4.2 Data Sources

Databases from multiple sources was collated to achieve the objectives of this study (see section 7.3 Appendix 3).

4.2.1 MSCI

There are various ESG ratings providers, for instance, Bloomberg, Sustainatylics, Thomson Reuters ESG and FTSE Russell. A plethora of papers use MSCI as the "gold" standard for ESG ratings (Dorfleitner, Halbritter, & Nguyen, 2015). Furthermore, the ASX, AMP, KPMG, PWC, EY, Deloitte and BlackRock use MSCI data to conduct ESG assessments (AMP, 2020; ASX, 2021; BlackRock, 2020; Deloitte, 2020; EY, 2021; KPMG, 2021; PWC, 2021). Lastly, MSCI was the first ESG provider to assess companies based on industry financial materiality (ASX, 2021).

The MSCI ESG ratings database contained monthly ratings for 12,977 global companies from January 2015 to December 2020. MSCI provides extensive social ratings, has a large coverage of Australian companies and is one of the leading ESG data providers in the industry (Kotsantonis & Serafeim, 2019). For these reasons above the MSCI database is an ideal data source and was selected for this study.

MSCI ESG ratings evaluates a company's environmental, social and governance key issues and uses a weighted ranking system. To align with the objectives of this study and capture potential risks of

modern this study focuses on MSCI's social elements, in particular, the human capital theme scores (a proxy for modern slavery) and labour management score (a proxy for modern slavery supply chain management).

4.2.2 Refinitiv

Refinitiv provides a wide range of financial information. Australia's central bank, the Reserve Bank of Australia (RBA), uses the Refinitiv database to conduct their analysis on the economic prosperity and welfare of the Australian people (He, 2021). The Refinitiv database was chosen for this study due to the high validity of their data. Annual revenue and annual market capitalisation (a proxy for firm size) was extracted during the collection period.

4.2.3 Bloomberg

To further analyse the extent of the MSA on Australian company's various social company polices were collected. Bloomberg offers a diverse database of company polices. Social company polices extracted included supply chain modern slavery assessment, supply chain management, policy against child labour, human rights policy, Global Reporting Initiatives (GRI) checked and GRI compliance. *Note*, the social compliance polices are used as a proxy for to account the effects of other factors that may influence a company's social behaviour.

4.2.4 Modern Slavery Registry

The Modern Slavery Registry is a public database provided by the Australian Boarder Force[7]. The registry offers comprehensive information on a company's modern slavery statements and reporting duties. Surprisingly, this database has been underutilised in the literature with limited studies (Vijeyarasa, 2019). The Modern Slavery Registry currently has 2,214 entities that have reported on operations and supply chains risk in accordance to mitigate modern slavery. With 1,961 mandatory and 253 voluntary statements lodged. The modern slavery statement status, overseas reporting obligations and modern slavery statement page number was retrieved.

4.2.5 ISS ESG Scorecard

The ISS ESG modern slavery scorecard is a novel dataset that is tailored to the ASX200 constituents that analyses four components that drive modern slavery, including risk assessment, disclosure and performance, controversies, and modern slavery statements. This novel dataset was provided by Aware Super and is not available to the public. The ISS scorecard believes that when it comes to modern slavery reporting Australian entities need to go further than simply ticking a compliance box and utilise their obligations under the MSA to proactively protect the rights of workers (ISS ESG, 2021). This prompted ISS to create an in-depth methodology to screen for modern slavery. As this is a new dataset only one reporting period has been release for 2021. This dataset is used to analyse and compare MSCI's social scores.

---

[7] Modern slavery registry database: https://modernslaveryregister.gov.au/

4.3   Variables

This section describes the main dependent variables, explanatory variables, and the control variable in relation to modern day slavery. A summary of all variables in the empirical analysis refer to Table 18 in section 7.3 of Appendix 3.

4.3.1   Dependent Variables

The four main dependent variables are analysed to capture the effects of the Modern Slavery Act on the ASX200. These dependent variables include:

4.3.1.1   MSCI Social Pillar Score

The main dependent variable is the MSCI social pillar score. The MSCI ESG social pillar score is widely used among industry professionals to screen for companies' social risk (Dorfleitner et al., 2015). The social pillar score is weighted based on a company's human capital, product liability, stakeholder position and social opportunity themes (MSCI, 2020) (see Figure 3). These themes, in particular, the human capital theme directly relates to modern slavery. Therefore, it is vital to understand the change in these scores. Scores range between 0 – 10 on a scale where 0 is represented as poor company social responsibility and 10 representing a company having high social responsibility. For example, if a key chemical used to create a product is deemed unethically sourced, but the company continues to use it, even though there is a more sustainable option this will induce a lower social score. Monthly social pillar scores were collected and converted from monthly to annual scores by using the mean for each company. Note, the database used to collect social pillar scores was provided by MSCI.

Figure 3. MSCI social pillar score structure, 2020 methodology.
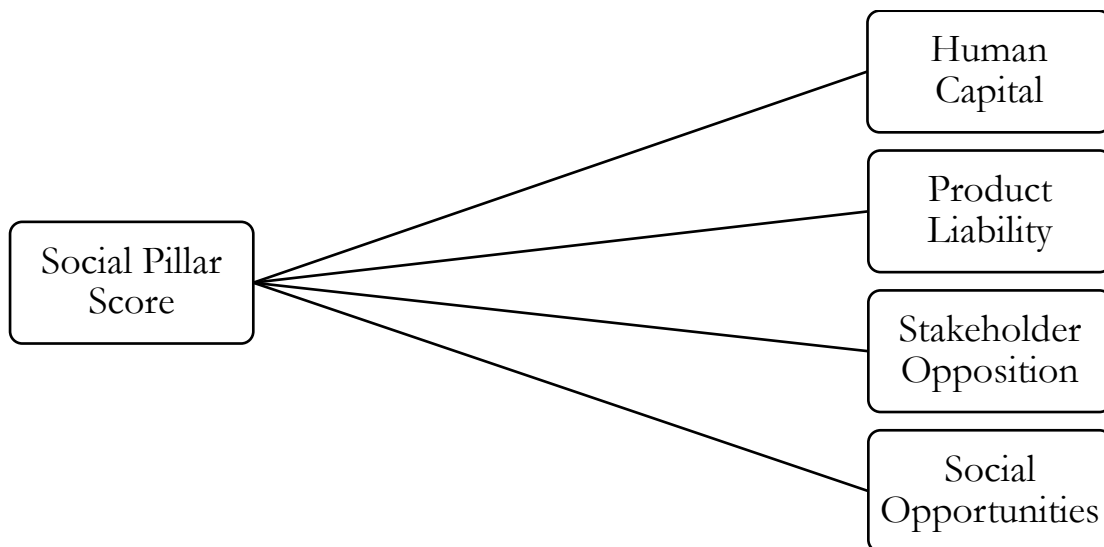
4.3.1.2   MSCI Human Capital Theme

The MSCI human capital theme score encompasses five key issues around modern slavery including labour management, health and safety, human capital development, supply chain labour and supply chain labour standards (see Figure 4). This variable is important in this study because this will help further isolate and understand the effects of the MSA on the ASX200. An essential aspect to analysing modern slavery is that modern slavery is not a financially material risk (SASB, 2021). According to the Head of Responsible Investment at a leading socially sustainable super fund, Aware Super, Liza McDonald said *"a common mistake when evaluating modern slavery is the people need to view modern slavery as not a financial material risk"* (McDonald, 2021). This is a key element for industry funds to understand about modern slavery. Incorparting financial and non-financial material risks into company practice is imperative to continue to mitigate modern slavery (ACSI & KPMG, 2019). Scores range between 0 – 10 on a scale where 0 is represented as a company having high risk of modern slavery and 10 representing a company having low risk of modern slavery. For example, if an employee was getting under the award wage, then that company would receive a lower human capital theme score. The database used to collect human capital theme scores was provided by MSCI.

Figure 4. MSCI human capital theme structure, 2020 methodology.
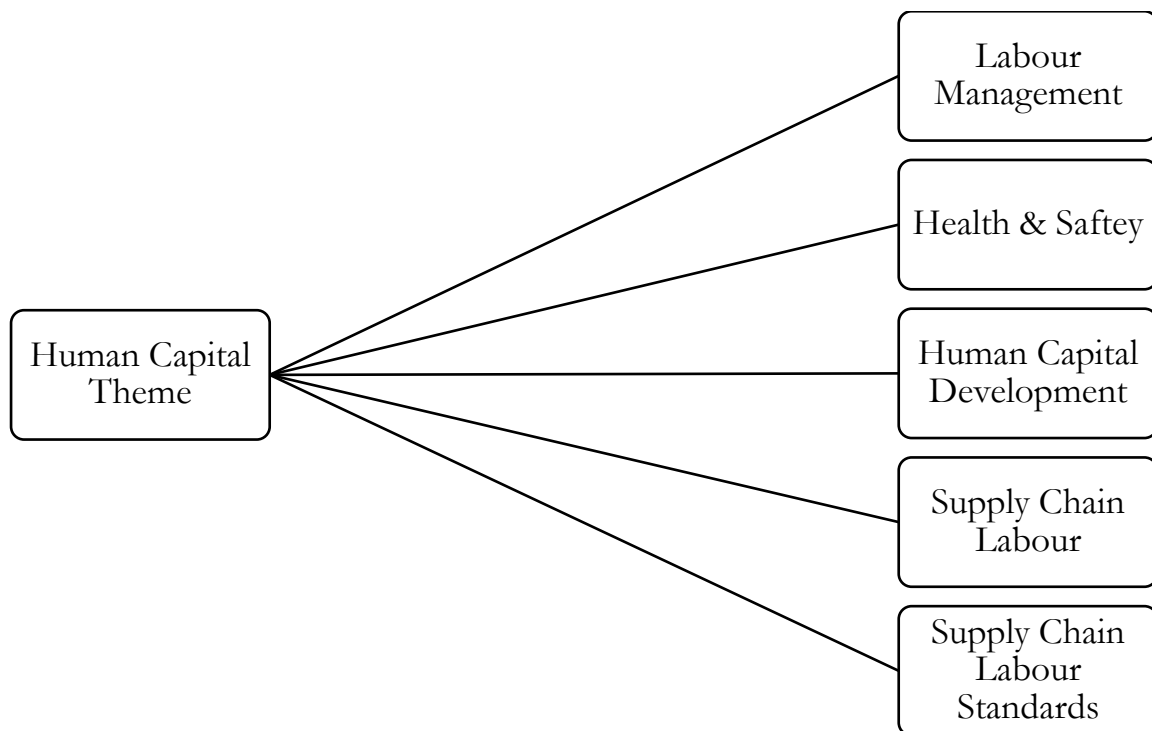
4.3.1.3 MSCI Labour Management Score

The labour management score evaluates the extent of how companies mitigate risk around labour unrest, workforce size, corporate restructuring, company policies, employee benefits, employee training and labour-related controversies (MSCI, 2019). Scores are between 0 – 10 on a scale where 0 is represented as poor labour management and 10 representing a company having high quality labour management. For example, if a company does not provide the proper Personal Protective Equipment (PPE) to their employees or has a factory located in a country[8] at high risk for modern slavery then the company will receive a lower labour management score. This variable was chosen due the labour management being an enabler for modern slavery (Global Sustainable Investment Alliance, 2019). This data was provided by MSCI.

4.3.1.4 Revenue

A company's revenue is represented by a firm's gross operating activities less any sales adjustments such as, discounts, returns and allowances. Revenue was selected as a dependent variable due to the MSA's requirements of reporting on companies over 100 million AUD. This study further analyses the effects of the Modern Slavery Act on revenue. Previous studies that analyse the effects of legislation on a country often use revenue as an indicator for company behaviour and growth (Owusu-Ansah & Yeoh, 2005; Sun & Al Farooque, 2018). Due to large values and skewed normality the natural log of revenue will be used in this study (see section 7.4 Appendix 4). The revenue variable used in this analysis was obtained from Refinitiv database.

4.3.2 Explanatory Variables

The sparse research on determinants of modern slavery has highlighted the importance of further investigation of how the Modern Slavery Act effects companies' social responsibility scores is needed. In this section explanatory variables are described and their expected relations to modern slavery. These variables include:

Sector: To investigate whether sector has an effect on the Modern Slavery Act a classification system was needed. The GICS sector was selected to classify each company by sector. The GICS sector is an industry leading company used widely by industry and academics to classify companies into sectors and industries (Vermorken, Szafarz, & Pirotte, 2010). GICS assigns each company to a sector and the classification is strictly hierarchical and can only belong to one group. There are a total of 11 sectors including communication services, consumer discretionary, consumer staples, energy, financials, healthcare, industrials, information technology, materials, real estate and utilities (see section 7.5 Appendix 5 for descriptions). The GICS sector aligns with the ASX200 constituents and MSCI's systematic methodology. Thus, using the GICS classification system was most appropriate for this study. This variable is expected to show a relation between MSCI's social scores, as different sectors have higher risks of modern slavery

---

[8] Top five countries with high prevalence of modern slavery of important products in the context of Australia are: China, Malaysia, India, Vietnam and Thailand (Walk Free Foundation, 2018).

according to the GSI report in 2018 (Global Sustainable Investment Alliance, 2019). Furthermore, across different sectors there are different levels of modern slavery associated, therefore, sector was selected to investigated which sectors was most sensitive to the adoption of the MSA. The GICS sector variable used in this analysis was obtained from the MSCI database.

Firm size: From the literature many papers measure firm size as total sales, total assets and market capitalisation depending on the scope of the study. Each firm size measurement has advantages and disadvantages, and no measure can fully capture all characteristics of "firm size" (Dang, Li, & Yang, 2018). In general, total sales measures is not forward looking and is focused on product market competition, total assets measures a firm's total resources, and market capitalisation encompasses a firm's equity market condition and growth opportunities (Holmstrom & Kaplan, 2001; Robinson, 2008; Seru, 2014). Furthermore, Forbes Global 2000 uses market capitalisation as a measure to globally rank large companies (Murphy, 2018). For this study market capitalisation was chosen to measure firm size as market capitalisation is more forward looking and market oriented. Market capitalisation is selected as a proxy for firm size due to larger companies having longer interconnected global supply chains and are more exposed to risk of modern slavery practices. The firm size variable of market capitalisation used in this analysis was obtained from Refinitiv database. Note, due to large values and normality the natural log of market capitalisation is used (see section 7.6 Appendix 6).

Time: Due to the nature of this study, analysing the effects of the adoption of the MSA over time is a vital variable for this study. Three key dates are examined, the first media announcement of the MSA on 15 February 2017, when the MSA was passed by in parliament on 10 December 2018, and when the MSA was enforced on 1 January 2019.

Modern slavery statements: The statements consist of a company's risks of modern slavery, how they plan to mitigate modern slavery and what actions can be taken. To empirically analyse the statements the page number of each statement was collected as there is no set template provided by the government. The length of a statement can indicate the depth of knowledge a company has on potential risks of modern slavery (Larsen, Bukh, & Mouritsen, 1999; Mackie, 1963). The thought process behind using this variable is to analyse the commitment level of a company has on modern slavery risks. The modern slavery statement a company releases is important to the ethics of a company and a proxy for this is the length of a company's modern slavery statement. It is considered the longer the statement is the more knowledge a company has of its modern slavery risks. The modern slavery statements variable was obtained from the Australian Boarder Force registry database.

Revenue 2015: To investigate the effects of the Modern Slavery Act on a company's revenue, the year 2015 was selected. The year was determined due the Pearson correlation matrix of the ASX200 revenue for each year showed similar correlations (see section 7.6 Appendix 7). Furthermore, to mitigate the effects of COVID-19 revenue decrease 2015 was selected for robustness. Therefore, the beginning period of 2015

chosen. To normalise this variable the natural log of revenue in 2015 was taken (see section 7.4 Appendix 4). The 2015 revenue variable was obtained from Refinitiv database.

The following six explanatory variables were obtained from Bloomberg. *Note*, a company's social compliance policies are used as a proxy to indicate higher social scores. As theoretical if a company already has compliance policies around modern slavery, they will have a higher score? In addition, these policies are used to signal if a company is taking modern slavery seriously.

GRI Checked: The Global Reporting Initiatives[9] indicates whether a company's G4 General Standard Disclosures or application for materiality matters has been checked by the GRI. This compliance variable was chosen to check that if a company already has a compliance check in place would this encourage higher scores.

GRI Compliance: Indicates whether a company has used the GRI framework for guidance for public reporting and varying degrees of compliance. This compliance variable was chosen to check if a company already has compliance checks effect the MSA.

Human Rights Policy: Indicates whether a company has implemented any initiatives to ensure the protection of the rights of all employees.

Policy Against Child Labour: This policy indicates whether a company has implemented any initiates to mitigate child labour in all parts of its business.

Supply Chain Management: Evaluates a company's aggregate performance on the issue of social supply chain management, which relates to a company's social supplier compliance and other related topics. Issue scores rand from 0 -10 with 0 indicating the lowest rating and 10 indicating positive social supplier compliance.

Supply Chain Assessment: This assessment conducted by Bloomberg indicates whether a company has implemented initiatives to minimise risk of slavery, human trafficking or forced labour by engaging in verification of product supply chains, conducting audits of suppliers to evaluate supplier compliance with company standards, or requiring direct suppliers to certify that materials incorporated into the product comply with the law around modern slavery.

---

[9] GRI website: https://www.globalreporting.org/

4.3.3   Control Variable

The sparse research on determinants of modern slavery has highlighted the importance of further investigation of how the MSA effects the ASX200 is needed. The control variable in this analysis is a company's overseas reporting obligations. The control variable indicates if a company has any other modern slavery overseas reporting obligation to either the UK Modern Slavery Act 2015, the California Transparency in Supply Chains Act 2010, the French Corporate Duty of Vigilance 2017 or the Netherlands Child Labour Due Diligence Law 2019. The control variable was entered using a binary method with 1 indicated yes and 0 indicating no. This control variable is selected due to MSCI ratings using global information. This will account for information effecting MSCI scores outside Australia.

It is anticipated that companies that already have reporting obligations around modern slavery will have higher social scores. Globally there are four regulations to combat modern slavery (excluding Australia). From the literature, there has been limited empirical studies investigating the effects of these regulations on company socially responsible behaviour (Mantouvalou, 2018). The overseas reporting obligations variable used in this analysis was obtained from the Australian Boarder Force registry database.

4.4　Empirical Design

4.4.1　Methodology development

To select the most appropriate methodology the study must be clearly defined. This is a cohort study that tests the hypothesises that in the short term the MSCI social scores are affected by the introduction and enforcement of the MSA. Consequently, the study methodology attributes the association between the introduction and enforcement of the MSA by examining the trends in MSCI social scores over the period 2015 – 2020. Furthermore, the study methodology considers the moderating effects of GICs sector, overseas reporting obligations, a company's revenue in 2015 and firm size on MSCI trends over the 2015 – 2020 period. The important time points for the introduction and enforcement of the MSA is the first media announcement of the MSA on 15 February 2017, when the MSA was passed in parliament on 10 December 2018, and when the MSA was enforced on 1 January 2019.

