The Relation between Corporate Social Responsibility (CSR) Disclosure and Market Liquidity: Australian Evidence

by

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Statement of Candidate

I certify that the work in this thesis entitled "**The Relation between Corporate Social Responsibility (CSR) Disclosure and Market Liquidity: Australian Evidence**" has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree to any other university or institution other than Macquarie University.

I also certify that the thesis is an original piece of research and it has been written by me. Any help and assistance that I have received in my research work and the preparation of the thesis itself have been appropriately acknowledged.

In addition, I certify that all information sources and literature used are indicated in the thesis.

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ABSTRACT

Recent increases in Corporate Social Responsibility (CSR) disclosure have raised several questions as to why firms engage in CSR disclosure behaviour. One of many possible benefits might be the increased level of market liquidity. In this context, this study examines the relation between CSR disclosure and market liquidity for 200 listed CSR-sensitive firms on the Australian Stock Exchange (ASX) for the year 2014. In particular, this study uses two CSR disclosure measures and four types of market liquidity measures to investigate the association between the two. Based on legitimacy and signalling theory it is hypothesised that firms with lower market liquidity are likely to engage in CSR disclosure behaviour and that with superior CSR disclosure behaviour will enjoy a subsequent increase in market liquidity in the following year. The relation is examined using multiple regression analysis. The results of the study find that a lower level of market liquidity is significantly associated with firms' engagement in CSR disclosure. The findings of the study are likely to shed light on the importance of CSR disclosure.

Keywords: corporate social responsibility; market liquidity; legitimacy theory; signalling theory.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This study examines the relation between CSR disclosure and capital market responses to it, specifically market liquidity. In recent years, there has been growing interest in understanding Corporate Social Responsibility (CSR) disclosure around the world. According to the Australian Centre for Corporate Social Responsibility (ACCSR), CSR disclosure is important in assisting firms to enhance reputation (Australian Centre for Corporate Social Responsibility 2014, p. 1286).

CSR is also about a firm's responsibility to deal with managers, investors and other stakeholders beyond legal obligation (Carroll 1979; Dahlsrud 2008). The rapid increase in voluntary CSR disclosure evidenced by El Ghoul et al. (2011) and Kolk et al. (2005) naturally raises questions among researchers: What factors drive CSR disclosure decisions? What are the incentives for firms to disclose CSR information in their annual reports? A number of factors potentially provide answers to these questions, such as "the intensified scrutiny of corporate impact on society" (Dhaliwal et al. 2011, p. 60), or the recent rapid growth in ethically responsible investment around the world (Vogel 2005). Among the various potential factors influencing CSR disclosure decisions, this study examines one such factor, namely, firm market liquidity, that potentially provides an explanation for the increasing trend in CSR disclosure. According to previous studies, firms engage in CSR disclosure to gain greater economic benefits such as increased market liquidity, higher firm value, and lower cost of capital, and many studies find that firms actually gain economic benefits. (Dhaliwal et al. 2011; Dhaliwal et al. 2012; El Ghoul et al. 2011; Husted 2003; Orlitzky, Schmidt & Rynes

2003; Waddock & Graves 1997a).

Market liquidity is a measure of a stock's ability to be sold quickly, in other words, it is a demand for firm shares that can plausibly be bought and sold immediately by buyers and sellers (Demsetz 1968; Grossman & Miller 1988). If firms have a lower level of market liquidity as a consequence of major corporate events or incidence such as oil spills making a threat to firms' legitimacy, they may engage in CSR disclosure behaviour in order to increase market liquidity as well as to restore firm legitimacy. Higher liquid shares can be seen as a reward for a firm being a good corporate citizen. Therefore, market liquidity is investigated in this research as potential driver of CSR disclosure decisions.