Due to the nature of the variable data a method was selected outside the usual area of traditional finance. The method selected that best suit the nature of the data is the generalised linear model with repeated measures. Often used is biological sciences studies, repeated measures of multivariate continuous or discrete data across time best suits the nature of the studies data (Glaz & Yeater, 2018). From the literature, there has been no previous quantitative studies investigating the effects of the MSA and a company's social responsibility scores. Therefore, there are few statistical tools available to analyse such data. The general purpose of GLM is to quantify the relation between several independent variables and a dependent variable using a particular distribution based on a linear relationship. The GLM approach with repeated measures has a considerable body of literature devoted to its statistical power (Brillinger, 2012; Gill & Torres, 2020). Repeated measures are used in this analysis due to the natural of the data having multiple measurements over a period, such data are called repeated measures.

4.4.2　GLM Model Specification

The estimation technique adopted in this analysis is a GLM approach with repeated measures. Equation (1) specifies the baseline GLM. Due to the nature of the data a fixed effect model is used to analyse a company's social behaviour over time. A balanced co-variance matrix is assumed with no differences between variances.

$$y_{i,t} = \beta_{0_i} + \beta_{1_i}X_{i_1} + \cdots + \beta_n X_{i,n} + \varepsilon_{i,t}, \tag{1}$$

where the $y_{i,t}$ refers to the four dependent variables (social pillar score, human capital theme score, labour management score and revenue) measuring modern slavery for company i in estimation year t. X_i refers to a set of explanatory variables including GICS sector, firm size, time, modern slavery statements, social company polices and a company's revenue in 2015. β is the vector of coefficients on modern slavery. *Note*, a control variable is used to account for if a company has any overseas reporting obligations in relation to modern slavery.

4.4.2.1   Repeated Measures Analysis of Variance

From a computational perspective, an analysis of variance (ANOVA) was undertaken as the main statistical method to test the study's hypotheses. ANOVA was preferred over regression due to:

- It's efficient around the use of the partitioning of variances using sums of squares, allowing an efficient process to examine trends over time using a priori contrasts, as well as, between group effects;
- No subject variable;
- The limited number of independent variables in the factorial design, reducing the order effect often a problem with ANOVA; and
- It supports testing the study hypotheses with moderating independent variables occurring in time before the trend of outcome measure over the period.

It is recognised that regression is a more sophisticated method, with more flexibility and better ability to fit a variety of independent variables (fixed and random effects), but for the purposes of the present study these advantages are not significant, while the testing of contrasts using regression typically requires a post hoc adjustment for the risk of type 1 error from multiple testing. A situation less likely with ANOVA where the variances are partitioned to sum to a probability of 1.

The main assumptions for Repeated Measures ANOVA are:

- Independent and identically distributed variables ("independent observations").
- Normality: the test variables follow a multivariate normal distribution in the population.
- Sphericity: the variances of all difference scores among the test variables must be equal in the population (Howell, 2002). Mauchly's test for sphericity is used to test for this assumption.

4.4.2.2   Baseline Formula for Repeated Measures ANOVA

This ANOVA technique requires a separate specification using the following formulas. Equation (2), (3) and (4) specifies the Sum of Squares (SS) formula. Equation (5) and (6) specifies the degrees of freedom (df) formula. Equation (7) and (8) refers to the Mean Squares (MS) formula. Lastly, Equation (9) specifies the test statistic calculated by the ANOVA.

$$SS_{within} = \sum_{i=1}^{n} \sum_{j=1}^{n} (Xij - Xi.)^2, \tag{2}$$

$$SS_{model} = n \sum_{j=1}^{k} (X.j - X..)^2, \tag{3}$$

$$SS_{error} = SS_{within} - SS_{model}, \tag{4}$$

$$df_{model} = k - 1, \tag{5}$$

$$df_{error} = (k - 1) \cdot (n - 1), \tag{6}$$

$$MS_{model} = \frac{SS_{model}}{df_{model}}, \tag{7}$$

$$MS_{error} = \frac{SS_{error}}{df_{error}}, \tag{8}$$

$$F = \frac{MS_{model}}{MS_{error}}, \tag{9}$$

where n denotes the number of subjects and k denotes the number of variables. Xij denotes the score of subject i on variable j. $Xi.$ denotes the mean for subject i, $X.j$ denotes the mean of variable j, and $X..$ denotes the grand mean.

The main contrast method used in the ANOVAs was a repeated comparison where hypothesis testing was based on the null hypothesis $LBM = 0$, where L is the contrast coefficients matrix, B is the parameter vector, and M is the average matrix that corresponds to the average transformation for the dependent variable. Given the period examined was from 2015 to 2020, there were six dependent variables for each ANOVA, a within-subjects factor of six levels, and repeated contrasts used for within-subjects factors, comparing the mean of each level (except the last) to the mean of the subsequent level (year).

4.4.3 Data Validation

To address any missing data as a rule of thumb variables with less than 20% of missing values were replaced with zero. Previous studies have explored the effects of data loss with fixed percentages of 10% and 30%. Studies have shown that removing data with less than 20% missing does not affect the outcome result of the data, therefore, the middle range of 20% was selected for this study (Roth, Switzer, & Switzer, 1999). The human capital theme score had missing values of 1.9% (17/895) and missing values were replaced with zero.

The labour management score had missing values of 26.2% (211/804), therefore, to account for the missing values an Ordinary Least Squares (OLS) regression model was used (see section 7.8 Appendix 8). Due to MSCI's systematic methodology the labour management score is weighted from the social pillar and human capital theme score. As a result, the missing values from the labour management score was replaced by using Equation (10):

$$Labour\ Management_{i,t} = -0.354(Social_{i,t}) + 0.687(HumanCap_{i,t}) + 3.482, \qquad (10)$$

where i and t, denote company and time, respectively. $Social$ and $HumanCap$ refers the MSCI social pillar score and human capital theme score (coefficients are outlined in section 7.8 Appendix 8).

The six polices around a company's social compliance derived from Bloomberg had missing values of 17% (151/894) and were replaced with zero. Note, the policies were used superficially in the model.

4.4.4 Methodological Limitations

There were several data and methodological limitations during this analysis. Firstly, to identify the appropriate methodology for this study various methods were explored, as this area is novel and has quantitative limitations. From the literature, to analyse the effects of legislation on companies many papers use a differences-in-differences (Bertrand, Duflo, & Mullainathan, 2004; Francis, Hasan, John, & Song, 2011; Lawrence, Nguyen, & Upadhyay, 2021; López-Nicolás, Badillo-Amador, & Cobacho-Tornel, 2013). This technique was attempted using the intervention term as companies with less than 100 million AUD of consolidated revenue. This intervention term was trailed due to the MSA's requirements of companies with less than 100 million AUD of consolidated revenue do not need to supply a modern slavery statement. Therefore, there was a potential for a treated group and untreated group to analyse. Upon further investigation of the data the sample group only had 2 companies with less than 100 million AUD of consolidated revenue. As a result, the differences-in-differences technique was not appropriate for this study.

The dearth data available around modern slavery and a company's social responsibility was challenging. An attempt to include the entire ASX200 was made but only 134 companies had MSCI data. The next challenge was quantifying the social component of ESG and collecting quantifiable variables

capturing modern slavery. Most of the literature entails theoretical studies around modern slavery, therefore, variables were difficult to isolate. Due to the difficulty of data availability, quantification and defining modern slavery a small sample size was selected with limited variables to analyse.

Furthermore, the sample period was constrained due to the lack of companies social scores and MSCI's social methodology change in 2015 shortened collection of historical data. The increasing attention on the importance of SDGs i.e., as companies are beginning to become more transparent on their actions towards these goals by releasing more social supply chain data in the future. Data limitations also extended to the modern slavery statements only have had one reporting period and is currently being reviewed by the commonwealth in December 2021. The challenge to empirically analyse social effects of a company under new legislation is a step in the right direction and hopefully with companies becoming more transparent future studies will emerge.

4.5 Summary Statistics

This section outlines the studies summary statistics and descriptive data. The empirical investigation focuses on examining the effects on the adoptions of the MSA of the ASX200 company's social behaviour over time. Table 1. represents descriptive statistics of numerical variables used in this study. Sample distributes of the ASX200 companies are categorised by GICS sector. To inform the sample selection of the ASX200 I aim for a distribution to across all eleven sectors. Table 2 and Figure 5 represents the samples distribution of companies by GICS sector.

Table 1. Descriptive Statistics of Variables[10]

Variable	Obs.	Mean	St. Dev.	Min.	Max.
Labour Management Score	789	5.11	2.14	0.00	10.00
Human Capital Theme Score	789	4.89	2.18	0.00	10.00
Revenue(natural log)	804	14.55	1.53	8.07	18.04
Social Pillar Score	804	4.90	1.76	0.00	10.00
Market Capitalisation (natural log)	804	8.58	1.16	6.11	12.10
Modern Slavery Statement	804	12.93	7.20	0.00	33.00

Notes, descriptive statistics for numerical variables between 2015 and 2020. The logarithm transformation of revenue and market capitalisation is included. As revenue and market capitalisation had large values, taking the natural logarithm makes the variable stationary and comparable to other variables. Both log variables are used consistently in all regressions. Labour Management Score is MSCI modern slavery supply chain management score, Human Capital Theme Score is MSCI modern slavery score, Revenue (natural log) is a company's revenue, Social Pillar Score is MSCI 'S' component, Market Capitalisation (natural log) is a proxy form a company's firm size, and Modern Slavery Statement is the number of a company's modern slavery statement.

Table 2. Descriptive Statistics of ASX200 Companies by GICS Sector

GICS Sector	Obs.	Percentage (%)	St. Dev.
Communication Services	10	7.50	1.72
Consumer Discretionary	18	13.40	1.72
Consumer Staples	7	5.20	1.73
Energy	7	5.20	1.73
Financials	21	15.70	1.72
Health Care	8	6.00	1.73
Industrials	14	10.40	1.72
Information Technology	5	3.70	1.74
Materials	25	18.70	1.71
Real Estate	15	11.20	1.72
Utilities	4	3.00	1.75
Total	**134**	**100**	**-**

Notes, the sample has a minimum of 4 companies across the 11 GICS sectors between 2015 and 2020.

---

[10] Note, market capitalisation is a proxy for firm size.
Rationale behind selecting market capitalisation as a proxy for firm size is outlined in section 4.3.2 Explanatory Variables *Firm size*.

Figure 5. ASX200 Companies by GICS Sector, 2015-2020
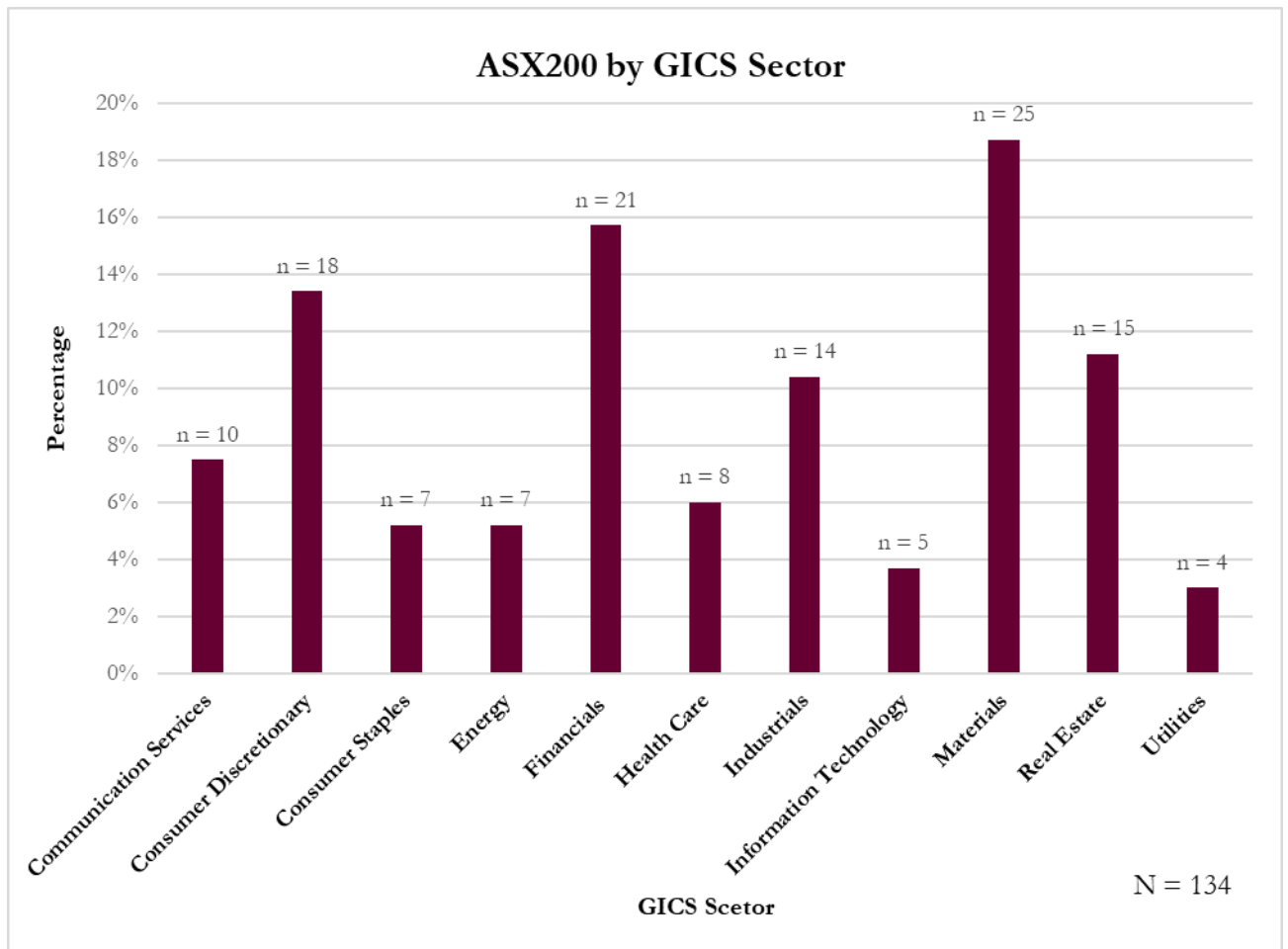
Notes, all percentages are fixed and demonstrates the distribution of GICS sector on the sample (ASX200).

The social compliance policies derived from Bloomberg are categorised by GICs sector and are represented in Table 3. Modern slavery statements are categorised by GICs sector and are outlined in Table 4. Table 5 exhibits a Pearson's correlation matrix for both dependent and explanatory variables respectively. All variables correlation coefficients are below 0.7. As a result, there is no evidence of collinearity issues in this analysis.

Table 3. Descriptive Statistics of ASX200 GICS Sector by Company Social Policies

GICS Sector	Overseas Reporting Obligations		GRI Compliance		GRI Checked		Human Rights Policy		Policy Against Child Labour		Supply Chain Assessment		Supply Chain Management	
	(% YES)	(n)	(% YES)	(n)	(% YES)	(n)	(% YES)	(n)	(% YES)	(n)	(% YES)	(n)	(% YES)	(n)
Communication Services	20%	(2/10)	20%	(2/10)	0%	(0/10)	20%	(2/10)	10%	(1/10)	40%	(4/10)	40%	(4/10)
Consumer Discretionary	27.80%	(5/18)	22.22%	(4/18)	0%	(0/18)	55.60%	(10/18)	50%	(9/18)	61.10%	(11/18)	61.10%	(11/18)
Consumer Staples	28.60%	(2/7)	14.30%	(1/7)	14.30%	(1/7)	42.90%	(3/7)	28.60%	(2/7)	28.60%	(2/7)	28.60%	(2/7)
Energy	14.30%	(1/7)	57.10%	(4/7)	0%	(0/7)	71.40%	(5/7)	71.40%	(5/7)	71.40%	(5/7)	71.40%	(5/7)
Financials	38.10%	(8/21)	42.90%	(9/21)	14.30%	(3/21)	71.40%	(15/21)	52.40%	(11/21)	81%	(17/21)	71.40%	(15/21)
Health Care	87.50%	(7/8)	50%	(4/8)	0%	(0/8)	75%	(6/8)	75.00%	(6/8)	50%	(4/8)	75%	(6/8)
Industrials	21.40%	(3/14)	42.90%	(6/14)	0%	(0/14)	57.10%	(8/14)	42.90%	(6/14)	71.40%	(10/14)	50%	(7/14)
Information Technology	60.00%	(3/5)	20%	(1/5)	20%	(1/5)	80%	(4/5)	60%	(3/5)	80%	(4/5)	20%	(1/5)
Materials	32.00%	(8/25)	60%	(15/25)	8%	(2/25)	68%	(17/25)	64%	(16/25)	72%	(18/25)	72%	(18/25)
Real Estate	20.00%	(3/15)	60%	(9/15)	13.30%	(2/15)	73.30%	(11/15)	66.70%	(10/15)	60%	(9/15)	73.30%	(11/15)
Utilities	0%	(0/4)	50%	(2/4)	0%	(0/4)	75%	(3/4)	75%	(3/4)	0%	(0/4)	75%	(3/4)
Total (Mean, N)	31.30%	(42/134)	42.50%	(57/134)	6.70%	(9/134)	62.70%	(84/134)	53.70%	(72/134)	62.70%	(84/134)	61.90%	(83/134)
p-value		0.04*		0.06		0.17		0.08		0.04*		0.09		0.02*
	Chi-squared = 19.1		Chi-squared = 31		Ch-squared = 26.01		Chi-squared = 29.6		Chi-squared = 32.6		Chi-squared = 28.9		Chi-squared = 235.7	

Notes, variables are categorical, and percentages are fixed.

Overseas Reporting Obligations include if a company's reports to anther modern slavery legislation globally, GRI Checked is if a company has been checked by GRI, GRI Compliance is if a company follows GRI frameworks for guidance for public reporting and varying degrees of compliance, Policy Against Child Labour is if a company has a child labour policy in place, Human Rights Policy is if a company has a human rights policy in place, Supply Chain Management is an evaluation from Bloomberg on a company's aggregate performance on the issue of social supply chain management, which relates to a company's social supplier compliance and other related topics, and Supply chain Assessment indicates whether a company has implemented initiatives to minimise risk of slavery, human trafficking or forced labour by engaging in verification of product supply chains, conducting audits of suppliers to evaluate supplier compliance with company standards, or requiring direct suppliers to certify that materials incorporated into the product comply with the law around modern slavery.

Table 4. Modern Slavery Statements Categorised by GICS Sector

GICS Sector	Modern Slavery Statement Page Numbers				
	Obs.	**Mean**	**St. Dev.**	**Min.**	**Max.**
Communication Services	10	10.9	6.71	2	16
Consumer Discretionary	18	12.89	7.94	2	33
Consumer Staples	7	13.71	9.38	4	32
Energy	7	14.71	5.79	8	26
Financials	21	10.57	4.3	3	21
Health Care	8	9.38	7.13	0	19
Industrials	14	10.93	8.23	4	32
Information Technology	5	10.2	9.01	4	26
Materials	25	14.24	6.7	3	31
Real Estate	15	14.67	8.88	5	30
Utilities	4	16.75	4.57	10	20
Total (Mean, N)	134	12.93	7.22	0	33

p-value = 0.46, F = 0.99 (df 10, 123)

Notes, variables are categorical, and percentages are fixed.
Modern Slavery Statement is the number of a company's modern slavery statement.
For definitions of GICS sector see section 7.5 Appendix 5.

Table 5. Pearson Correlation Matrix – Dependent and Explanatory Variables

Correlation Matrix of Dependent Variables

		(1)	(2)	(3)	(4)
Social Pillar Score	(1)	1			
Revenue (natural log)	(2)	0.10	1		
Human Capital Theme Score	(3)	0.69	0.13	1	
Labour Management Score	(4)	0.29	0.04	0.54	1

Correlation Matrix of Explanatory Variables

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Martket Capitalisation (natural log)	(1)	1										
Revenue (natural log) 2015	(2)	0.30	1									
Time	(3)	0.15	-0.22	1								
Overseas Reporting Obligations	(4)	0.31	0.13	0.12	1							
GRI Checked	(5)	0.11	0.01	0.03	0.01	1						
GRI Compliance	(6)	0.21	0.01	0.01	0.10	0.31	1					
Policy Against Child Labour	(7)	0.22	0.07	0.01	0.18	0.19	0.53	1				
Human Rights Policy	(8)	0.17	0.01	0.04	0.19	0.21	0.54	0.67	1			
Supply Chain Management	(9)	0.25	-0.12	0.45	0.23	0.17	-0.50	0.62	0.10	1		
Supply Chain Assessment	(10)	0.23	0.05	0.00	0.13	0.21	0.67	0.66	0.67	0.31	1	
Modern Slavery Statement	(11)	0.25	0.13	0.00	-0.01	0.15	0.24	0.21	0.13	-0.35	0.19	1

Notes: Table 5 shows the correlation matrix between all independent and dependent variables between 2015 and 2020. Social Pillar Score is MSCI 'S' component representing a company's social responsibility, Revenue (natural log) is a company's revenue, Human Capital Theme Score is MSCI modern slavery score, Labour Management Score is MSCI modern slavery supply chain management score, Market Capitalisation (natural log) is a proxy form a company's firm size, Revenue (natural log) 2015 is a company's revenue in 2015, Time is the collection period of 2015 – 2020 that includes the period during the adoption of the MSA, Overseas Reporting Obligations include if a company's reports to anther modern slavery legislation globally, GRI Checked is if a company has been checked by GRI, GRI Compliance is if a company follows GRI frameworks for guidance for public reporting and varying degrees of compliance, Policy Against Child Labour is if a company has a child labour policy in place, Human Rights Policy is if a company has a human rights policy in place, Supply Chain Management is an evaluation from Bloomberg on a company's aggregate performance on the issue of social supply chain management, which relates to a company's social supplier compliance and other related topics, Supply chain Assessment indicates whether a company has implemented initiatives to minimise risk of slavery, human trafficking or forced labour by engaging in verification of product supply chains, conducting audits of suppliers to evaluate supplier compliance with company standards, or requiring direct suppliers to certify that materials incorporated into the product comply with the law around modern slavery, and Modern Slavery Statement is the number of a company's modern slavery statement.

5. Results

This section presents the findings and a discussion of the empirical analysis. The first section outlines the results of a company's social behaviour over time before the model is applied. The following section examines the three hypothesises of the study and the trends associated, and other findings. The final section includes robustness checks of the model and implications for future research.

5.1   Trend Analysis

The nature of this empirical study analyses the effect of the MSA and a company's social behaviour over time. To understand these changes the four dependent variables (social pillar score, human capital score, labour management score and revenue) are analysed over time (see Figure 6-9). It is important to first discuss the company's social behaviour before running the model.

During the period of 2015 to 2020 the social pillar score, human capital score, labour management score and revenue all show a significance increase in 2017, 2018 and 2019. This is consistent with three important dates in relation to the MSA. These dates are 15 February 2017 when the first public media announcement was made, 10 December 2018 when parliament passed the MSA, and 1 January when the MSA entered into force.

The association between the MSCI social measures and the three important dates around the MSA varied. For instance, the social pillar score had a significant increase between 2016 and 2019, with no significance in 2015 and 2020 (see Figure 6). Possible attributes to these increases could be associated with when the MSA was passed in December 2018 and the enforcement date in January 2019. The Human capital theme, score more aligned with modern slavery had a significant increase between 2016 and 2018. There was no significance in 2015, 2019 and 2020. This differs to the social pillar score as the human capital score starts to plateau a year earlier from 2018 with little variation (see Figure 7).

In contrast, the labour management score more aligned with modern slavery supply chain management had a significant increase in 2017, 2018 and 2019 (see Figure 8). This increase could be attributed to the first media announcement of the MSA in February 2017, when the MSA was passed in December 2018 and when the MSA entered into force in January 2019. The labour management score increases aligns with the three important dates in relation to the MSA compared to the social pillar and human capital theme scores.

Furthermore, revenue had a significant rise between 2015 - 2016 and 2017 -2018 (see Figure 9). This increase could be associated with a company's focus to increase their revenue before the enforcement date of the MSA in January 2019.

Figure 6. MSCI Social Pillar Score of ASX200 constituents, 2015 – 2020
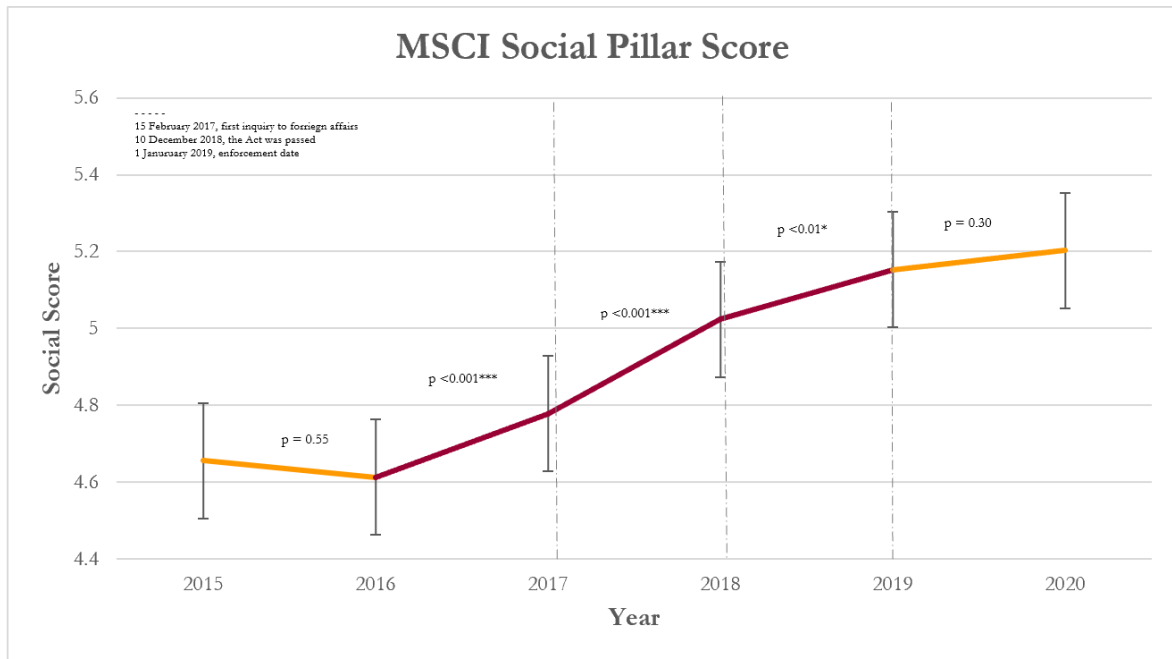
Notes: Tests within subject effects F = 20.14 (df 5, 665) p <0.001, N = 134.
Inter-year p-values refer to repeat contrast.
* indicates to significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.
Social Pillar Score is MSCI 'S' component representing a company's social responsibility.

Figure 7. MSCI Human Capital Theme Score of ASX200 constituents, 2015 – 2020.
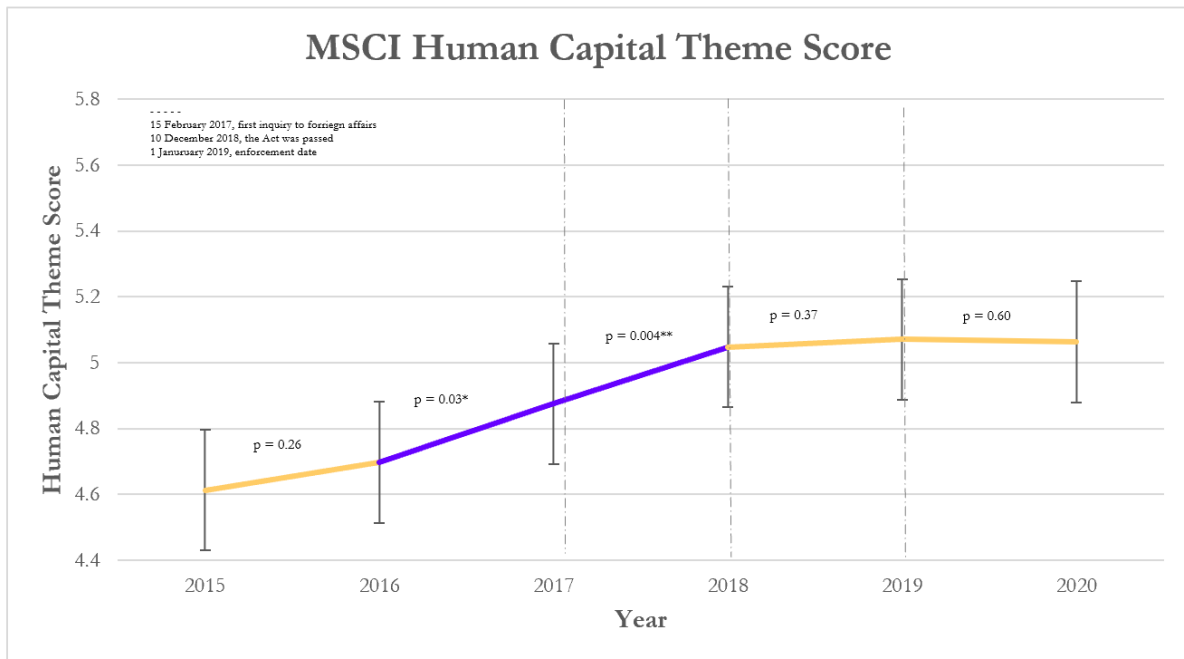
Notes: Tests within subject effects F = 7.283 (df 5, 635) p-value<0.001, N = 128
Inter-year p-values refer to repeat contrast.
* indicates to significance with a p-value <0.05, ** p-value <0.01, ***p-value <0.001.
Human Capital Theme Score is MSCI modern slavery score.

Figure 8. MSCI Labour Management Score of ASX200 constituents, 2015 − 2020.
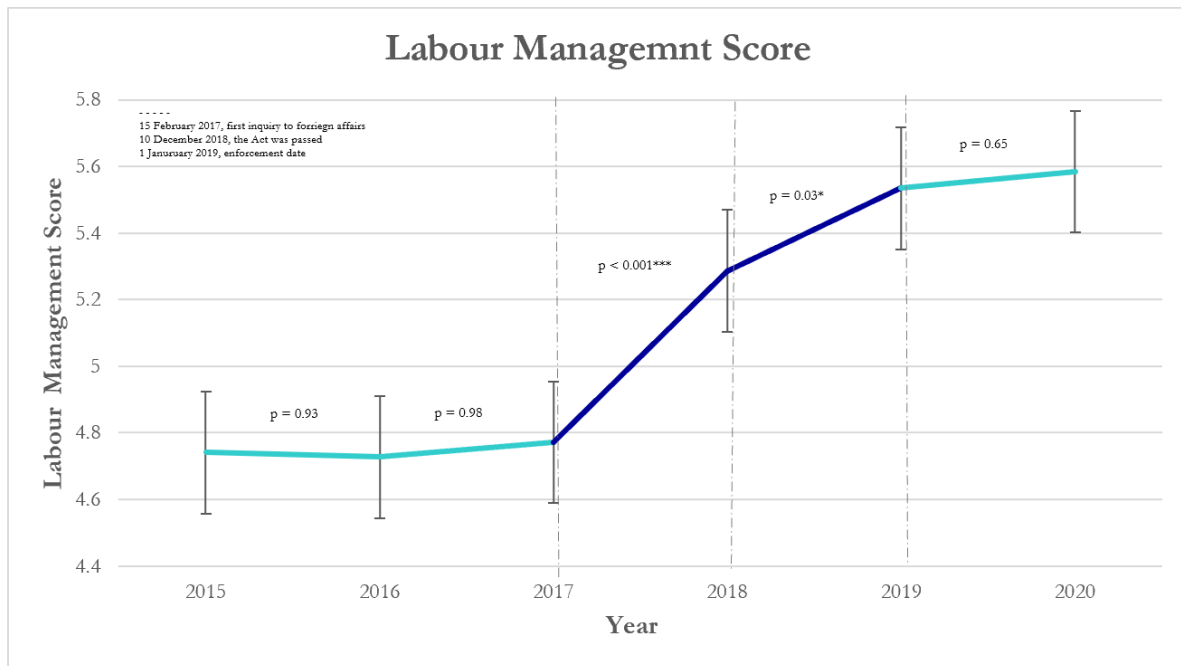
Notes: Tests within subject effects F = 17.136 (df 5, 635) p-value<0.001, N = 128
Inter-year p-values refer to repeat contrast.
* indicates to significance with a p-value <0.05, ** p-value <0.01, ***p-value <0.001.
Labour Management Score is MSCI modern slavery supply chain management score.

Figure 9. MSCI Labour Management Score of ASX200 constituents, 2015 − 2020.
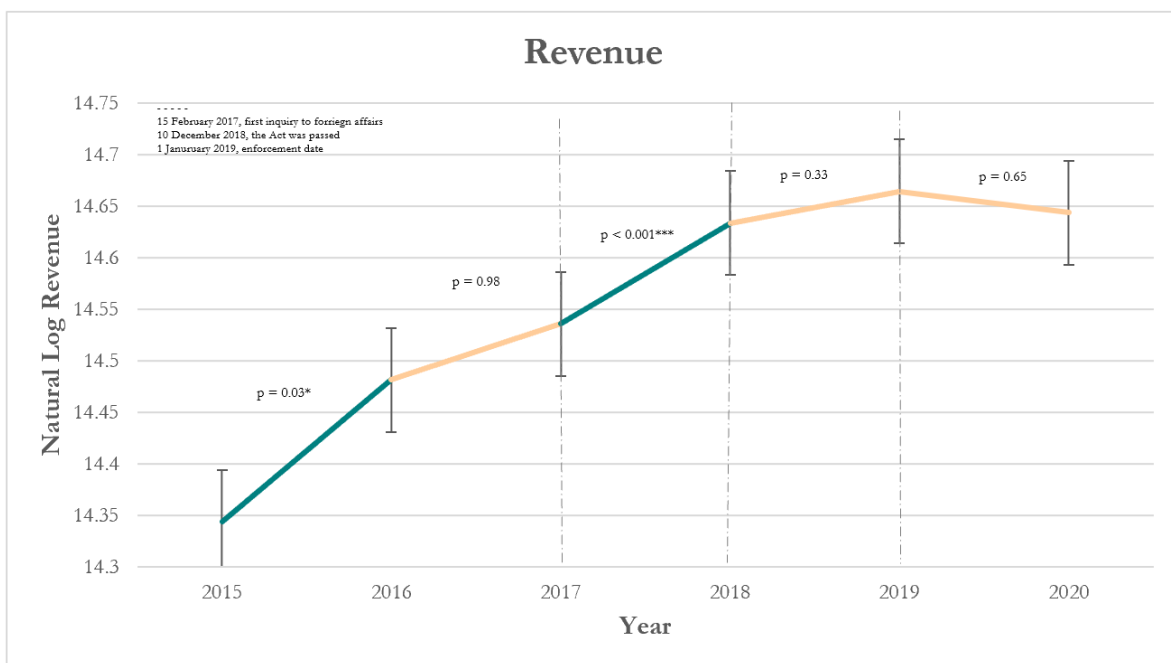
Notes: Tests within subject effects F = 13.316 (df 5, 660) p-value<0.001, N = 134
Inter-year p-values refer to repeat contrast.
* indicates to significance with a p-value <0.05, ** p-value <0.01, ***p-value <0.001.

In summary, before the model is run there is a trend around the three key announcements of the MSA on a company's MSCI scores. However, this trend could have been caused by external factors. Therefore, to further tease out this trend and other associations that are affected by the MSA on the ASX200 the main model is now run with moderating factors.

5.2 Main Results

In this section, the three hypotheses are examined using a generalised linear model with repeated measures. To further gain an understanding of what influences a company's social behaviour the following models are analysed.

5.2.1 Does the Modern Slavery Act in the short term, drive a company's social scores?

The results between a company's social pillar score and potential modern slavery indicators over time are represented in Table 6. A generalised linear model with repeated measures was performed. The key significant variables are GICS sector, time, and revenue 2015. To address the first hypothesis of whether in the short term, the MSA improves a company's social responsibility score over time is represented in Table 6. The explanatory power of this regression was satisfactory with an adjusted R-squared 98.21%.

Table 6. Generalised Linear Model with Repeated Measures ANOVA Tests Within ASX200 Constituents, Social Pillar Score (2015 – 2021)
'

Variable	Type III Sum of Squares	df	Mean Square	F	p-value
Time	8.9	5	1.78	4.42	<0.001***
Time*Revenue (natural log) 2015	5.13	5	1.03	2.05	0.03*
Time*Overseas Reporting Obligations	1.58	5	0.32	0.78	0.56
Time*GICS Sector	37.58	50	0.75	1.87	<0.001***
Error(Time)	241.42	600	0.4		

Note, overseas reporting obligation was used as a control variable.
* indicates to significance with a p-value <0.05, ** p-value <0.01, ***p-value <0.001.
Indicators considered in the model but did not significantly contribute to explaining variance (p > 0.05) included: modern slavery statement page number, GRI checked, GRI compliance, supply chain modern slavery assessment, social supply chain management, human rights policy, policy against child labour and market capitalisation.

Table 6 indicates that GICS sector significantly affects a company's social pillar score. The classification of sector is commonly used as a screening tool for modern slavery from various reports, i.e., GSI, KMPG, MSCI, Bloomberg, Morningstar and Sustainalytics (Global Sustainable Investment Alliance, 2019; KPMG, 2019). To further break down the first hypothesis, company's social scores are categorised by GICS sector over time (see Figure 10).

The top 7 sectors at high risk of modern slavery in Australia is consumer discretionary (i.e. imports of apparel), consumer staples (i.e. imports of rice, fish, and cocoa), materials (i.e. mining), financials (i.e. supply chain investment insurance products), healthcare (i.e. manufacturing of surgical equipment and

medical supplies), industrials (i.e. cleaning services and electronics) and real estate (i.e. construction and property development) (KPMG, 2019; Walk Free Foundation, 2018).

Interestingly, Figure 10 indicates that consumer discretionary and financials, a high-risk sector for modern slavery had very little variation in social scores during the 2015 to 2020. Suggesting that the MSA had a limited effect on a company's social pillar score in these sectors. Communication services, consumer staples, industrials, information technology and utilities sector demonstrate a significant relation with a company's social pillar scores. Orthogonal contrast points are used to determine if there was any significance between each year.