In analyzing the relation between CSR disclosure behaviour and market liquidity, there are concerns for legitimacy risks which may exacerbate firm reputation and financial performance. Legitimacy risks stem from an expectation gap between the reality of firms and the perception of society towards firms (Campbell 2000). Firms engage in CSR disclosure to minimize this gap in order to maintain firm reputation preserving the status quo. When firms fail to minimize legitimacy risks, this will result in lower market liquidity, higher cost of capital, lower firm market value, and less investors would be attracted to those firms that failed to minimize risks and lost its competitiveness consequently. For instance, British Petroleum (BP) struggled for years to regain its reputation after the Deep Water Horizon Oil Spill in 2010. This catastrophic oil leak disaster damaged firm financial performance as evidenced by the market value of BP share plunging significantly wiping off 14 billion pounds of its market value (Moya 2010). This adverse financial impact put BP in a weaker position compared to its competitors such as ExxonMobil, Chevron, Total, and Shell. Therefore, capital market responses to firm CSR disclosure behaviour are important in

examining the motivation for firm CSR disclosure behaviour in order to minimize legitimacy risk. The relation between CSR disclosure and market liquidity as a capital market response to firm CSR disclosure behaviour will be investigated based on the legitimacy theory in this study. Signalling theory is also used as a complementary theory. To encapsulate, the purpose of this study is to analyse the association between firm CSR disclosure behaviour and market liquidity.

The remainder of this chapter is organised as follows: Section 1.2 outlines the motivations for the study and Section 1.3 discusses the expected contributions.. In Section 1.4, the structure of the thesis is presented.

1.2 Motivation

There are a number of motivations for this study. First, a gap in the literature exists in that no empirical studies have investigated the relation between the CSR disclosure and market liquidity. The majority of CSR studies have focused on firm-specific internal factors in relation to corporate governance mechanisms, for example, board composition, board size, mechanisms related to the monitoring or bonding of management, top-management team size, shareholder returns, or CEO compensation (Ayuso et al. 2014; Bear, Rahman & Post 2010; Castka et al. 2004; Godfrey, Merrill & Hansen 2009; Mahoney & Thorne 2005) and CSR disclosure. However, less attention has been paid to factors external to the firm influencing CSR disclosure such as market liquidity. Therefore, the specific focus on market liquidity in this study is likely to provide a potential reason for firm CSR disclosure behaviour.

A firms' unique behaviour in response to the external market, for example, how firms conform to CSR disclosure, is critical as it will directly affect inside decision-making processes especially from a legitimacy perspective (Sethi 1975). There are a number of stakeholders who are interested in socially or environmentally conscious funds (Vogel 2005). Investors pressure firms to focus on those ethically screened funds and increase CSR disclosures in a shareholder resolution process (Reid & Toffel 2009) to make a liquid market with ethical funds which can be bought and sold by ethical investors. Therefore, firms have a market-based incentive not to engage in illegitimate actions and to increase the level of CSR disclosure related to social and environmental information. The relation between firm CSR disclosure behaviour and market liquidity is thus important to demonstrate the reality that when firms act ethically, it not only provides benefits to firms but also to investors and society. One reason for no study on the association between CSR disclosure and firm market liquidity could be the misconception that external factors such as market liquidity do not have a significant effect on CSR disclosure decisions. Therefore, this current study specifically focuses on market liquidity as a potential driver of firm CSR disclosure behaviour to assess firm financial performance rather than investigating the broader capital market responses such as the cost of capital, firm market value, or analyst forecast error.

Second, this study extends the prior literature by analyzing the relation between market liquidity and CSR disclosure behaviour rather than only analyzing the association between market liquidity and mandatory disclosure. Previous studies mostly focused solely on the relation between mandatory disclosure and market liquidity, which is potentially influenced by information asymmetry. For example, Fishman and Hagerty (1995) argue that when the level of mandatory disclosure increases, the level of market liquidity increases as more investors are attracted to shares that they have more information on. Demsetz (1968) found that a reduction in information asymmetry increases stock market liquidity. Similarly,

Copeland and Galai (1983) found that information asymmetry decreases stock market liquidity. Therefore, this current study attempts to explain the level of market liquidity by focusing on CSR disclosure rather than only focusing on mandatory disclosure.