Consumer services showed a strong significant increase on a company's social pillar score between 2018 and 2019 (p-value = 0.002). This increase could be attributed to when the MSA was passed in parliament on 10 December 2018. The consumer staples and industrials sector also showed a significant increase between 2016 and 2017 on a company's social pillar score (p-value = 0.05). Information technology social pillar scores had a significant increase between 2017 and 2018 (p-value = 0.05). Interestingly, the utilities sector had a significant increase across the whole period of 2015 to 2020. In summary, the three important dates of the MSA had a significant impact on a company's social pillar scores.

Surprisingly, across the 11 GICS sectors energy has the highest social pillar score (8.4). As energy was expected to have a low to mid score. According to the GICS sector classification, energy comprises of oil, gas & consumable fuels, and energy equipment & services. This unexpected inflation of high energy social pillar scores is due the energy industry being heavily regulated. In Australia, the oil and gas industry have to meet high health & safety standards and employee labour management (Boutilier & Black, 2013). These high social pillar scores are an example of what happens to an industry that is heavily regulated.

Out of the 11 sectors healthcare was the only sector that had a social score lower in 2020 than 2015. The healthcare sector had an increase from 2016 to 2018, with its highest score in 2018. Then in 2019 and 2020 the social pillar scores decreased. I find that the enforcement of the MSA had a negative impact on a company's social pillar score in the healthcare sector. This sector was the only sector to have a negative affect from the MSA between 2015 and 2020. Other possible factors that could have influenced this decline in a company's social pillar score between 2019 and 2020 could have been the increased production of medical supplies (Gereffi, 2020). As the country raced to create a COVID-19 vaccine. The major risk in the healthcare sector for modern slavery is within the manufacturing of surgical equipment and medical supplies. Further analysis can be done once more data become available.

Figure 10. Social Pillar Score of ASX200 Categorised by GICS Sector Over Time, 2015 – 2020 with Orthogonal Contrasts Testing for Trends
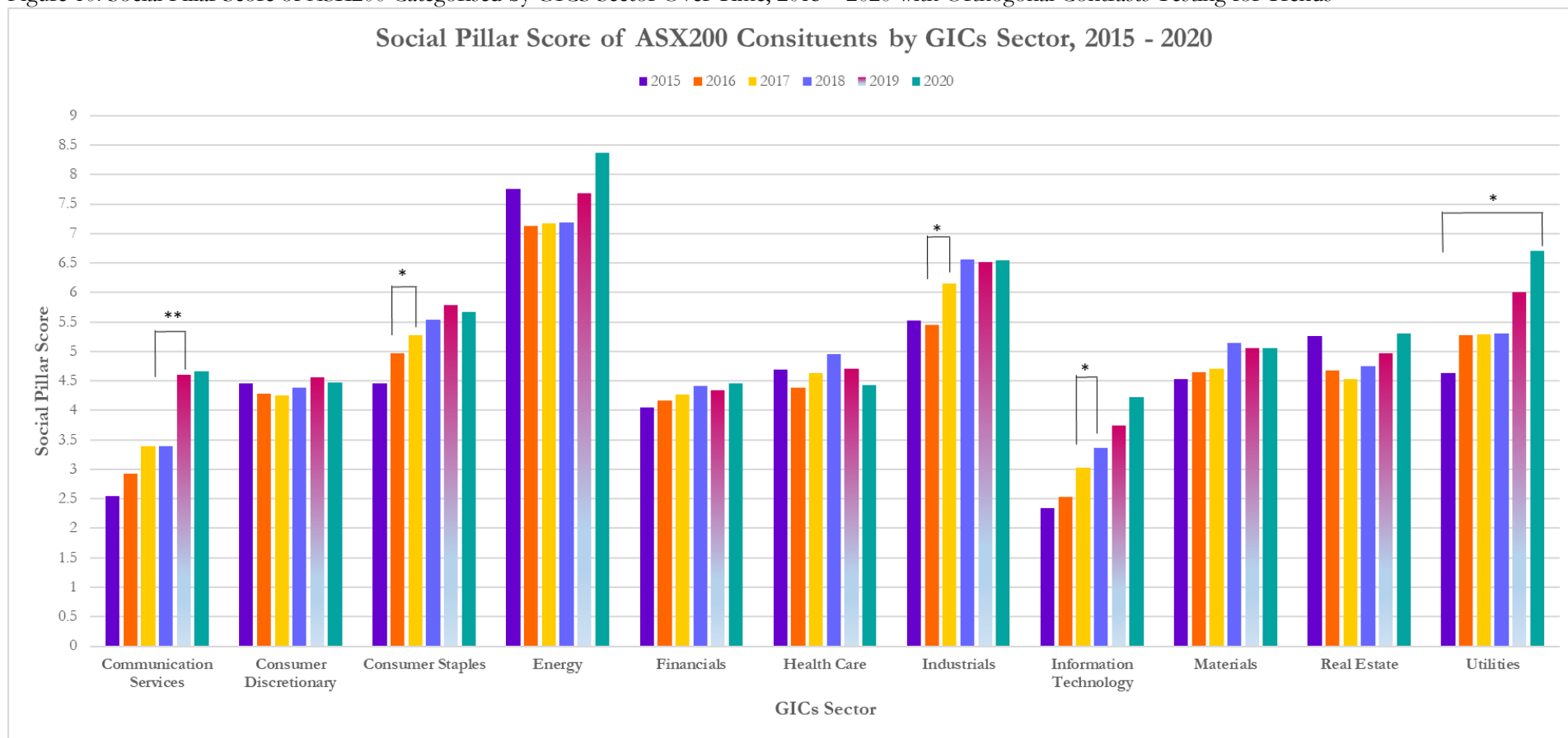
Notes, results were generated from Table 22 and 23 in section 7.9 Appendix 9.
* indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.

In summary, to answer the first hypothesis of if the MSA drives a company's social scores in the short-term? I find that the adoption of the MSA effects a company's social behaviour differently depending on each sector. There was a significant increase during the MSA introduction on the following sectors, communication services, consumer staples industrials, information technology, and utilities scores. These five sectors social scores increased in the short-term and are associated with the MSA. The most interesting finding is that consumer discretionary, a sector at high risk of modern slavery for the importation of apparel shows no variation of social scores from the adoption of the MSA.

5.2.2 MSCI Modern Slavery Scores Driving Factors

The human capital theme score closely relates to modern slavery with a focus on human capital development, health and safely, supply chain and labour standards. A GLM with repeated measures was performed robust to time is displayed in Table 7. The key significant variable in this model is market capitalisation (p-value <0.001). To address the second of if the regulation and use of existing global systematic metric ratings such as MSCI, in the short term, will prompt higher social scores without fully capturing modern slavery is represented in Table 7. The explanatory power of this regression was satisfactory with an adjusted R-squared 92.30%.

Table 7. Generalised Linear with Repeated Measures ANOVA Tests Within ASX200 Constituents, Human Capital Theme Score (2015-2020)

Variables	Type III Sum of Squares	df	Mean Square	F	p-value
Time	10.61	5	2.12	2.93	0.01
Time*Revenue (natural log) 2015	3.72	5	0.74	1.03	0.40
Time*Overseas Reporting Obligations	1.48	5	0.30	0.41	0.84
Time*Market Capitalisation (natural log) 2015	17.06	5	3.41	4.71	<0.001***
Time*GICS Sector	38.62	50	0.77	1.07	0.36
Error(Time)	409.09	565	0.72		

Notes, overseas reporting obligation was used as a control variable.
* indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.
Indicators considered in the model but did not significantly contribute to explaining variance (p > 0.05) included: modern slavery statement page number, GRI checked, GRI compliance, supply chain modern slavery assessment, social supply chain management, human rights policy and policy against child labour.

Table 7 indicates that market capitalisation, a proxy for a company's firm size has a significant association on a company's social pillar score. This demonstrates that the size of a company is an important aspect to include in the MSA. As larger companies tend to have long interconnected global supply chains and are at additional risk for modern slavery (Andersen & Skjoett-Larsen, 2009). The MSA is being reviewed by the Australian Parliament in December 2021 and should consider including market capitalisation of a company into the future MSA. From the literature, Vijeyarasa (2019) study on Australia's missed opportunity to set an example of good practice also suggested that the MSA reporting requirements should also be based on a company's market capitalisation.

To break down if there is a correlation between a company's market capitalisation and a company's human capital theme score over time orthogonal contrasts with significant linear and quadratic trends are analysed in Figure 11. There is a significant trend over time between 2015 and 2019. Aligning with the enforcement of the MSA the trend drops off in 2020, a year after the MSA entered into force. I find that there is a significant correlation between a company's market capitalisation and modern slavery score (human capital theme score) between 2015 and 2019 (p-value<0.05), during the adoption on the MSA. Interestingly, there is no significant correlation in 2020 (p-value = 0.49) which demonstrates the importance of market capitulation to be included in the next MSA.

Figure 11. Pearson Correlation Between Human Capital Theme Score and Market Capitalisation, 2015 – 2020
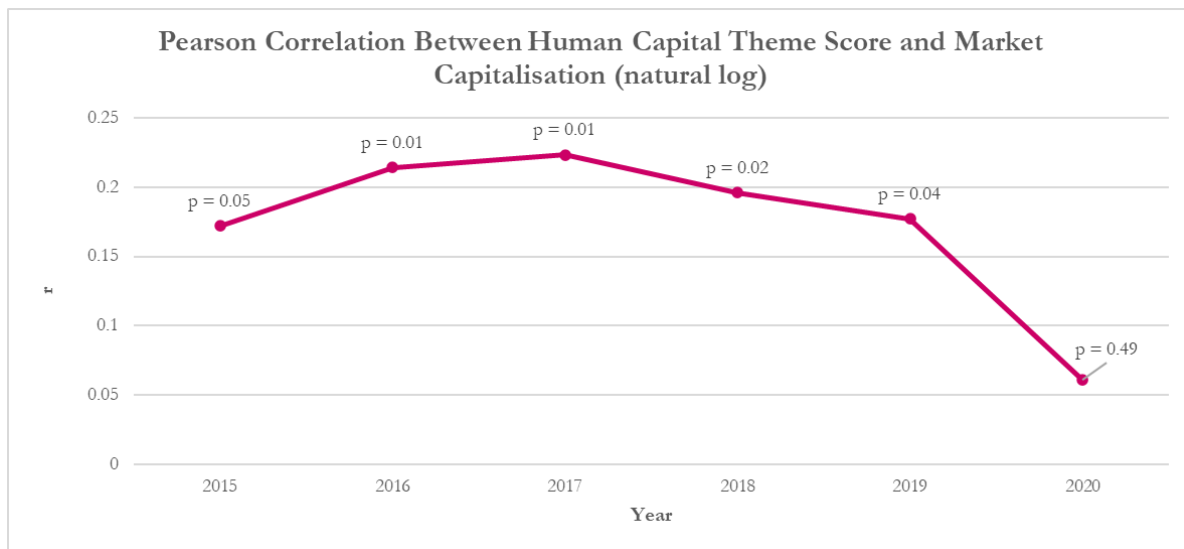
Notes, Orthogonal contrasts with significant linear trends (p = 0.02) and significant quadratic trends (p = 0.03) (see section 7.10 Appendix 10 from Table 24).

To isolate the effect of MSCI modern slavery factors the labour management is analysed. The labour management score closely relates to modern slavery with a focus on a company's supply chain management. A GLM with repeated measures is performed and robust to time outlined in Table 8. The key significant variable in this model is revenue (p-value = 0.02) and time (p-value = 0.05). To address the second hypothesis of if the implementation of increased regulation through the MSA will highlight a company's socially responsible sourcing behaviour is represented in Table 8. The explanatory power of this regression was satisfactory with an adjusted R-squared 94.7%.

Table 8. Generalised Linear with Repeated Measures ANOVA Tests Within ASX200 Constituents, Labour Management Score (2015-2020)

Variables	Type III Sum of Squares	df	Mean Square	F	p-value
Time	14.00	5	2.80	2.21	0.05*
Time*Revenue (natural log) 2015	17.91	5	3.58	2.82	0.02*
Time*Overseas Reporting Obligations	3.44	5	0.69	0.54	0.74
Time*Market Capitalisation (natural log) 2015	8.83	5	1.77	1.39	0.226
Time*GICS Sector	82.98	50	1.66	1.31	0.08
Error(Time)	717.27	565	1.27		

*Notes*, Overseas reporting obligation was used as a control variable.
* indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.
Indicators considered in the model but did not significantly contribute to explaining variance (p-value > 0.05) included: modern slavery statement page number, GRI checked, GRI compliance, supply chain modern slavery assessment, social supply chain management, human rights policy and policy against child labour.

Table 8 indicates that revenue has a significant effect on a company's labour management score (modern slavery supply chain score). This demonstrates that modern slavery risks around labour management is sensitive to a company's revenue and is an important factor to the MSA. Currently, the MSA only requires companies that have over 100 million AUD of consolidated annual revenue to report on modern slavery risks and exposures. This minimum threshold has been a controversial topic among global modern slavery legislation. Islam and Van Staden (2021) and Vijeyarasa (2019) both believe that the revenue threshold on reporting requirements should include medium sized companies and not only focus on larger companies. I find that revenue is significantly affects a company's labour management score and is associated with the MSA. Therefore, it is suggested that the annual revenue reporting requirement threshold be lowered from 100 million AUD to 10 million AUD to included small- to medium-sized[11] companies for the up-coming MSA review.

5.2.3 Did companies utilise the Modern Slavery Act's 3-year enforcement to increase their revenue?

Revenue is a vital aspect for companies to survive and has shown an important relation to the MSA. For instance, from the literature revenue growth is used as an indicator for modern slavery practices due to companies with higher revenue having longer interconnected global supply chains (Stringer & Michailova, 2018). Thus, being exposed to practices of modern slavery, such as, under paid workers in factories. To analyse the third hypothesis of that the announcement of the MSA encourages companies to utilise the opportunity to increase their revenue before legislation comes into force is represented in Figure 12 – 14.

Revenue is sorted into four quantiles to test whether if different levels of revenue affect a company's social pillar score. Figure 12 reveals that a company's social score overed time differs when

---

[11] The ATO defines a small business as having annual consolidated revenue of less than 10 million AUD (Australian Taxation Office, 2016).

revenue is in the lowest quartile (Q1). In contrast, there was little variation in social pillar scores over time when a company's revenue is medium to high (Q2 – 4). Thus, when a company's revenue is high their social pillar score has little variation over time, while when a company's revenue is lower their social pillar score differs over time. Demonstrating a fluctuation between a company's revenue and social pillar score. I find that when revenue is broken down into quintiles that there is an association between a company's revenue and social pillar score, highlighting the need not only to focus on larger revenue-based companies but also medium to small companies. Again, it is recommended that the future MSA include reporting requirements for companies with less than 100 million AUD as the results show a relation to lower revenue thresholds and social pillar scores.

Figure 12. Social Pillar Score by Revenue Quartiles, 2015 -2020
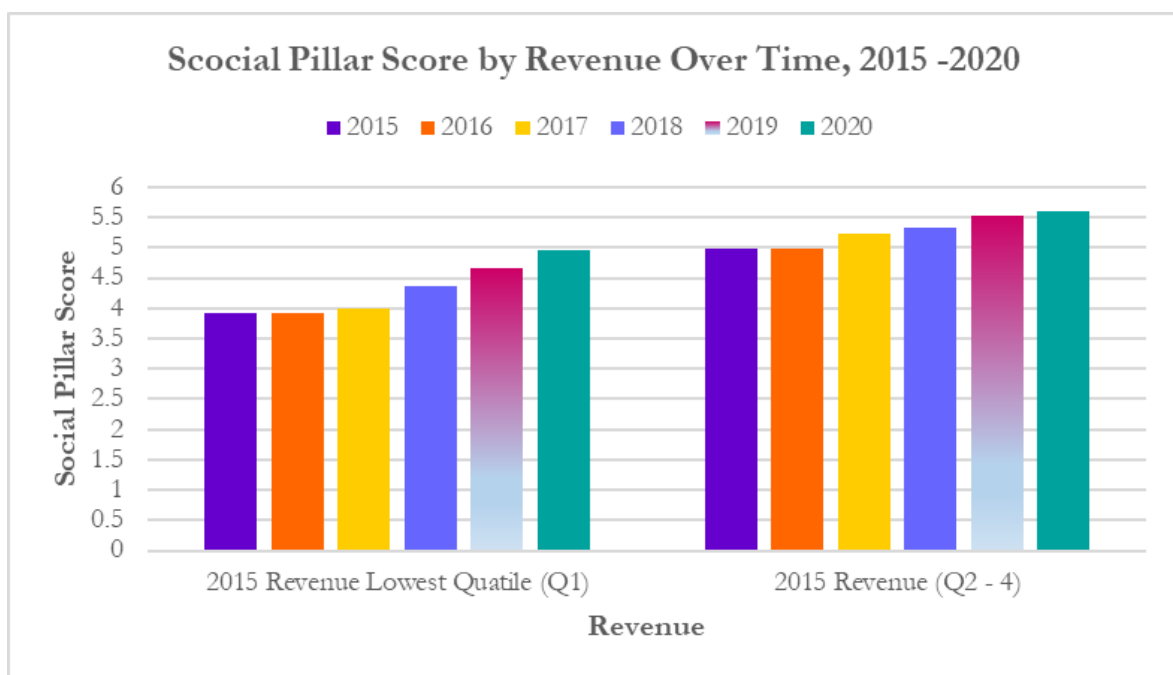
Notes, the natural logarithm of revenue is used.

To break down if there is a correlation between revenue and a company's social pillar score over time, orthogonal contrasts with significant linear trends are analysed in Figure 13. There is a significant trend over time between 2015 and 2018 (p-value<0.05). The relation starts to weaken in 2019 when the MSA entered into force. This demonstrates that there is a strong association between the effects of the MSA and a company's revenue.

Figure 13. Pearson Correlation Between Social Pillar Score and Revenue, 2015 – 2020
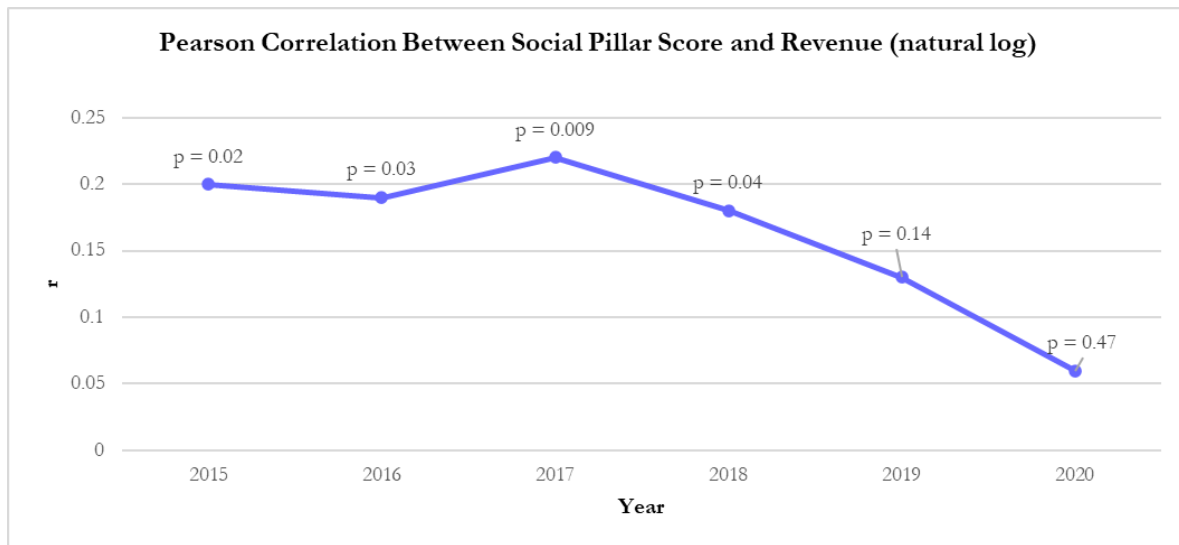
Note, orthogonal contrasts with significant linear trends (p=0.03) from Table 25 in section 7.11 Appendix 11. The natural logarithm of revenue is used.