Finally, a further motivation lies in examining Australian firms as they, similar to U.S. firms, play a prevalent role in CSR disclosure decisions. For example, Westpac Banking has been pronounced to be the most sustainable company in the world according to the 2014 Global 100 (Corporate Knights Capital 2014). Several other Australian companies such as Australia and New Zealand Banking Group Limited, Commonwealth Bank of Australia, and Stockland are also on this world ranking list scoring within the top 50. Investors would be attracted to firms which are highly ranked in the list. This is likely to cause firms to increase the level of CSR disclosure to attract more investors. This firm CSR disclosure behaviour in attempting to attract more investors is likely to increase the level of market liquidity. For this reason, the Australian market, similar to the U.S. market, provides an excellent setting for investigating the relation between firm engagement in CSR disclosures and market liquidity.

1.3 Contribution

There are a number of contributions that this study makes to the extant literature. First, this study contributes to the literature by providing additional support to the utility of legitimacy theory. There are a myriad of studies based on legitimacy theory that have investigated the relation between CSR disclosure and firm-specific internal factors such as presence of audit committee (Chau & Gray 2002; Filatotchev 2005; Khan, Muttakin & Siddiqui 2013; Menguc, Auh & Ozanne 2010; Power 2003). However, there are few that investigate the relation between CSR disclosure and external factors such as market liquidity employing legitimacy theory. The findings of this study are therefore likely to provide

additional support to the utility of legitimacy theory in explaining firm CSR disclosure behaviour.

Second, this study makes a contribution to the literature by providing supplementary support to the usefulness of signalling theory. (Campbel & Kracaw 1980; Myers & Majluf 1984). Investigating the relation between market liquidity and CSR disclosure based on signaling theory strengths the explanation based on legitimacy theory. Firm action of giving signal to various players in the market is a legitimizing action to increase the level of market liquidity. It can also be seen that giving a signal to less informed investors by increasing the level of CSR disclosure helps in reducing information asymmetry in the market, which consequently benefits all stakeholders.

Third, this study contributes to the literature by providing a different view in explaining market liquidity. Prior studies have investigated relations between financial information and market liquidity and have focused on a supply and demand framework in the market. For example, Demsetz (1968) analysed market liquidity as a transaction cost influenced by competition in the stock market based on a supply and demand framework. Diamond and Verrecchia (1991) found that more information decreases the cost of capital, which consequently increases market liquidity. This study attempts to show different views in explaining the level of market liquidity by focusing on firm-level CSR disclosure behaviour rather than solely focusing on a supply and demand framework.

Finally, this study also makes a practical contribution. This current study stems from examining the relation between CSR disclosure and market liquidity. Since CSR disclosure may significantly affect the level of market liquidity, the level of CSR disclosure may tell

investors the expected level of market liquidity in the future. Thus, it is critical to analyse the relation between the two since it speaks to the informativeness of CSR disclosures for the capital market participants (Richardson, Welker & Hutchinson 1999). The findings of this study will enable regulators, investment analysts, market participants, and academics to identify the importance of CSR disclosure and make informed decisions about market liquidity accordingly.

1.4 Structure of Thesis

The remainder of the study is organised as follows: Chapter 2 provides a review of the theory and prior literature in relation to CSR disclosure and market liquidity. On the basis of prior studies, two hypotheses for testing the relation between CSR disclosure and market liquidity are developed in Chapter 3. In Chapter 4, the research method and sampling procedures for the study are outlined. Chapter 5 presents data description. Chapter 6 reports the results of hypotheses testing and discusses the results. In Chapter 7, the implications, limitations and recommendations of the findings are discussed.

CHAPTER TWO

THEORY and LITERATURE REVIEW

2.1 Introduction

This chapter reviews prior literature concerning the relation between CSR disclosure and market liquidity. Section 2.2 introduces the definition of CSR. Section 2.3 discusses CSR disclosure. Section 2.4 analyses the relation between CSR disclosure and capital market responses. Section 2.5 investigates the association between market liquidity and CSR disclosure. In Section 2.6, legitimacy theory is discussed followed by the discussion of signalling theory in Section 2.7. Section 2.8 provides a summary of this chapter.