To further access the correlation between revenue and a company's modern day slavery supply chain scores (labour management score) over time orthogonal contrasts with significant quadratic trends (p-value = 0.008) are analysed in Figure 14. Compared to a company's social pillar score the labour management score demonstrates a significant drop in 2016 and 2018. Interestingly, this drop reveals that the labour management score has a negative correlation with a company's revenue. This trend could be associated with the MSA's approval in 2018. Therefore, I find that when a company's revenue is high their labour management score is low and vice versa. In summary, the results suggest that there is a negative correlation between revenue and a company's labour management score. Indicating that a company was more focused on increasing their revenue between 2016 – 2018 than improving their labour management score.

Figure 14. Pearson Correlation Between Labour Management Score and Revenue, 2015 – 2020

Pearson Correlation Between Labour Management Score and Natural Log Revenue, 2015
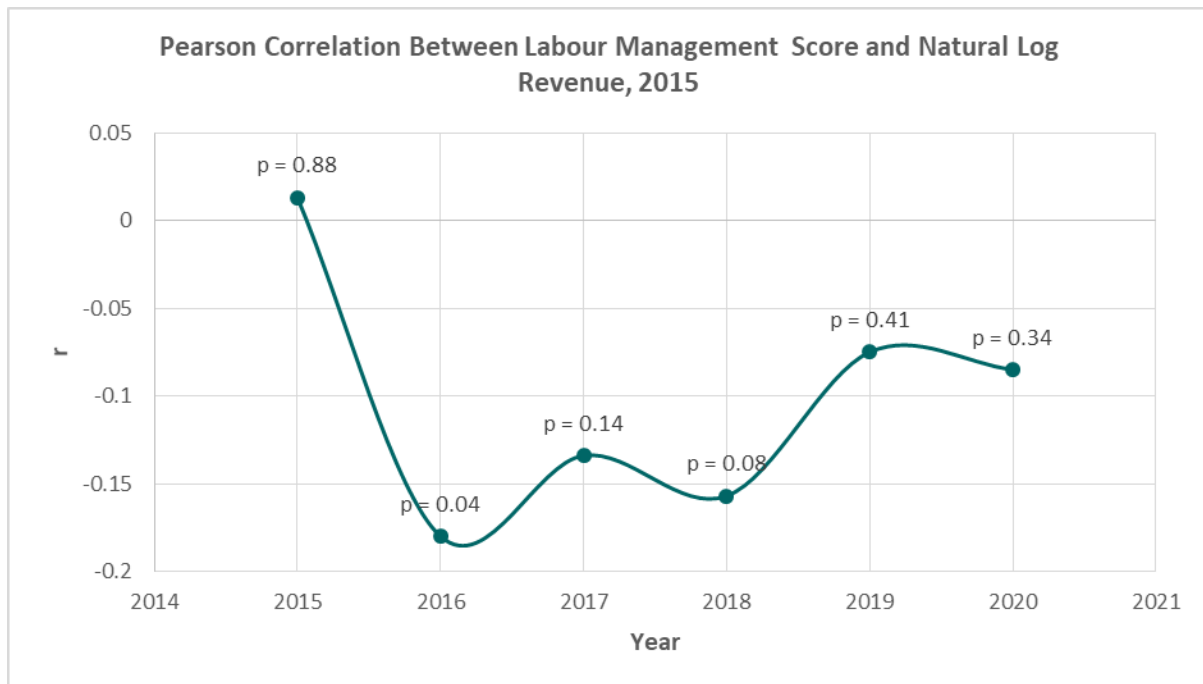
Notes, Orthogonal contrasts with significant quadratic trends (p = 0.008) (see section 7.12 Appendix 12 Table 26).

From the results it can be interpreted that a company's revenue can influence a company's social pillar and labour management score. Australian companies had knowledge of the MSA three years prior to the enforcement date (2017 to 2019). Since companies had this period to "clean up" any modern slavery supply risks, begs the question: *did they focus more on generating revenue than improving scores*? The social pillar score (a company's social responsibility) results represented in Figure 13 suggests there is a correlation between revenue and a company's social pillar score between 2015 and 2019. While after the MSA came into force the correlation weakened. While a company's labour management score (focusing on a company's supply chain management) had a negative correlation to revenue. Indicating a company was more focused on increasing revenue rather than their supply chain score since there was no legislation in place.

5.3   Other Findings

To further describe the behaviour of the ASX200 before, during and after the MSA the dependent variable of revenue is analysed. I preform a GLM with repeated measures is performed and robust to time and is outlined in Table 9. The key significant variable in this model is the company's child labour policy (p-value = 0.003), social supply chain management (p-value = 0.007), GRI checked (p-value <0.001) and time (p-value <0.001). The explanatory power of this regression was satisfactory with an adjusted R-squared 92.48%.

Table 9. Generalised Linear with Repeated Measures (2015-2020) ANOVA Tests Within ASX200 Constituents, Revenue

Variables	Type III Sum of Squares	df	Mean Square	F	p-value
Time	8.58	5	1.72	13.28	<0.001***
Time*Human Rights Policy	1.40	5	0.28	2.16	0.06
Time*Overseas Reporting Obligations	0.94	5	0.19	1.46	0.20
Time*Policy Against Child Labour	2.35	5	0.47	3.63	0.003**
Time* Social Supply Chain Managemnt	3.20	10	0.32	2.48	0.007*
Time*GRI Checked	8.96	10	0.90	6.94	<0.001***
Time*GICS Sector*Overseas Reporting Obligations	7.65	45	0.17	1.32	0.09
Time*GICS Sector	7.56	50	0.15	1.17	0.21
Error(Time)	67.81	525	0.13		

Notes, overseas reporting obligation was used as a control variable.
* indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.
Indicators considered in the model but did not significantly contribute to explaining variance (p-value > 0.05) included: market capitalisation.

Social company polices are an important compliance component towards creating good practice. The key moderating factors that influence the MSA is represented in Figure 15. I find that when running each of the models there is different interactions between the MSCI scores, the MSA, GICS sector, revenue, market capitalisation and social company policies. These interactions demonstrate a flow of how each variable interacted with each other (see Figure 15). The MSA interacts with MSCI scores, GICS sector, and social company policies. From the analysis the GICS sector, revenue and market capitalisation are associated with MSCI scores. While social company policies only influence a company's revenue. This demonstrates a flow of how each variable is influenced by the MSA and highlights the important of revenue is to combating modern slavery. I find causality found between the MSA, a company's MSCI scores through revenue. While social company policies do not directly influence MSCI scores but influences revenue and revenue influences MSCI scores. Revenue has become this is an interesting interaction term between the MSA, a social company polices, and MSCI scores.

Figure 15. Interaction terms of the Modern Slavery Act on moderating factors
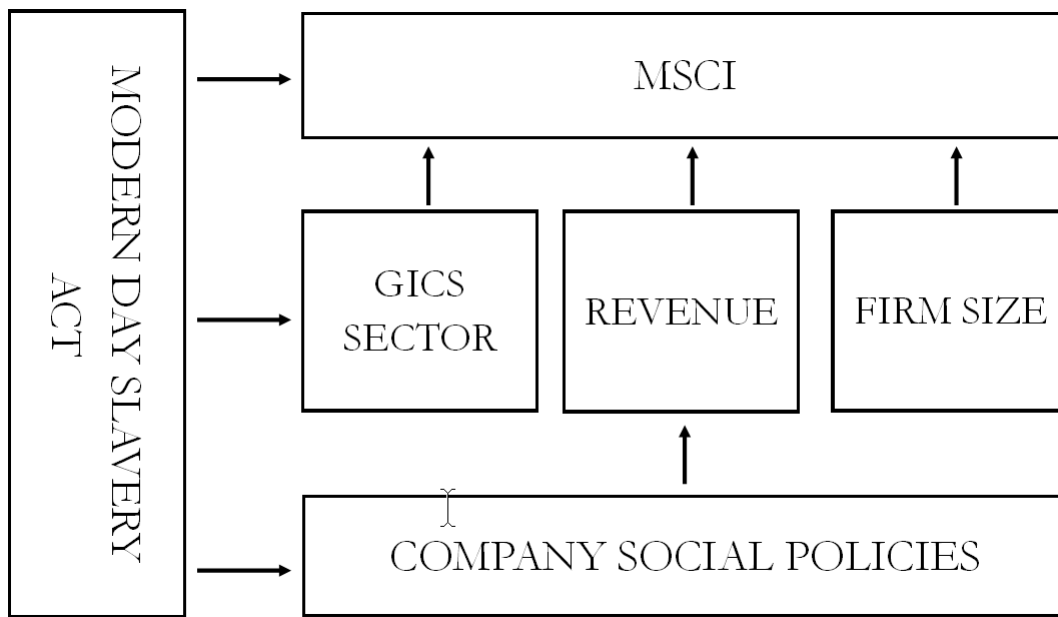
*Note*s, firm size is a proxy for market capitalisation.

5.3.1   New Modern Slavery Scorecard

The second largest Australian superfund, Aware Super uses a new metric to analyse modern slavery risks. A novel dataset from ISS ESG provided by Aware Super is tailored to screen for modern slavery risks on the ASX200 companies. The ISS modern slavery scorecard has only one reporting period for 2021. I will analyse this extremely new scorecard and compare to the long standing MSCI social scores to demonstrate the variation between ratings.

The ISS modern slavery scorecard ranges between 0 and 100, where 0 indicates poor company action to mitigate modern slavery and 100 indicates a company has implement serval measures towards mitigating modern slavery. The mean scores 2021 for each sector was taken and is represented in Figure 16. Similar to MSCI's methodology both measures indicate the higher the score the more action a company has taken to mitigate modern slavery. Figure 16. reveals that the ISS measure has higher scores across consumer services, healthcare, and materials sectors compared to MSCI. While ISS has given lower scores across consumer staples, energy, and utilities. This comparison is interesting and highlights the differences across ESG rating agencies. *Note*, this is a new metric for modern slavery and was released in 2021. Therefore, there is no definitive analysis to suggest one is better than the other.

Figure 16. Comparing MSCI Modern Slavery Scores to ISS Modern Slavery Scorecards, 2021
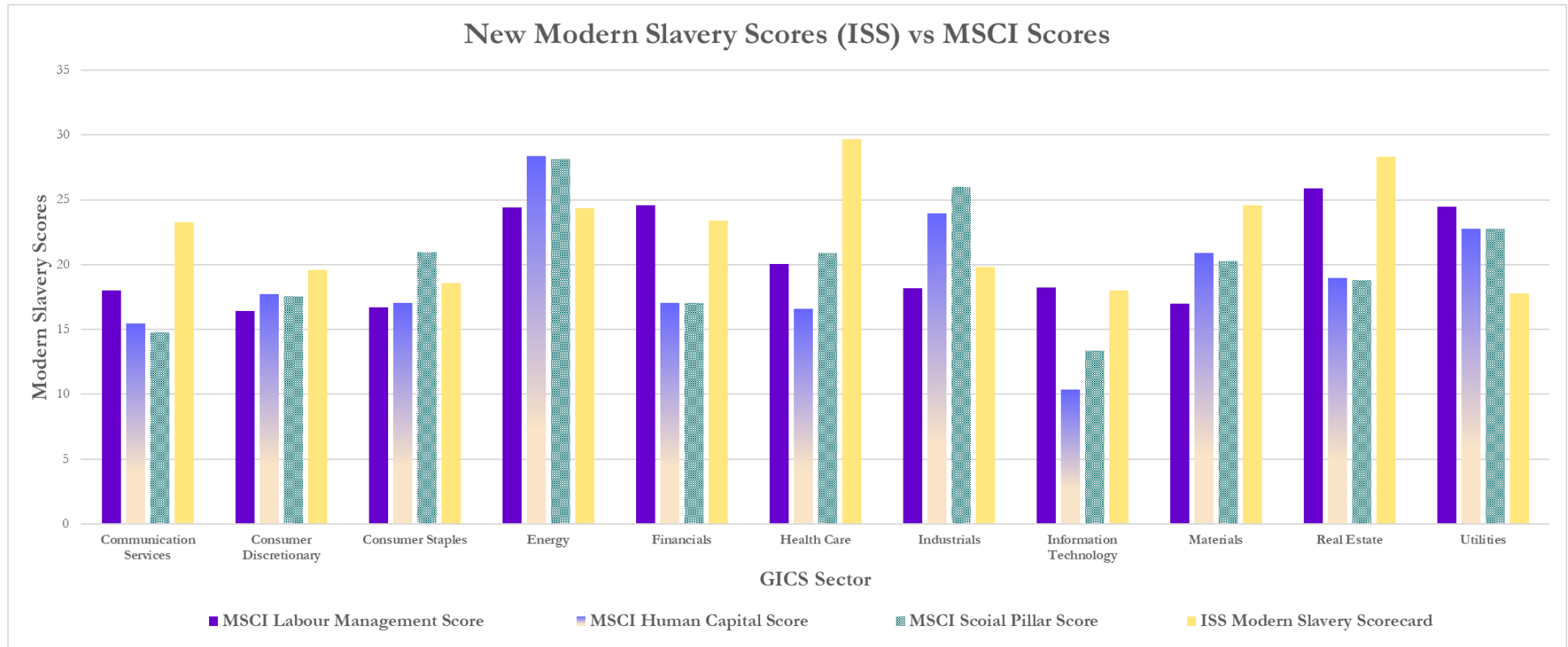
Notes, Social Pillar Score is MSCI 'S' component representing a company's social responsibility, Human Capital Theme Score is MSCI modern slavery score, Labour Management Score is MSCI, and ISS Modern Slavery Scorecard is a company's level of risk in relation to modern slavery.

To test the differences between the long standing MSCI scores and the new modern slavery metric, ISS, a Pearson correlation matrix is preformed to highlight the difference between providers is represented in Table 10. Interestingly, there is a low correlation between MSCI's social, human capital and labour management scores, and the ISS modern slavery scorecard. The low correlation demonstrates the variations across ESG rating metrics methodologies and highlights the need for ESG ratings to be standardised. Intriguingly, the modern slavery ISS scorecard is significantly correlated with revenue similar to MSCI's results. This highlights the importance revenue can play in screening for modern slavery.

Table 10. Pearson Correlation Matrix of MSCI Scores Compared to new ISS Modern Slavery Scorecard

Pearson Correlation Materix		(1)	(2)	(3)	(4)	(5)	(6)
ISS Modern Slavery Scorecard	(1)	1.00	0.41**	0.09	0.11	0.06	0.02
Revenue (natural log)	(2)	0.41**	1.00	-0.01	0.06	-0.08	0.30**
MSCI Social Pillar Score	(3)	0.09	-0.01	1.00	0.81**	.449**	0.20**
MSCI Human Capital Theme Score	(4)	0.11	0.06	0.81**	1.00	0.61**	0.22**
MSCI Labour Management Score	(5)	0.06	-0.08	0.45**	0.61**	1.00	-0.14
ISS Supply Chain Risk	(6)	0.02	0.30**	0.20**	0.22**	-0.14	1.00

Notes, ** correlation is significant at the 0.01 level (two-tailed).

In summary, this new measure of modern slavery from ISS is more risk based focused than MSCI scores. As time goes on more data will become available and future comparisons can be made with parsimonious models. But for now, a taste of new modern slavery metrics was analysed to highlight potential systematic methodological limitations MSCI has. In addition, revenue was both significantly correlated to MSCI scores and to the new modern slavery scorecard. This demonstrates that revenue is a key pillar to screening for modern slavery risks.

5.4   Robustness Checks

To support the validity of the empirical analysis using GLM robustness checks are performed. To verify the statistical significance between a company's social pillar score and GICS sector the model is run between-subject effects and without the subject of time. Table 11 shows that even without the subject of time the GICs sector still had a significant relation (p-value <0.001).

Table 11. Generalised Linear with Repeated Measures ANOVA Tests of Between-Subjects Effects, Social Pillar Score

Variables	Type III Sum of Squares	df	Mean Square	F	p-value
Intercept	81.94	1	81.94	6.96	0.01**
Revenue (natural log) 2015	10.76	1	10.76	0.91	0.34
Overseas Reporting Obligations	9.97	1	9.97	0.85	0.36
GICS Sector*Overseas Reporting Obligations	114.99	9	12.78	1.09	0.38
GICS Sector	431.91	10	43.19	3.67	<0.001***
Error	1306.21	111	11.77		

Notes, without the subject of time.
* indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.

The human capital theme score GLM was run without the variable of time for a robustness check (see Table 12). Without the subject of time a company's human capital theme score associated by sector was significant (p-vale = 0.002).

Table 12. Generalised Linear with Repeated Measures ANOVA Tests of Between-Subjects Effects, Human Capital Theme Score

Variables	Type III Sum of Squares	df	Mean Square	F	p-value
Intercept	4.90	1	4.90	0.25	0.61
Market Capitalisation (natural log) 2015	7.47	1	7.47	0.39	0.53
Revenue (natural log) 2015	40.38	1	40.38	2.10	0.15
Overseas Reporting Obligations	0.03	1	0.03	0.00	0.97
GICS Sector	594.37	10	59.44	3.09	0.002**
Error	2172.75	113	19.23		

Notes, without the subject of time.
* indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.

As a robustness check on the labour management score model was run between-subject effects and without the subject of time. Table 13 shows that without the subject of time the GICs sector has a significant relation (p-value = 0.003). Highlighting that GICS sector plays a major role on a company's social pillar, human capital theme and labour management score.

Table 13. Generalised Linear with Repeated Measures ANOVA Tests of Between-Subjects Effects, labour management score, Labour Management Score

Variables	Type III Sum of Squares	df	Mean Square	F	p-value
Intercept	87.34	1	87.34	4.95	0.03*
Revenue (natural log) 2015	11.91	1	11.91	0.67	0.41
Overseas Reporting Obligations	0.55	1	0.55	0.03	0.86
Market Capitalisation (natural log) 2015	0.73	1	0.73	0.04	0.84
GICS Sector	515.86	10	51.59	2.92	0.003**
Error	1995.36	113	17.66		

Notes, without the subject of time.
* indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.

The final robustness check on the revenue model was run between-subject effects and without the subject of time. Table 14 shows that without the subject of time the GICs sector, overseas reporting obligations, and policy against child labour has a significant relation. Highlighting that GICS sector plays a major role across all four dependent variables (social pillar, human capital theme, labour management score and revenue).