2.2 Definition of Corporate Social Responsibility (CSR)

A substantial literature has attempted to define CSR. However, there still is no consensus on a definition of CSR as it is multi-faceted and complex. Many researchers focus on a firms obligation to do something more than their obligation as a profit-making entity. Dahlsrud (2008, p. 4) notes that CSR has "environmental, social, economic, stakeholder, and voluntariness" dimensions as can be seen in appendix 1. Davis (1973, p. 313) described Corporate Social Performance as "a firm's acceptance of a social obligation beyond the requirements of the law." Similarly, McWilliams and Siegel (2001, p. 117) defined CSR as follows:

"actions that appear to further some social good, beyond the interests of the firm and that which is required by law"

More recently, Vogel (2006, p. 2) also suggests a similar definition as follows:

"… Corporate Social Responsibility (CSR) or business virtue – that is, practices that improve the workplace and benefit society in ways that go above and beyond what companies are legally required to do."

These CSR definitions emphasize ethical virtues and seem to overlook a genuine purpose of business. The contrasting view can be seen from the study of Friedman (1973). According to Friedman (1973), a companies' purpose of making profit should not be deviated; hence, as long as companies are operating within the boundaries of law and regulation, companies do not necessarily have to consider something beyond their obligations. In his view, business is not related to virtue, but is always connected to money.

2.3 Corporate Social Responsibility (CSR) Disclosure

In Australia, CSR disclosures are of two types; mandatory and voluntary disclosures. Exploring both types of disclosures is especially important in this study as CSR sensitive firms are examined. This means that non-financial information in disclosure is very critical to analyze firm CSR disclosure behaviour in response to the level of market liquidity.

Firstly, mandatory CSR disclosure is strongly connected to corporate governance mechanisms. Two of the regulatory mechanisms related to CSR disclosures are *the Corporate Law Economic Reform Program* (CLERP 9) and *the Corporations Act 2001*.

CLERP 9 is closely linked with firm CSR disclosure behaviour. This mandatory corporate governance mechanism changed some of the voluntary provisions into mandatory requirements. For example, these requirements are the disclosures in annual reports about "climate change and greenhouse gas emissions, water pollution and salinity, extended producer responsibility, access to water resources" (Richards, Partner & Freiman 2004, p. 230). This mechanism was established because of corporate scandals in Australia such as One.tel or HIH Insurance. Unacceptable misbehaviour by these firms made regulators take actions to strengthen corporate governance practice, which as a result, enables firms to provide useful and accountable non-financial information to the external capital market.

The Corporations Act 2001 is also closely linked with firm CSR disclosure behaviour. The two specific disclosure requirements in Corporations Act 2001 related to CSR disclosures are firstly, s299(1)(f) environmental regulatory disclosures and secondly, s1013D (A) to (F) socially responsible investment disclosures (Golob & Bartlett 2007, p. 6) as can be seen in appendix 3. Specifically, the second requires to disclose about "labour, environmental, social or ethical issues" related to investment decision making (Haigh 2009, p. 3). This disclosure requirement in the Corporations Act 2001 gives a significant signal to firms and investors to behave ethically to sustain the strong and liquid capital market.

Secondly, voluntary CSR disclosure is firms' commitment to benefit various stakeholders in society. Cotter, Najah and Wang (2011) indicate that companies should contain environmental and non-financial information in disclosures in the annual directors' report. For the general and the well-known framework for CSR disclosure until now, the Global Reporting Initiative (GRI) is placed as the number one globally (Arvidsson 2010; Gamerschlag, Möller & Verbeeten 2011) and there also is World Business Council for

Sustainable Development (WBCSD) (Golob & Bartlett 2007). The GRI is attached in appendix 2.

Specifically, the Group of 100 Inc proposes a voluntary guideline related to CSR disclosures for Australian listed companies such as Guide to Review of Operations and Financial Condition, and Guide to Triple Bottom Line Reporting (Richards, Partner & Freiman 2004). The assessment devices for voluntary CSR disclosures are Implementation of basic workplace rights (SA8000) for human rights, Reporting and performance assurance (AA1000) for supplementary GRI guideline, and Procedures for environmental management (ISO 14000) for environmental issue (Golob & Bartlett 2007). Perrini (2005, p. 613) also presents a number of voluntary disclosures such as UN Global Contract, OECD Guidelines for MNCs, and Amnesty International Guidelines.

Now that both mandatory and voluntary CSR disclosures are examined, the motivation for firm CSR disclosure behaviour will be explained next in relation to capital market responses.

2.4 Corporate Social Responsibility (CSR) Disclosure and the Capital Market

According to previous studies, firms engage in CSR disclosure to gain greater economic benefits such as higher firm value and lower cost of capital. (Dhaliwal et al. 2011; Dhaliwal et al. 2012; El Ghoul et al. 2011; Husted 2003; Orlitzky, Schmidt & Rynes 2003; Waddock & Graves 1997a). Bragdon and Marlin (1972) contended that firms are able to increase profits protecting the environment simultaneously. It can be seen that there is a positive association between profits and firm CSR disclosure behaviour especially in

environment information. Ingram (1978) investigated the relation between CSR disclosures and security returns. They found the importance of focusing on firm-specific characteristics in investigating the response from the market since focusing on this may show us the clear relation between CSR disclosure and security returns. Spicer (1978) also emphasized the importance of CSR disclosure as it can be a good indicator of how investors perceive the worth of firm securities. Spicer (1978) found that companies, and particularly those in environmentally sensitive industries with higher pollution-control records have higher profitability than companies with lower records.

More recently, Orlitzky, Schmidt and Rynes (2003) investigated the relation between CSR performance and financial performance. They found that the reputation attribute plays an important role in motivating managers to engage in CSR activity, which consequently affects firm financial performance. Mackey, Mackey and Barney (2007) discussed the necessity of a firms' engagement in CSR behaviour in relation to its influence on firm market value. Hill et al. (2007) analysed the relation between CSR and stock valuation in three countries and found that there is a positive association between the two. Wang (2011) studied a similar relation between CSR and stock market returns and found that maintaining a consistent level of CSR behaviour is important to avoid undesirable responses from investors.

As a significant number of studies emphasize the association between CSR disclosure and the capital market responses, the relation between CSR disclosure and market liquidity will be analysed in this current study and is discussed in the next section. The scope of this research can be drawn by differentiating it from two recent studies of Dhaliwal et al. (2011) and Dhaliwal et al. (2012). The first study examined the association between voluntary nonfinancial information and the cost of equity capital and the second study examined the

relation between nonfinancial disclosure and analyst forecast accuracy in an international context and emphasized the function of CSR disclosure in the capital market considering both stakeholder and institutional factors. Although this current research agrees with two studies in examining the capital market perspective of firm CSR disclosure behaviour, differences are that firstly, instead of examining the cost of equity capital, market liquidity is examined, secondly, instead of employing agency theory, legitimacy theory is underpinned, and thirdly, the Australian market is investigated rather than the U.S. market.

2.5 Market Liquidity and CSR Disclosure

As indicated in Chapter 1, market liquidity is a measure of a stock's ability to be sold quickly, in other words, there is a demand for firm shares that can plausibly be bought and sold immediately by buyers and sellers (Demsetz 1968; Grossman & Miller 1988). Market liquidity can be seen as a short-term benefit of traders and firms, which means that when market makers (i.e., specialists or dealers) try to meet spreads by buying and selling shares (scalping), instant short-term benefits are generated as well as trading costs. Traders buy and sell shares at the price that would meet the expectations of dealers, which maintains a liquid market.

Substantial literature exists regarding the relation between market liquidity and market or firm reaction based on the premise of information asymmetry. Demsetz (1968) argues that centralization in the stock market indicating less information asymmetry leads to lowering of transaction costs and thus, increasing market liquidity. Copeland and Galai (1983) contend that there is greater price volatility when there is an increase in the bid-ask spread indicating information asymmetry and hence, a decrease in market liquidity. Glosten and Milgrom (1985)

argue that when there is less information asymmetry by having informative transaction prices, there is a decline in the spread and, thus, an increase in market liquidity.