Table 14. Generalised Linear with Repeated Measures ANOVA Tests of Between-Subjects Effects, Revenue

Variables	Type III Sum of Squares	df	Mean Square	F	p-value
Intercept	38541.09	1	38541.09	5267.49	<0.001***
Human Rights Policy	0.81	1	0.81	0.11	0.74
Overseas Reporting Obligations	193.91	1	193.91	26.50	<0.001***
Policy Against Child Labour	48.26	1	48.26	6.60	0.01*
GRI Checked	15.40	2	7.70	1.05	0.35
Supply Chain Management	20.26	2	10.13	1.38	0.26
GICS Sector*Overseas Reporting Obligations	182.18	9	20.24	2.77	0.006**
GICS Sector	410.86	10	41.09	5.62	<0.001***
Error	768.26	105	7.32		

Notes, without the subject of time.
* indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001

5.5   Implications for Future Research

Future directions for work in this emerging field could examine the relations between the MSA and a company's social rating on other ESG rating platforms. For instance, Bloomberg, Refinitiv or Sustainalytics and compare MSCI's social ratings. Questioning, *will other ESG rating agencies have the same results*? This extension may be possible under longer time constraints and with new datasets. Furthermore, a longer collection period prior to 2015 and including a wider sample, such as, the ASX300 or Standards & Poor's (S&P) 500 would be interesting addition to the study.

With time and the effects of the MSA creating transparency more granular data will become available and will only strengthen future studies. An alternative methodology to analyse the effects of the MSA it would be worthwhile to include other countries with and without legislation. For example, conducting a cross-sectional study with the UK (with legislation) and New Zealand (without legislation). While using this study as a baseline for comparison.

6. Conclusion

Modern slavery has had a pernicious impact on society throughout history. Safeguarding human rights is a vital aspect for creating long-term company sustainability. While the majority of companies today have strong governance practices in place to protect human rights and child labour, it is challenging to capture modern slavery risks in supply chains. As companies supply chains grow, they are exposed to long interconnected global supply chains which creates a breeding environment for modern slavery to go undetected. Until recently, there was no legal requirements for Australian companies to address modern slavery risks in their supply chains and operations. The MSA entered into force on 1 January 2019, but companies had knowledge of the legislation since 2017, when the first media announcement was made. The MSA aims to create transparency, mitigate modern slavery, and create good company practice. There has been a limited body of literature examining the adoption of the MSA and how the MSA effected Australian companies. This thesis fills an important gap in the emerging literature of modern slavery, as I examine the effects of the adoption of the MSA on the ASX200 company's social responsibility behaviour and trends associated. I analysed important modern slavery moderating factors and MSCI social scores over time.

I find that the introduction of the MSA has had a significant impact on a company's social responsibility behaviour. Using a leading global ESG rating metric, MSCI and a novel modern slavery scorecard I study a growing shift towards company social trends. The study describes the trends and associations between the adoption of the MSA and the ASX200 companies social scores between 2015 – 2020. I find that a company's GICS sector, revenue, and market capitalisation had a significant association between a company's social pillar score (social responsibility score), labour management score (modern slavery supply chain management score) and human capital score (modern slavery score). Furthermore, the ASX200 MSCI scores were sensitive to the first media announcement of the MSA in 2017, when the MSA was passed in 2018 and the enforcement of the MSA in 2019. A company's labour management score (closely related to supply chain management) showed a negative relation with a company's revenue. Suggesting that when a company has high revenue their labour management score is low. Indicating that companies utilised the MSA's three-year enforcement period to focus on generating revenue.

This paper is the first to examine a company's social behaviour before, during and after the implementation of the MSA. I contribute directly to the ESG and modern slavery literature, as the determinates of potential modern slavery risk were examined. Further, this is useful for policy makers in countries considering the introduction of modern slavery legislation and may inform the broader discussion around supply chain transparency. The findings of this thesis can significantly contribute to the MSA revision in December 2021. Predominately, highlighting how important revenue and market capitalisation reacted to the adoption of the MSA (2017– 2019). It is suggested that the annual revenue reporting requirement threshold be lowered from 100 million AUD to 10 million AUD to included small- to medium-sized companies. In addition, is also suggested that the MSA create different reporting requirements based on each sectors level of modern slavery risk.

Future research can investigate other ESG ratings agencies social scores and compare the introduction of the MSA's company's social behaviour. Furthermore, a cross-sectional analysis on countries with and without modern slavery legislation can be compared to Australia. With society's transformation shift towards the need for transparency around a company's interconnected supply chains hopefully data will become more readily available.

Ultimately, even though the consensus of academics believe that the MSA was a missed opportunity for Australia to create good company practice, I believe it is a step in the right direction. Since the announcement of the MSA in 2017 we can see, companies are starting to think about how their business can mitigate modern slavery and are taking action to transform their social behaviour. Hopefully, more provisions will be added to the revision of the MSA and companies will start to view modern slavery not just as a compliance checkbox but a vital element towards long-term sustainability. On that note, I leave the reader with the notion that "*the time is always right to do what is right*" (Martin Luther King Jr., 1964).

7. Appendix

7.1 Appendix 1. Snowballing Method

Figure 17. Snowballing Procedure Used in the Literature Review

```
┌──────────────────────┐   ┌─────────────────────────────┬─────────────────────────────┐
│  Start literature    │   │          Backward:          │          Forward:           │
│       search         │   │ Iterate:                    │ 1.  Analyse titles in title │
│                      │   │ 1.  Analyse titles in ref-  │     of the paper citing     │
└──────────────────────┘   │     erence list             │ 2.  Examine the ab-         │
           │               │ 2.  How many times          │     stract of the paper     │
           ▼               │     has that paper been     │     citing                  │
┌──────────────────────┐   │     cited                   │ End iterate                 │
│ Identify a tentative │   │ End iterate                 │ 3.  Place of the citation   │
│ start set of papers  │   │ 3.  Extract abstracts of    │     in the paper            │
│ and evaluate the pa- │   │     the papers reference    │ 4.  Full paper citing's     │
│ pers for inclusions  ├──►│     list                    │                             │
│ and exclusions. In-  │   │ 4.  Make any connects       │                             │
│ cluded papers enter  │   │     related to the pa-      │                             │
│ the snowballing      │   │     pers reference list     │                             │
│ method               │   └─────────────────────────────┴─────────────────────────────┘
└──────────────────────┘   ┌───────────────────────────────────────────────────────────┐
                           │ In each step in both backward and forward snowball-       │
                           │ ing, possible exclusions can be made                      │
                           └───────────────────────────────────────────────────────────┘
┌──────────────────────┐   ┌───────────────────────────────────────────────────────────┐
│ If no new papers     │   │ Final inclusions of the paper should be done based        │
│ are found then the   │◄──┤ on the full paper, i.e. before the paper can be included  │
│ snowballing meth-    │   │ in the new set of papers that goes into the snowball-      │
│ od is finished       │   │ ing method                                                │
└──────────────────────┘   └───────────────────────────────────────────────────────────┘
```

Iterate until no new papers are found

7.2 Appendix 2. List of Companies included and Excluded in the Study

Table 15. Sample Section of ASX200 Constituents included in the Study

Company		
ABACUS PROPERTY GROUP	DOMINO'S PIZZA ENTERPRISES LTD	PERPETUAL LIMITED
ADBRI LIMITED	DOWNER EDI LIMITED	PLATINUM ASSET MANAGEMENT LTD
AGL ENERGY LIMITED	EVOLUTION MINING LIMITED	PREMIER INVESTMENTS LIMITED
ALS LIMITED	FISHER & PAYKEL HEALTHCARE CORPORATION LIMITED	QANTAS AIRWAYS LIMITED
ALTIUM LTD	FLETCHER BUILDING LIMITED	QBE INSURANCE GROUP LIMITED
ALUMINA LIMITED	FLIGHT CENTRE TRAVEL GROUP LIMITED	RAMSAY HEALTH CARE LIMITED
AMCOR LTD	FORTESCUE METALS GROUP LTD	REA GROUP LTD
AMP LIMITED	G.U.D. HOLDINGS LIMITED	REGIS RESOURCES LIMITED
ANSELL LIMITED	G8 EDUCATION LIMITED	RESMED INC
APA GROUP	GOODMAN GROUP	RIO TINTO LIMITED
ARB CORP LTD	GRAINCORP LIMITED	SANDFIRE RESOURCES LIMITED
ARISTOCRAT LEISURE LIMITED	GROWTHPOINT PROPERTIES AUSTRALIA LIMITED	SANTOS LIMITED
ASX LIMITED	GWA GROUP LIMITED	SCENTRE GROUP
AUCKLAND INTERNATIONAL AIRPORT LIMITED	HARVEY NORMAN HOLDINGS LTD	SEEK LIMITED
AURIZON HOLDINGS LIMITED	IGO LIMITED	SEVEN GROUP HOLDINGS LIMITED
AUSNET SERVICES LTD	ILUKA RESOURCES LIMITED	SHOPPING CENTRES AUSTRALASIA PROPERTY GROUP RE LIMITED
AUSTAL LIMITED	INCITEC PIVOT LIMITED	SKYCITY ENTERTAINMENT GROUP LIMITED
AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED	INSURANCE AUSTRALIA GROUP LIMITED	SONIC HEALTHCARE LIMITED
BANK OF QUEENSLAND LIMITED	INVOCARE LIMITED	SOUTH32 LIMITED
BEACH ENERGY LIMITED	IOOF HOLDINGS LTD	SPARK INFRASTRUCTURE GROUP
BEGA CHEESE LIMITED	IPH LTD	SPARK NEW ZEALAND LIMITED
BENDIGO AND ADELAIDE BANK LIMITED	IRESS LIMITED	STEADFAST GROUP LTD
BHP GROUP LIMITED	JAMES HARDIE INDUSTRIES PUBLIC LIMITED COMPANY	STOCKLAND CORPORATION LTD
BLUESCOPE STEEL LIMITED	JB HI-FI LIMITED	SUNCORP GROUP LIMITED
BORAL LIMITED	LENDLEASE GROUP	SUPER RETAIL GROUP LIMITED
BRAMBLES LIMITED	MACQUARIE GROUP LIMITED	SYDNEY AIRPORT HOLDINGS LIMITED
BREVILLE GROUP LTD	MAGELLAN FINANCIAL GROUP LTD	TABCORP HOLDINGS LIMITED
BWP TRUST	MEDIBANK PRIVATE LIMITED	TASSAL GROUP LIMITED
CARSALES.COM LIMITED	MESOBLAST LTD	TECHNOLOGYONE LTD
CHALLENGER LIMITED	METCASH LIMITED	TELSTRA CORPORATION LIMITED
CHARTER HALL GROUP	MINERAL RESOURCES LIMITED	THE GPT GROUP
CHARTER HALL RETAIL REIT	MIRVAC GROUP	THE STAR ENTERTAINMENT GROUP LIMITED
CHORUS LIMITED	MONADELPHOUS GROUP LIMITED	TPG TELECOM LIMITED
CIMIC GROUP LIMITED	NATIONAL AUSTRALIA BANK LIMITED	TRANSURBAN GROUP
COCA-COLA AMATIL LIMITED	NEWCREST MINING LIMITED	TREASURY WINE ESTATES LIMITED
COCHLEAR LIMITED	NEWS CORPORATION	VICINITY CENTRES
COMMONWEALTH BANK OF AUSTRALIA	NEXTDC LIMITED	VIRGIN MONEY HOLDINGS (UK) PLC
COMPUTERSHARE LIMITED	NINE ENTERTAINMENT CO. HOLDINGS LIMITED	VOCUS GROUP LIMITED
CORPORATE TRAVEL MANAGEMENT LTD	NORTHERN STAR RESOURCES LTD	WESFARMERS LIMITED
CREDIT CORP GROUP LIMITED	NUFARM LIMITED	WESTPAC BANKING CORPORATION
CROMWELL PROPERTY GROUP	OIL SEARCH LIMITED	WHITEHAVEN COAL LIMITED
CROWN RESORTS LIMITED	ORICA LIMITED	WOODSIDE PETROLEUM LTD
CSL LIMITED	ORIGIN ENERGY LIMITED	WOOLWORTHS GROUP LIMITED
CSR LIMITED	ORORA LIMITED	WORLEY LIMITED
DEXUS	OZ MINERALS LIMITED	
Total		**134**

Table 16. List of ASX200 Constituents Excluded from the Sample

Company	
A2 MILK COMPANY LTD	NANOSONICS LTD
AFTERPAY LIMITED	NATIONAL STORAGE REIT
AMPOL LIMITED	NEARMAP LTD
APPEN LIMITED	NETWEALTH GROUP LTD
ATLAS ARTERIA GROUP	NIB HOLDINGS LTD
AUB GROUP LIMITED	NRW HOLDINGS LIMITED
BAPCOR LIMITED	OMNI BRIDGEWAY LIMITED
BINGO INDUSTRIES LIMITED	PENDAL GROUP LTD
BLACKMORES LIMITED	PERENTI GLOBAL LIMITED
BRAVURA SOLUTIONS LTD	PERSEUS MINING LIMITED
BRICKWORKS LTD	POLYNOVO LTD
CENTURIA INDUSTRIAL REIT	PRO MEDICUS LTD
CHARTER HALL LONG WALE REIT	QUBE HOLDINGS LIMITED
CLEANAWAY WASTE MANAGEMENT LIMITED	RAMELIUS RESOURCES LIMITED
CLINUVEL PHARMACEUTICALS LTD	REECE LIMITED
COLES GROUP LIMITED	RELIANCE WORLDWIDE CORPORATION LTD
COLLINS FOODS LIMITED	RESOLUTE MINING LIMITED
COSTA GROUP HOLDINGS LTD	SARACEN MINERAL HOLDINGS LIMITED
DETERRA ROYALTIES LIMITED	SERVICE STREAM LIMITED
DOMAIN HOLDINGS AUSTRALIA LIMITED	SILVER LAKE RESOURCES LIMITED
EAGERS AUTOMOTIVE LIMITED	SIMS METAL MANAGEMENT LIMITED
ELDERS LIMITED	SMARTGROUP CORPORATION LTD
EML PAYMENTS LIMITED	ST BARBARA LIMITED
GOLD ROAD RESOURCES LIMITED	UNITED MALT GROUP LTD
HEALIUS LIMITED	VIVA ENERGY GROUP LIMITED
IDP EDUCATION LIMITED	WASHINGTON H. SOUL PATTINSON AND COMPANY LIMITED
INGENIA COMMUNITIES GROUP	WAYPOINT REIT LIMITED
INGHAMS GROUP LIMITED	WEBJET LIMITED
KOGAN.COM LTD	WESTGOLD RESOURCES LIMITED
LINK ADMINISTRATION HOLDINGS LIMITED	WISETECH GLOBAL LTD
LYNAS CORPORATION LIMITED	XERO LIMITED
MEGAPORT LTD	ZIP CO LIMITED
Total	**64**

Table 17. List of ASX200 Constituents with no MSCI Data and was Excluded from the Sample

Company	
UNITED MALT GROUP LTD	
JANUS HENDERSON GROUP PLC	
Total	**2**

7.3 Appendix 3. Variable Descriptions and Data Sources

Table 18. Variable Descriptions

Variable	Data Source	Discription
Social Pillar Score	MSCI	The Social Pillar Score measures index constituents' management of and exposure to key social risks and opportunities. Scores range from 10 (best) to 0 (worst).
Human Capital Theme Score	MSCI	This issue evaluates companies' ability to attract, retain and develop human capital. Scores are based on reliance on highly skilled or highly trained workers and exposure to recent restructuring events; strategy and programs related to employee engagement, training and development and benefits; employee turnover trend and vs. peers; and workplace controversies. Scores range from 10 (best) to 0 (worst).
Revenue	Refinitiv	A company's revenue is represented by a firm's gross operating activities less any sales adjustments such as, discounts, returns and allowances.
Labour Management Score	MSCI	This issue evaluates the extent to which companies may face workflow disruptions due to labour unrest or reduced productivity due to poor job satisfaction. Scores are based on exposure to regions facing labour unrest, size of workforce, and corporate restructuring/layoffs; workforce policies, benefits, training, and employee engagement; and labour-related controversies. Scores range from 10 (best) to 0 (worst).
Firm Size	Refinitiv	Market Capitalisation is used as a proxy for firm size.
Modern Slavery Statement	Modern Slavery Regerisrty	The statements consist of a company's risks of modern slavery, how they plan to mitigate modern slavery and what actions can be taken.
GICS Sector	MSCI	The GICS sector is an industry leading company used widely by industry and academics to classify companies into 11 sectors.
Time	MSCI	Between 2015 and 2020.
Modern Slavery Scorecard	ISS	The scorecard measures a company's risk of modern slavery. Scores range between 0 (worst) - 100 (best).
Social Company Policies	Bloomberg	Six social complience company policies including: GRI, human rights, child labour, supply chain management and assesment.

7.4 Appendix 4. Revenue Transformation

Figure 18. Natural Log Transformation of Revenue
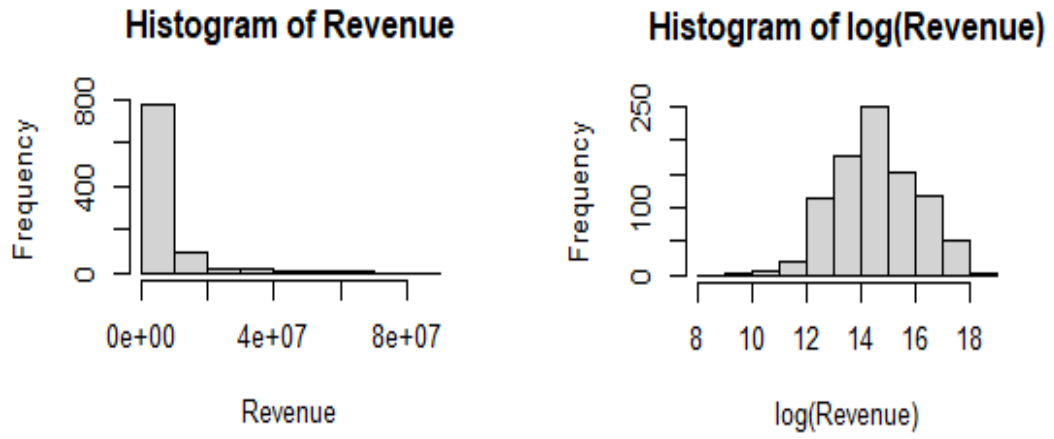
## 7.5 Appendix 5. Definitions of GICS Sector

Table 19. GICS Sector Definitions

GICS Sector	Defintition
Communication Services	The Communication Services Sector includes companies that facilitate communication and offer related content and information through various mediums. It includes telecom and media & entertainment companies including producers of interactive gaming products and companies engaged in content and information creation or distribution through proprietary platforms.
Consumer Discretionary	The Consumer Discretionary Sector encompasses those businesses that tend to be the most sensitive to economic cycles. Its manufacturing segment includes automotive, household durable goods, leisure equipment and textiles & apparel. The services segment includes hotels, restaurants and other leisure facilities, media production and services, and consumer retailing and services.
Consumer Staples	The Consumer Staples Sector comprises companies whose businesses are less sensitive to economic cycles. It includes manufacturers and distributors of food, beverages and tobacco and producers of non-durable household goods and personal products. It also includes food & drug retailing companies as well as hypermarkets and consumer super centers.
Energy	The Energy Sector comprises companies engaged in exploration & production, refining & marketing, and storage & transportation of oil & gas and coal & consumable fuels. It also includes companies that offer oil & gas equipment and services.
Financials	The Financials Sector contains companies involved in banking, thrifts & mortgage finance, specialized finance, consumer finance, asset management and custody banks, investment banking and brokerage and insurance. It also includes Financial Exchanges & Data and Mortgage REITs.
Health Care	The Health Care Sector includes health care providers & services, companies that manufacture and distribute health care equipment & supplies, and health care technology companies. It also includes companies involved in the research, development, production and marketing of pharmaceuticals and biotechnology products.
Industrials	The Industrials Sector includes manufacturers and distributors of capital goods such as aerospace & defense, building products, electrical equipment and machinery and companies that offer construction & engineering services. It also includes providers of commercial & professional services including printing, environmental and facilities services, office services & supplies, security & alarm services, human resource & employment services, research & consulting services. It also includes companies that provide transportation services.
Information Technology	The Information Technology Sector comprises companies that offer software and information technology services, manufacturers and distributors of technology hardware & equipment such as communications equipment, cellular phones, computers & peripherals, electronic equipment and related instruments, and semiconductors.
Materials	The Materials Sector includes companies that manufacture chemicals, construction materials, glass, paper, forest products and related packaging products, and metals, minerals and mining companies, including producers of steel.
Real Estate	The Real Estate Sector contains companies engaged in real estate development and operation. It also includes companies offering real estate related services and Equity Real Estate Investment Trusts (REITs).
Utilities	The Utilities Sector comprises utility companies such as electric, gas and water utilities. It also includes independent power producers & energy traders and companies that engage in generation and distribution of electricity using renewable sources.