Amihud and Mendelson (1986) posit that trading costs are an increasing function of the spread, which decreases market liquidity. In other words, when the spread increases, trading costs also increase which in return decreases market liquidity. Barclay and Smith (1988) extended the work of Glosten and Milgrom (1985) and argue that increases in the bid-ask spread reduces the liquidity of a firm's shares and is consistent with the study of Modigliani and Miller (1958). Diamond and Verrecchia (1991) contend that revealing public information increases market liquidity as there is less information asymmetry. Conversely, there is an opposite argument that greater disclosure attracts stock traders' unnecessary attention and thus, increases share price volatility which might decreases market liquidity. Given the findings of these studies, it is clear that there is a relation between market liquidity and CSR disclosure because of the existence of information asymmetry.

Market liquidity is an incentive for firms to engage in CSR disclosure. There are a number of reasons why companies engage in CSR disclosure behaviour such as lowering the cost of capital, increasing firm market value, or reducing information risk to attract investors as discussed earlier. Among various motivations for firm CSR disclosure behaviour, market liquidity can be a primary motivation as CSR disclosure behaviour is underpinned by a demand and supply of market interests and firms' response to it. If firms have a lower level of market liquidity, they may engage in the CSR disclosure in order to increase market liquidity. Additionally, corporate executives appear to believe that voluntarily communicating information can increase their firms' stock market liquidity (Graham, Harvey & Rajgopal 2005). Therefore, market liquidity can evidently be an important incentive for firms or a key

decision maker of firms to engage in CSR disclosure.

The incentive of market liquidity and its relation with firm CSR disclosure behaviour can clearly be shown in Australia. The Australian economy has been announced to be "the only economy to consistently rank in the world's top five most resilient economies since 2008" (Australian Trade Commission 2014, para.1). The Australian market has a reputation for political stability, a low-risk environment, and government efficiency attracting domestic and international investors (Brinsden 2009; Department of Foreign Affairs and Trade 2014; Moullakis 2014). The stable, strong, and efficient self-regulatory nature of Australian market provides a platform to investigate the relation between market liquidity and CSR disclosure.

According to Dhaliwal et al. (2011), when there is an increasing level of non-financial information, the cost of equity capital is likely to decrease and conversely when there is a decreasing level of CSR information in disclosure, the cost of capital is likely to increase. In the same way, the general assumption underpinning the relation between firm CSR disclosure behaviour and market liquidity is that there is a positive association between the two. When firms have lower market liquidity, they are likely to engage in CSR disclosure behaviour, and this phenomenon, therefore, is likely to increase market liquidity as a result.

This likely positive relation between CSR disclosure and market liquidity proposes a potential solution to legitimacy risk. When firms have a threat to their legitimacy, investors who are particularly concerned about an ethical issue will not buy and cannot sell shares of those firms facing a legitimacy risk. By having a higher level of CSR disclosure, firms are able to enjoy a higher level of market liquidity as ethical investors are attracted to shares of those firms with a higher level of disclosure. Market liquidity can therefore play a pivotal role

in minimizing legitimacy risk increasing the level of CSR disclosure. When firms have a higher level of CSR disclosure, firms' illegitimate actions such as waste dumping are not likely to occur.

2.6 The Principal Theoretical Approach - Legitimacy

This current study suggests that the ultimate aim of business is always to make a profit by legitimizing firm actions that benefit all the stakeholders. In other words, firm CSR actions contributing to the society from a legitimacy perspective are likely to provide firms with higher market liquidity. There are several benefits of having a higher level of market liquidity such as an efficient capital allocation of capital, trust from creditors, less transaction costs, more sellers and buyers, and most importantly appearing legitimate. When business operates both to make a profit and to make society better, it not only gives business-related people benefits but also gives the general public benefits. Therefore, it can be assumed that companies are likely to engage in CSR disclosure behaviour when they face with lower market liquidity, and this firm CSR disclosure behaviour can be predicted to provide firms with higher market liquidity, which leads to the overall benefit for all the stakeholders in society.

Many studies indicate that the primary reason why firms engage in CSR disclosure behaviour is because to try to meet the expectations of society which is the core theme in legitimacy theory (Campbell 2000; Campbell, Craven & Shrives 2003; Clarke & Gibson-Sweet 1999; Farache & Francisca 2010; Nikolaeva & Bicho 2011). Society expects firms to perform socially desired actions such as helping communities, protecting the environment, caring for employees, ensuring product quality, consideration for consumers,

and fundamentally having a conscious mind for every firm activity to be a ‘good corporate citizen’, which would provide firms a higher level of market liquidity.

According to Guthrie and Parker (1989, p. 344), legitimacy theory is about a ‘social contract’ between a firm and society that encourages firms to disclose CSR information to benefit society and, in return, firms gain a benefit in its ‘continued existence’. From this perspective, it can be seen that firms engage in CSR disclosure behaviour because they not only care about benefits i.e. a higher level of market liquidity but also concern about the society i.e. from a legitimacy perspective.

There are two dimensions to legitimacy theory, namely a reactive dimension and a proactive dimension. A number of previous studies have focused on the reactive dimension to explain firm CSR behaviour in relation to a legitimacy crisis (Cho & Patten 2007; Deegan, Rankin & Tobin 2002; Gray, Kouhy & Lavers 1995b; Lindblom 1994). According to Deegan, Rankin and Tobin (2002), firms provide more information about social and environmental disclosure to the public when there is a threat to their legitimacy, for example, the BHP Billiton Ok Tedi environmental mining disaster. This disaster to the community in Papua New Guinea attracted undesirable media attention, which was an evident legitimacy risk for BHP Billiton. This legitimacy risk led BHP Billiton to increase the level of CSR disclosures (Cho & Patten 2007). However, firm CSR behaviour in this reactive dimension does not seem to be far-sighted because there is no forward-looking effort and firm actions seem to stem from a fear of losing or harming their reputation.

The proactive dimension in legitimacy theory is more far-sighted and firm’s proactive CSR disclosure behaviours can help prevent such environmental disasters in advance.

According to Sethi (1975, p. 62), firms respond to market forces by adapting their behaviour to social needs, for example, "installing devices to remove pollutants from factory smokestacks; paying immediate and fair compensation to victims of pollution or product-related injuries; and insuring that consumers receive satisfactory service from the products they buy." As Sethi (1975) argues, these firms' forward-looking CSR behaviour will increase legitimacy, reputation, and thus shareholder value as well.

The proactive dimension in legitimacy theory is also linked to the strategic CSR literature in that one dimension in the strategic CSR literature is 'proactivity'. Burke and Logsdon (1996) note that 'proactivity' indicates the extent to which firm CSR behaviour is planned ahead of positive or negative market trends. When firms anticipate positive market movements such as a consumers' favor for a newly-developed technological product, firms are likely to attract more investors who are interested in those products. By contrast, when firms expect negative market trends such as emerging concerns of environmental issues, which is a threat to legitimacy, firms are likely to scan their products meticulously not to provoke environmental groups. It is conjectured that when firms are faced with a lower level of market liquidity caused by these kinds of legitimacy threats, they are likely to engage in CSR disclosure behaviour. Thus, this proactivity dimension is critical for firm strategic decision-making processes which may be a main concern for firms to meet the expectation of shareholders as well as society.

While there are many CSR dimensions such as environmental, product-related, employee-related or consumer-related, the dimension of most concern seems to be the social and environmental dimension. Patten (1992) examines how firm CSR disclosure behaviour reacts to public policy pressure, and found that firms engage in social disclosure in order to

legitimize their actions. Milne and Patten (2002) specifically investigated the role of environmental disclosures in the chemical industry. They explored how chemical firms respond to a legitimacy risk like a toxic waste dumping problem in the 1970s, and found that firm's legitimacy can be rebuilt by having greater environmental disclosures. Similarly, Van Staden and Hooks (2007) found that firm environmental responsiveness can be reflected in environmental disclosure, which was investigated based on the proactive dimension of legitimacy theory.