Notes, Definitions are retrieved from GICS methodology (GICS, 2020).

7.6 Appendix 6. Market Capitalisation Transformation

Figure 19. Market Capitalisation Natural Log Transformation
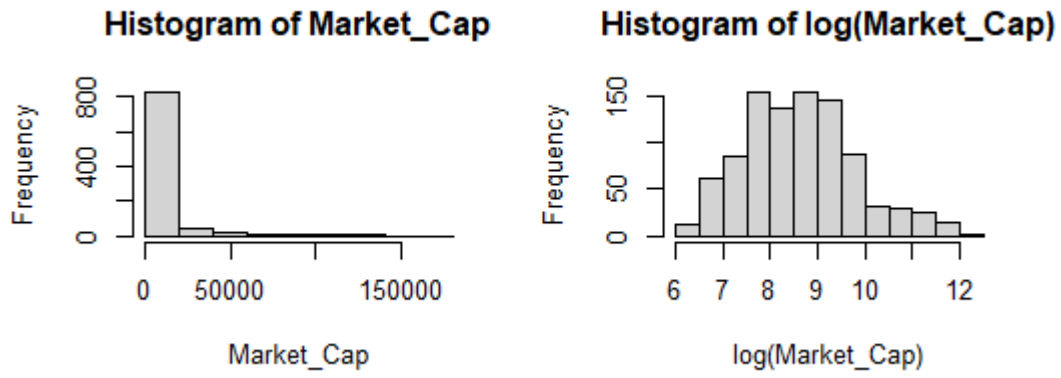
7.7 Appendix 7. Revenue Correlation Matrix

Table 20. Pearson's Correlation Matrix of Revenue

Correlation Matrix of Revenue		(1)	(2)	(3)	(4)	(5)	(6)
Revenue (natural log) 2015	**(1)**	1					
Revenue (natural log) 2016	**(2)**	0.94	1				
Revenue (natural log) 2017	**(3)**	0.86	0.87	1			
Revenue (natural log) 2018	**(4)**	0.98	0.89	0.79	1		
Revenue (natural log) 2019	**(5)**	0.97	0.89	0.74	0.87	1	
Revenue (natural log) 2020	**(6)**	0.83	0.93	0.79	0.87	0.80	1

Notes: Since Revenue is highly correlated with each other 2015 was selected for the model.

7.8 Appendix 8. Labour Management Score Missing Values OLS Regression

The labour management score variable had missing values of 26.2% (211/804), therefore, they could not be replaced with zero, as the missing value percentage is above 20%. Due to MSCI's systematic methodology the labour management score is weighted from the social pillar and human capital theme score[12]. As a result, an OLS regression model was used to fill the missing values. Table 15 outline the coefficients used in Equation (10).

$$Labour\ Management_{i,t} = -0.354(Social_{i,t}) + 0.687(HumanCap_{i,t}) + 3.482 \tag{10}$$

where i and t, denote company and time, respectively. $Social$ and $HumanCap$ refers the MSCI social pillar score and human capital theme score.

Table 21. OLS Regression Model to Predict Labour Management Score

	ß	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Chi-Square	df	p-value
(Intercept)	3.482	0.27	2.95	4.01	166.56	1	<0.001
Social Pillar Score	-0.354	0.09	-0.53	-0.18	15.87	1	<0.001
Human Capital Theme Score	0.687	0.08	0.54	0.84	82.73	1	<0.001

Notes, Dependent Variable: Labour Management Score.
Model: (Intercept), Social Pillar Score, Human Capital Theme Score.

---

[12] The social pillar score distribution is obtained by preformatting the following calculation for each range 'k' of social pillar scores:

$$\sum_{i=1}^{n}(Weight_i \times SOCIAL\ PILLAR\ WEIGHT_I \times Social\ Pillar\ Factor_{i,k}),$$

$$\sum_{i=1}^{n}(Weight_i \times SOCIAL\ PILLAR\ WEIGHT_i),$$

where:
- i = index security with social pillar score
- k = ranges of social pillar scores
- $Weight_i$ = closing index weight for security i

Source: (MSCI, 2020).

7.9 Appendix 9. Social Pillar Score Generalised Linear Models

F-tests for social pillar score by GICS sector are outlined in Table 16.

Table 22. Within Subject F-tests for Time by GICS Sector Against Social Pillar Score

GICS Sector	F (df), p-value
Communication Services	$F = 12.57$ (df 5, 40), $p(<0.001)$*
Consumer Discretionary	$F = 0.26$ (df 5,80), $p(0.52)$
Consumer Staples	$F = 6.78$ (df 5, 25), $p(<0.001)$*
Energy	$F = 1.39$ (df 5, 25), $p(0.40)$
Financials	$F = 0.95$ (df 5, 95), p (0.40)
Health Care	$F = 0.34$ (df 5, 30), $p(0.88)$
Industrials	$F = 5.37$ (df 5, 60), $p(<0.001)$*
Information Technology	$F = 14.09$ (df 5, 15), $p(<0.001)$*
Materials	$F = 2.12$ (df 5,115), $p(0.07)$
Real Estate	$F = 1.86$ (df 5, 65) $p(0.11)$
Utilities	$F = 3.19$ (5, 15) $p(0.04)$*

Notes, * indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.

The significant sectors outlined in Table 16 were further analysed. Orthogonal repeated contrast examined over time to view any significant increases are represented in Table 17.

Table 23. Orthogonal Repeated Contrasts over time by GICS Sector for Social Pillar Scores[13]

Communication Services		
Year	F	p-value
2015 vs 2016	2.77	0.13
2016 vs 2017	7.33	0.03
2017 vs 2018	0.07	0.80
2018 vs 2019	19.44	0.002**
2019 vs 2020	0.00	0.98
Consumer Staples		
Year	F	p-value
2015 vs 2016	2.05	0.21
2016 vs 2017	6.28	0.05*
2017 vs 2018	3.15	0.14
2018 vs 2019	2.25	0.19
2019 vs 2020	0.75	0.42
Industrials		
Year	F	p-value
2015 vs 2016	2.05	0.21
2016 vs 2017	6.28	0.05*
2017 vs 2018	3.15	0.14
2018 vs 2019	2.25	0.19
2019 vs 2020	0.75	0.42
Inforamtion Technology		
Year	F	p-value
2015 vs 2016	7.66	0.07
2016 vs 2017	3.00	0.18
2017 vs 2018	3.22	0.17
2018 vs 2019	23.86	0.02*
2019 vs 2020	11.11	0.04
Utilities		
Year	F	p-value
2015 vs 2016	0.50	0.53
2016 vs 2017	0.00	0.96
2017 vs 2018	0.00	0.99
2018 vs 2019	7.26	0.07
2019 vs 2020	4.56	0.12

Notes, * indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.

---

[13] contrasts shown are those that had significant within subject F-tests from Table 16.

7.10 Appendix 10. Human Capital Theme Score Correlation Trends

Table 24 outlines the significant trends of the GLM for the human capital theme score.

Table 24. Orthogonal Contrasts Tests of Within-Subjects Contrasts, Human Capital Theme Score

Variables	Type III Sum of Squares	df	Mean Square	F	p-value
Time					
Linear	9.29	1	9.29	4.03	0.05*
Quadratic	0.05	1	0.05	0.07	0.79
Cubic	1.13	1	1.13	3.13	0.08
Order 4	0.14	1	0.14	0.86	0.36
Order 5	0.00	1	0.00	0.01	0.92
Time*Revenue (natural log) 2015					
Linear	0.37	1	0.37	0.16	0.69
Quadratic	1.22	1	1.22	1.87	0.17
Cubic	1.18	1	1.18	3.27	0.07
Order 4	0.76	1	0.76	4.54	0.04*
Order 5	0.19	1	0.19	1.37	0.24
Time*Overseas Reporting Obligations					
Linear	0.07	1	0.07	0.03	0.86
Quadratic	0.02	1	0.02	0.04	0.85
Cubic	1.23	1	1.23	3.41	0.07
Order 4	0.02	1	0.02	0.12	0.73
Order 5	0.13	1	0.13	0.97	0.33
Time*Market Capitalisation (natural log) 2015					
Linear	12.94	1	12.94	5.61	0.02*
Quadratic	3.19	1	3.19	4.91	0.03*
Cubic	0.04	1	0.04	0.11	0.74
Order 4	0.58	1	0.58	3.43	0.07
Order 5	0.31	1	0.31	2.23	0.14
Time*GICS Sector					
Linear	23.55	10	2.36	1.02	0.43
Quadratic	5.06	10	0.51	0.78	0.65
Cubic	6.31	10	0.63	1.75	0.08
Order 4	2.57	10	0.26	1.53	0.14
Order 5	1.14	10	0.11	0.83	0.60
Error(Time)					
Linear	260.52	113	2.31		
Quadratic	73.45	113	0.65		
Cubic	40.65	113	0.36		
Order 4	18.96	113	0.17		
Order 5	15.50	113	0.14		

Notes, * indicates significance with a p-value <0.05, a p-value <0.01, *** p-value <0.001.

7.11   Appendix 11. Social Pillar Score Correlation Trends

Table 25. Orthogonal Contrasts Tests of Within-Subjects Contrasts, Social Pillar Score

Variables	Type III Sum of Squares	df	Mean Square	F	p-value
Time					
Linear	9.23	1	9.23	8.41	0.004**
Quadratic	0.60	1	0.60	1.22	0.27
Cubic	0.12	1	0.12	0.51	0.48
Order 4	0.38	1	0.38	4.09	0.05
Order 5	0.10	1	0.10	1.55	0.22
Time*Revenue (natural log) 2015					
Linear	5.07	1	5.07	4.62	0.03*
Quadratic	0.44	1	0.44	0.90	0.35
Cubic	0.20	1	0.20	0.86	0.36
Order 4	0.40	1	0.40	4.29	0.04*
Order 5	0.13	1	0.13	1.89	0.17
Time*Overseas Reporting Obligations					
Linear	2.38	1	2.38	2.17	0.14
Quadratic	0.36	1	0.36	0.74	0.39
Cubic	0.29	1	0.29	1.23	0.27
Order 4	0.01	1	0.01	0.05	0.82
Order 5	0.06	1	0.06	0.90	0.34
Time*GICS Sector*Revenue (natural log) 2015					
Linear	9.90	9	1.10	1.00	0.44
Quadratic	7.79	9	0.87	1.75	0.09
Cubic	1.45	9	0.16	0.68	0.72
Order 4	0.96	9	0.11	1.14	0.34
Order 5	0.63	9	0.07	1.04	0.42
Time*GICS Sector					
Linear	29.92	10	2.99	2.73	0.005**
Quadratic	9.67	10	0.97	1.96	0.05*
Cubic	2.30	10	0.23	0.98	0.47
Order 4	2.19	10	0.22	2.34	0.02*
Order 5	1.85	10	0.19	2.75	0.005**
Error(Time)					
Linear	121.82	111	1.10		
Quadratic	54.83	111	0.49		
Cubic	26.18	111	0.24		
Order 4	10.40	111	0.09		
Order 5	7.47	111	0.07		

Notes, * indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.

7.12   Appendix 12. Labour Management Score Correlation Trends

Table 26. Orthogonal Contrasts Tests of Within-Subjects Contrasts, Human Capital Theme Score

Variables	Type III Sum of Squares	df	Mean Square	F	p-value
Time					
Linear	0.03	1	0.03	0.01	0.92
Quadratic	10.20	1	10.20	6.26	0.01**
Cubic	1.91	1	1.91	2.21	0.14
Order 4	0.40	1	0.40	0.57	0.45
Order 5	1.46	1	1.46	4.12	0.04*
Time*Revenue (natural log) 2015					
Linear	1.28	1	1.28	0.46	0.50
Quadratic	11.92	1	11.92	7.31	0.008**
Cubic	2.97	1	2.97	3.45	0.07
Order 4	0.47	1	0.47	0.66	0.42
Order 5	1.26	1	1.26	3.57	0.06
Time*Overseas Reporting Obligations					
Linear	0.60	1	0.60	0.21	0.64
Quadratic	1.84	1	1.84	1.13	0.29
Cubic	0.22	1	0.22	0.26	0.61
Order 4	0.70	1	0.70	0.99	0.32
Order 5	0.09	1	0.09	0.24	0.62
Time*Market Capitalisation (natural log) 2015					
Linear	2.19	1	2.19	0.79	0.38
Quadratic	4.51	1	4.51	2.77	0.10
Cubic	1.45	1	1.45	1.69	0.20
Order 4	0.67	1	0.67	0.94	0.34
Order 5	0.01	1	0.01	0.02	0.90
Time*GICS Sector					
Linear	49.30	10	4.93	1.77	0.07
Quadratic	12.93	10	1.29	0.79	0.64
Cubic	10.12	10	1.01	1.17	0.32
Order 4	6.91	10	0.69	0.97	0.47
Order 5	3.72	10	0.37	1.05	0.40
Error(Time)					
Linear	315.33	113	2.79		
Quadratic	184.26	113	1.63		
Cubic	97.37	113	0.86		
Order 4	80.40	113	0.71		
Order 5	39.91	113	0.35		

Notes, * indicates significance with a p-value <0.05, ** p-value <0.01, *** p-value <0.001.

7.13   Appendix 13. Revenue Correlation Trends

Table 27. Orthogonal Contrasts Tests of Within-Subjects Contrasts, Revenue.

Variables	Type III Sum of Squares	df	Mean Square	F	p-value
Time					
Linear	6.27	1	6.27	26.92	<0.001***
Quadratic	0.84	1	0.84	4.72	0.03*
Cubic	0.63	1	0.63	4.78	0.03*
Order 4	0.52	1	0.52	6.90	0.01**
Order 5	0.31	1	0.31	11.45	0.001***
Time*Human Rights Policy					
Linear	0.60	1	0.60	2.58	0.11
Quadratic	0.59	1	0.59	3.32	0.07
Cubic	0.02	1	0.02	0.15	0.70
Order 4	0.15	1	0.15	1.94	0.17
Order 5	0.04	1	0.04	1.37	0.25
Time*Overseas Reporting Obligations					
Linear	0.11	1	0.11	0.47	0.49
Quadratic	0.23	1	0.23	1.31	0.26
Cubic	0.09	1	0.09	0.69	0.41
Order 4	0.07	1	0.07	0.92	0.34
Order 5	0.44	1	0.44	16.05	<0.001***
Time*Policy Against Child Labour					
Linear	0.45	1	0.45	1.94	0.17
Quadratic	1.58	1	1.58	8.86	0.004**
Cubic	0.21	1	0.21	1.56	0.21
Order 4	0.10	1	0.10	1.37	0.24
Order 5	0.004	1	0.00	0.16	0.69
Time* Supply Chian Management					
Linear	0.54	2	0.27	1.16	0.32
Quadratic	1.74	2	0.87	4.88	0.009**
Cubic	0.35	2	0.17	1.31	0.27
Order 4	0.56	2	0.28	3.68	0.03*
Order 5	0.02	2	0.01	0.36	0.70
Time*GRI Checked					
Linear	3.95	2	1.97	8.48	<0.001***
Quadratic	3.46	2	1.73	9.70	<0.001***
Cubic	1.10	2	0.55	4.19	0.02*
Order 4	0.39	2	0.20	2.59	0.08
Order 5	0.06	2	0.03	1.11	0.33
Time * GICS Sector * Overseas Reporting Obligations					
Linear	1.16	9	0.13	0.56	0.83
Quadratic	2.31	9	0.26	1.44	0.18
Cubic	0.49	9	0.06	0.42	0.92
Order 4	1.65	9	0.18	2.42	0.02*
Order 5	2.04	9	0.23	8.26	<0.001***
Time*GICS Sector					
Linear	1.15	10	0.12	0.49	0.89
Quadratic	2.65	10	0.27	1.49	0.16
Cubic	0.28	10	0.03	0.22	0.99
Order 4	1.67	10	0.17	2.21	0.02*
Order 5	1.81	10	0.18	6.58	<0.001***
Error(Time)					
Linear	24.45	105	0.23		
Quadratic	18.75	105	0.18		
Cubic	13.80	105	0.13		
Order 4	7.93	105	0.08		
Order 5	2.88	105	0.03		

Notes, * indicates significance with a p-value <0.05, ** p-value <0.01, *** a p-value <0.001.

8. References

Abhayawansa, S., & Tyagi, S. (2021). Sustainable Investing: The Black Box of Environmental, Social, and Governance (ESG) Ratings. *The Journal of Wealth Management, 24*(1), 49. doi:10.3905/jwm.2021.1.130

ACSI, & KPMG. (2019). *Modern Slavery: risks, rights and responsibilities.* Retrieved from https://assets.kpmg/content/dam/kpmg/au/pdf/2019/modern-slavery-guide-for-companies-investors-feb-2019.pdf

AMP. (2020). *A guide to ESG investing.* Retrieved from https://www.amp.com.au/content/dam/amp-au/documents/wrap-platforms/guide-to-esg-investing.pdf

Andersen, M., & Skjoett‐Larsen, T. (2009). Corporate social responsibility in global supply chains. *Supply Chain Management: An International Journal, 14*(2), 75-86. doi:10.1108/13598540910941948

ASX. (2021). *ASX ISSUER METHODOLOGY MSCI ESG RATINGS.* Retrieved from https://www2.asx.com.au/content/dam/asx/documents/listings/msci-esg-ratings-methodology-webinar.pdf

Australian Department of Home Affairs. (2018). *Modern Slavery Act (2018).* Retrieved from https://www.legislation.gov.au/Details/C2018A00153

Australian Taxation Office. (2016). *Small business entity concessions.* Retrieved from https://www.ato.gov.au/business/small-business-entity-concessions/eligibility/

Babich, V., Burnetas, A. N., & Ritchken, P. H. (2007). Competition and Diversification Effects in Supply Chains with Supplier Default Risk. *Manufacturing & Service Operations Management, 9*(2), 123-146. doi:10.1287/msom.1060.0122

Badampudi, D., Wohlin, C., & Petersen, K. (2015). Experiences from using snowballing and database searches in systematic literature studies. In *ACM International Conference Proceeding Series* (pp. 1-10): ACM.

Bertrand, M., Duflo, E., & Mullainathan, S. (2004). How Much Should We Trust Differences-In-Differences Estimates?*. *The Quarterly journal of economics, 119*(1), 249-275. doi:10.1162/003355304772839588 %J The Quarterly Journal of Economics

BlackRock. (2020). *Towards a Common Language for Sustainable Investing.* Retrieved from https://www.blackrock.com/corporate/literature/whitepaper/viewpoint-towards-a-common-language-for-sustainable-investing-january-2020.pdf

Bloomberg. (2021). *ESG assets may hit $53 trillion by 2025, a third of global AUM.* Retrieved from https://www.bloomberg.com/company/press/esg-assets-rising-to-50-trillion-will-reshape-140-5-trillion-of-global-aum-by-2025-finds-bloomberg-intelligence/

Boutilier, R. G., & Black, L. (2013). Legitimizing industry and multi-sectoral regulation of cumulative impacts: A comparison of mining and energy development in Athabasca, Canada and the Hunter Valley, Australia. *Resources Policy, 38*(4), 696-703. doi:https://doi.org/10.1016/j.resourpol.2013.02.006

Brillinger, D. R. (2012). A Generalized Linear Model With "Gaussian" Regressor Variables. In P. Guttorp & D. Brillinger (Eds.), *Selected Works of David Brillinger* (pp. 589-606). New York, NY: Springer New York.

Cho, S.-H., Fang, X., Tayur, S., & Xu, Y. (2019). Combating Child Labor: Incentives and Information Disclosure in Global Supply Chains. *Manufacturing & Service Operations Management, 21*(3), 692-711. doi:10.1287/msom.2018.0733

Christ, K. L., & Burritt, R. L. (2018). Current perceptions on the problem of modern slavery in business. *1*(2), 103-114. doi:https://doi.org/10.1002/bsd2.15

Cohen, D., Nelson, S., & Rosenman, E. (2021). Reparative accumulation? Financial risk and investment across socio-environmental crises. *Environment and Planning E: Nature and Space*, 25148486211030432. doi:10.1177/25148486211030432

Commonwealth of Australia. (2017). *Hidden in Plain Sight*. Canberra Retrieved from https://parlinfo.aph.gov.au/parlInfo/download/committees/reportjnt/024102/toc_pdf/HiddeninPlainSight.pdf;fileType=application%2Fpdf

Cousins, P., Dutordoir, M., Lawson, B., & Neto, J. Q. F. (2020). Shareholder Wealth Effects of Modern Slavery Regulation. *Management Science, 66*(11), 5265-5289. doi:10.1287/mnsc.2019.3456

Dang, C., Li, Z., & Yang, C. (2018). Measuring firm size in empirical corporate finance. *Journal of Banking & Finance, 86*, 159-176. doi:https://doi.org/10.1016/j.jbankfin.2017.09.006

Deloitte. (2020). *What is ESG rating?* Retrieved from https://www2.deloitte.com/cn/en/pages/risk/articles/what-is-esg-rating.html

Modern Slavery Act, (2018).

Dorfleitner, G., Halbritter, G., & Nguyen, M. (2015). Measuring the level and risk of corporate responsibility – An empirical comparison of different ESG rating approaches. *Journal of Asset Management, 16*(7), 450-466. doi:10.1057/jam.2015.31

Drescher, S. (1987). Eric Williams: British Capitalism and British Slavery. *History and Theory, 26*(2), 180-196. doi:10.2307/2505121

Eurosif. (2014). Sustainable and Responsible Investment *European SRI* Retrieved from https://www.eurosif.org/wp-content/uploads/2014/09/Press-Release-European-SRI-Study-2014-English-version.pdf

EY. (2021). ESG Integration - The Next Big Imperative for Private Equity Firms.

Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal, 38*, 45-64. doi:https://doi.org/10.1016/j.gfj.2017.03.001

Francis, B. B., Hasan, I., John, K., & Song, L. (2011). Corporate Governance and Dividend Payout Policy: A Test Using Antitakeover Legislation. *Financial Management, 40*(1), 83-112. doi:https://doi.org/10.1111/j.1755-053X.2010.01135.x

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment, 5*(4), 210-233. doi:10.1080/20430795.2015.1118917

Gereffi, G. (2020). What does the COVID-19 pandemic teach us about global value chains? The case of medical supplies. *Journal of International Business Policy, 3*(3), 287-301. doi:10.1057/s42214-020-00062-w

GICS. (2020). *GLOBAL INDUSTRY CLASSIFICATION STANDARD (GICS®) METHODOLOGY*. Retrieved from https://www.msci.com/documents/1296102/11185224/GICS+Methodology+2020.pdf

Giese, G., Nagy, Z., & Lee, L.-E. (2021). Deconstructing ESG Ratings Performance: Risk and Return for E, S, and G by Time Horizon, Sector, and Weighting. *The Journal of Portfolio Management, 47*(3), 94-111.

Gill, J., & Torres, M. (2020). *Generalized linear models : a unified approach* (Second edition. ed.). Thousand Oaks, California: SAGE Publications.

Glaz, B., & Yeater, K. M. (2018). *Applied statistics in agricultural, biological, and environmental sciences*. Madison, WI, USA: American Society of Agronomy, Soil Science Society of America, Crop Science Society of America.

Global Reporting Initiative, Sustainability Accounting Standards Board, & PWC. (2021). *A Practical Guide to Sustainability Reporting Using GRI and SASB Standards*. Retrieved from https://www.globalreporting.org/media/mlkjpn1i/gri-sasb-joint-publication-april-2021.pdf

Global Sustainable Investment Alliance. (2019). *GLOBAL SUSTAINABLE INVESTMENT REVIEW*. Retrieved from http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf

Gold, S., Trautrims, A., & Trodd, Z. (2015). Modern slavery challenges to supply chain management. *Supply Chain Management: An International Journal, 20*(5), 485-494. doi:10.1108/SCM-02-2015-0046

Greenberg, J., & Knight, G. (2004). Framing sweatshops: Nike, global production, and the American news media. *Communication and Critical/Cultural Studies, 1*(2), 151-175. doi:10.1080/14791420410001685368

Halbritter, G., & Dorfleitner, G. (2015). The wages of social responsibility — where are they? A critical review of ESG investing. *Review of Financial Economics, 26*, 25-35. doi:https://doi.org/10.1016/j.rfe.2015.03.004

He, C. (2021). Monetary policy, equity markets and the information effect. (RDP 2021-04). doi:https://doi.org/APO-311949

Holmstrom, B., & Kaplan, S. N. (2001). Corporate Governance and Merger Activity in the United States: Making Sense of the 1980s and 1990s. *Journal of Economic Perspectives, 15*(2), 121-144. doi:10.1257/jep.15.2.121

Howell, D. C. (2002). *Statistical methods for psychology* (5th ed. ed.). Pacific Grove, CA: Duxbury/Thomson Learning.

Hsin, L. K. E. (2020). Modern slavery in law: towards continuums of exploitation. *Australian Journal of Human Rights, 26*(1), 165-175. doi:10.1080/1323238X.2020.1807115

Hübel, B., & Scholz, H. (2020). Integrating sustainability risks in asset management: the role of ESG exposures and ESG ratings. *Journal of Asset Management, 21*(1), 52-69. doi:http://dx.doi.org/10.1057/s41260-019-00139-z

Islam, M. A., & Van Staden, C. J. J. J. o. B. E. (2021). Modern Slavery Disclosure Regulation and Global Supply Chains: Insights from Stakeholder Narratives on the UK Modern Slavery Act. 1-25.

ISS ESG. (2021). Investor Handbook on Modern Slavery. *ISS INSIGHTS*.

Khan, R., & Richards, H. (2021). Fashion in 'crisis': consumer activism and brand (ir)responsibility in lockdown. *Cultural Studies, 35*(2-3), 432-443. doi:10.1080/09502386.2021.1898028

Kiesel, F., & Lücke, F. (2019). ESG in credit ratings and the impact on financial markets. *Financial Markets, Institutions & Instruments, 28*(3), 263-290. doi:https://doi.org/10.1111/fmii.12114

Kotsantonis, S., & Serafeim, G. (2019). Four Things No One Will Tell You About ESG Data. *31*(2), 50-58. doi:https://doi.org/10.1111/jacf.12346

KPMG. (2019). *Modern Slavery Risks, Rights & Responsibilities: A Guide for Companies and Investors* Retrieved from https://assets.kpmg/content/dam/kpmg/au/pdf/2019/modern-slavery-guide-for-companies-investors-feb-2019.pdf

KPMG. (2020). *ESG ratings are not perfect, but can be a valuable tool for asset managers*. Retrieved from https://home.kpmg/cn/en/home/insights/2020/10/esg-ratings-are-not-perfect-but-can-be-a-valuable-tool-for-asset-managers.html

KPMG. (2021). *Accelerating the S in ESG – a roadmap for global progress on social standards* Retrieved from https://assets.kpmg/content/dam/kpmg/uk/pdf/2021/06/irsg-kpmg-accelerating-the-s-in-esg-report.pdf

Kraft, T., & Raz, G. (2017). Collaborate or Compete: Examining Manufacturers' Replacement Strategies for a Substance of Concern. *Production and Operations Management, 26*(9), 1646-1662. doi:https://doi.org/10.1111/poms.12710

Larsen, H. T., Bukh, P. N. D., & Mouritsen, J. A. N. (1999). Intellectual Capital Statements and Knowledge Management: 'Measuring', 'Reporting', 'Acting'. *Australian Accounting Review, 9*(19), 15-26. doi:https://doi.org/10.1111/j.1835-2561.1999.tb00113.x

Lawrence, E. R., Nguyen, D. T., & Upadhyay, A. (2021). Are US founding families expropriators or stewards? Evidence from quasi-natural experiment. *Journal of Corporate Finance*, 101987. doi:https://doi.org/10.1016/j.jcorpfin.2021.101987

LeBaron, G., & Rühmkorf, A. (2017). Steering CSR Through Home State Regulation: A Comparison of the Impact of the UK Bribery Act and Modern Slavery Act on Global Supply Chain Governance. *8*(S3), 15-28. doi:https://doi.org/10.1111/1758-5899.12398

Liang, H., & Renneboog, L. (2020). Corporate social responsibility and sustainable finance: a review of the literature. *J European Corporate Governance Institute*(701).

Lin-Hi, N., & Müller, K. (2013). The CSR bottom line: Preventing corporate social irresponsibility. *Journal of Business Research, 66*(10), 1928-1936. doi:https://doi.org/10.1016/j.jbusres.2013.02.015

López-Nicolás, Á., Badillo-Amador, L., & Cobacho-Tornel, M. B. (2013). Will the European Union's New Tobacco Tax Legislation Lead to Reductions in Smoking Prevalence? Evidence From a Quasi-Experiment in Spain. *Nicotine & Tobacco Research, 15*(12), 1963-1970. doi:10.1093/ntr/ntt038

Mackie, J. L. (1963). Are there any incorrigible empirical statements? *Australasian journal of philosophy, 41*(1), 12-28. doi:10.1080/00048406312341481

Madison, N., & Schiehll, E. (2021). The Effect of Financial Materiality on ESG Performance Assessment. *Sustainability, 13*(7). doi:10.3390/su13073652

Mantouvalou, V. (2018). The UK Modern Slavery Act 2015 Three Years On. *Modern law review, 81*(6), 1017-1045. doi:10.1111/1468-2230.12377

Martin Luther King Jr. (1964). Oberlin College speech. Retrieved from http://www2.oberlin.edu/external/EOG/BlackHistoryMonth/MLK/MLKmainpage.html

McDonald, L. (2021, 13/07/2021) *Modern Day Slavery and Super Funds/Interviewer: T. Sahdbolt*.

MSCI. (2014). *ESG RATINGS METHODOLOGY*. Retrieved from https://www.msci.com/eqb/methodology/meth_docs/Executive_Summary_MSCI_ESG_Ratings_Methodology.pdf

MSCI. (2019). *MSCI ESG Ratings Methodology*. Retrieved from https://www.msci.com/documents/1296102/4769829/MSCI+ESG+Ratings+Methodology+-+Exec+Summary+Dec+2020.pdf/15e36bed-bba2-1038-6fa0-2cf52a0c04d6?t=1608110671584

MSCI. (2020). *MSCI ESG Metrics Calculation Methodology*. Retrieved from https://www.msci.com/documents/10199/1283513/MSCI_ESG_Metrics_Calc_Methodology_Dec2020.pdf/92a299cb-0dbc-63ba-debb-e821bd2e2b08

Muhammad, P. M. (2003). The Trans-Atlantic Slave Trade: A Forgotten Crime against Humanity as Defined by International Law Critical Essay. *American University International Law Review, 19*(4), 883-948.

Murdoch, L. (2017, 16 August 2017). Overseas orphanages under scrutiny as Australians told to withdraw support. *The Sydney Morning Herald* Retrieved from https://www.smh.com.au/world/overseas-orphanages-under-scrutiny-as-australians-told-to-withdraw-support-20170816-gxxkqr.html

Murphy, A. (2018). 2018 Global 2000 Methodology: How We Crunch The Numbers. Retrieved from https://www.forbes.com/sites/andreamurphy/2018/06/06/2018-global-2000-methodology-how-we-crunch-the-numbers/?sh=2b835d315044

Neilan, J., Reilly, P., & Fitzpatrick, G. (2020). Time to Rethink the S in ESG. *Harvard Law School on Corporate Governance*.

Nolan, J., & Boersma, M. (2019). *Addressing Modern Slavery*. Sydney, AUSTRALIA: NewSouth Publishing.

Ortas, E., M. Moneva, J., & Álvarez, I. (2014). Sustainable supply chain and company performance. *Supply Chain Management: An International Journal, 19*(3), 332-350. doi:10.1108/SCM-12-2013-0444

Owusu-Ansah, S., & Yeoh, J. (2005). The effect of legislation on corporate disclosure practices. *Abacus, 41*(1), 92-109. doi:https://doi.org/10.1111/j.1467-6281.2005.00171.x

Perry, M. (2018). Revisiting the Law and Governance of Trafficking, Forced Labor and Modern Slavery ed. by Prabha Kotiswaran (review). *Labour / Le Travail, 82*(82), 304-306. doi:10.1353/llt.2018.0067

Pham, N., Cui, B., & Ruthbah, U. (2021). *Modern Slavery Statement Disclosure Quality*. Retrieved from

PWC. (2021). *A shift in expectations*. Retrieved from https://www.pwc.com.au/assurance/assets/esg-and-the-role-of-the-board-2021.pdf

Robinson, D. T. (2008). Strategic Alliances and the Boundaries of the Firm. *The Review of Financial Studies, 21*(2), 649-681. doi:10.1093/rfs/hhm084

Roth, P. L., Switzer, F. S., & Switzer, D. M. (1999). Missing Data in Multiple Item Scales: A Monte Carlo Analysis of Missing Data Techniques. *Organizational Research Methods, 2*(3), 211-232. doi:10.1177/109442819923001

SASB. (2021). SASB Materiality Map.   https://www.sasb.org/find-your-industry/

Scheidler, S., & Edinger-Schons, L. M. (2020). Partners in crime? The impact of consumers' culpability for corporate social irresponsibility on their boycott attitude. *Journal of Business Research, 109*, 607-620. doi:https://doi.org/10.1016/j.jbusres.2019.03.043

Schilling-Vacaflor, A. (2021). Putting the French Duty of Vigilance Law in Context: Towards Corporate Accountability for Human Rights Violations in the Global South? *Human Rights Review, 22*(1), 109-127. doi:10.1007/s12142-020-00607-9

Seru, A. (2014). Firm boundaries matter: Evidence from conglomerates and R&D activity. *Journal of Financial Economics, 111*(2), 381-405. doi:https://doi.org/10.1016/j.jfineco.2013.11.001

The California Transparency in Supply Chains Act 657 C.F.R. (2010).

Stringer, C., & Michailova, S. (2018). Why modern slavery thrives in multinational corporations' global value chains. *Multinational Business Review, 26*(3), 194-206. doi:10.1108/MBR-04-2018-0032

Sun, L., & Al Farooque, O. (2018). An exploratory analysis of earnings management practices in Australia and New Zealand. *International Journal of Accounting & Information Management, 26*(1), 81-114. doi:10.1108/IJAIM-09-2016-0087

The Global Sustainable Investment Alliance. (2021). *GLOBAL SUSTAINABLE INVESTMENT REVIEW 2020*. Retrieved from http://www.gsi-alliance.org/wp-content/uploads/2021/08/GSIR-20201.pdf

Tian, Q., & Guo, W. (2019). Reconfiguration of manufacturing supply chains considering outsourcing decisions and supply chain risks. *Journal of Manufacturing Systems, 52*, 217-226. doi:https://doi.org/10.1016/j.jmsy.2019.04.005

United Nations. (2021). *The Sustainable Development Goals Report*. Retrieved from
   https://unstats.un.org/sdgs/report/2021/The-Sustainable-Development-Goals-Report-2021.pdf

van Duuren, E., Plantinga, A., & Scholtens, B. (2016). ESG Integration and the Investment Management
   Process: Fundamental Investing Reinvented. *Journal of Business Ethics, 138*(3), 525-533.
   doi:10.1007/s10551-015-2610-8

Velte, P. (2017). Does ESG performance have an impact on financial performance? Evidence from
   Germany. *Journal of Global Responsibility, 8*(2), 169-178. doi:10.1108/JGR-11-2016-0029

Verheyden, T., Eccles, R. G., & Feiner, A. (2016). ESG for All? The Impact of ESG Screening on Return,
   Risk, and Diversification. *Journal of Applied Corporate Finance, 28*(2), 47-55. doi:10.1111/jacf.12174

Vermorken, M., Szafarz, A., & Pirotte, H. (2010). Sector classification through non-Gaussian similarity.
   Applied Financial Economics, 20(11), 861-878. doi:10.1080/09603101003636238

Vijeyarasa, R. (2019). A Missed Opportunity: How Australia Failed to Make Its Modern Slavery Act a
   Global Example of Good Practice Comments. *40*, 857.

Walk Free Foundation. (2018). *Global Findings* Retrieved from
   https://www.globalslaveryindex.org/2018/findings/highlights/

Walk Free Foundation. (2019). *Beyond Compliance in the Hotel Sector: A Review of the Uk Modern Slavery Act
   Statements*. Retrieved from https://media.business-
   humanrights.org/media/documents/files/2632_MSA-statements.V8_FNL.pdf