As discussed above, legitimacy theory emphasizes the social contract to meet the expectation of society indicating that a firm should have a social virtue. This makes legitimacy theory a core theme in explaining firm CSR behaviour as firms can be seen as a moral social actor running their business philanthropically. However, as the fundamental purpose of business is to make a profit rather than to contribute to society by acting for the greater good from a Utilitarian perspective, the theme in legitimacy theory seems somewhat naïve. It seems that this view does not consider who the real key decision makers are. As senior managers, for example CFOs, are the key decision makers in firms, and they seem very sensitive to external markets, managers' motivation to disclose CSR information should also be discussed (Freedman & Stagliano 1992; Meek, Roberts & Gray 1995; O'Donovan 2002). Thus, signalling theory which helps explain an "inside" motive for firm CSR disclosure decisions is discussed next as a complementary approach to legitimacy theory.

2.7 Complementary Theoretical Approach - Signalling

Signalling theory can also explain firm CSR disclosure behaviour. From a signalling perspective, firms try to signal to society that they are a 'good corporate citizen' and can be seen as a credible and reliable social actor. In return, they can expect a higher level of market

liquidity with a better reputation. According to Nikolaeva and Bicho (2011, p. 139), signalling theory as one of the economics-based disclosure theories shows that "good CSR performers have more incentives to report their good type of management, internal controls, and reporting quality, which implies a positive association between CSR performance and reporting".

The main theme in signalling theory is that a signal is a communication device between a firm and investors in the capital market. Sellers can communicate their superior quality of shares to buyers to increase the share price. In the same way, firms can communicate their better quality of shares to the market by increasing the level of CSR disclosure. When sellers have an impoverished signalling skill, an opportunity loss is incurred. This is because their good quality of shares is not signalled well enough to be conveyed to buyers in the market. In the same vein, when firms have a lower level of market liquidity because of a poor signalling skill, they engage in CSR disclosure behaviour not to incur an opportunity loss (Morris 1987).

Signalling actions can also be achieved when there is information asymmetry between a firm and investors in the market (Certo 2003; Morris 1987). Watson, Shrives and Marston (2002, p. 291) posit that "[s]ignalling is a reaction to informational asymmetry in markets" and information disparity can be minimized by giving signals to investors that are less informed about the genuine quality of firm shares. Giving signals can thus be said as an activity to achieve 'signalling equilibrium' (John & Williams 1985) which minimises the information gap between a firm and investors. In this way, signalling theory can be seen as complementing legitimacy theory by helping in explaining firm CSR disclosure behaviour. CSR disclosure phenomenon can thus be viewed as a firm value creation process both in the

short-term (market liquidity) and long-term (reputation, legitimacy) (Burke & Logsdon 1996) by signalling their good quality to the capital market.

2.8 Summary

This section has reviewed and examined the theoretical concepts that were considered to be the most relevant in terms of their impact on market liquidity after having an increased level of CSR disclosure, and the extent to which the assumptions within these constructs are likely to be applicable to firm CSR disclosure behaviour in reaction to a lower level of market liquidity based on both legitimacy and signalling theory. The discussion has generally indicated that the theories provide different perspectives in relation to the importance and usefulness of the CSR disclosure as a mechanism that will secure improved firm market liquidity.

CHAPTER THREE

HYPOTHESIS DEVELOPMENT

3.1 Introduction

In this chapter, two hypotheses concerning the relation between CSR disclosure and market liquidity are developed based on the relevant literature. The relation between the two indicates that firms with lower market liquidity may engage in CSR disclosure, and consequently may have higher market liquidity. The first hypothesis is developed in Section 3.2 and the second hypothesis is developed in Section 3.3.

3.2 Market Liquidity and CSR Disclosure

The relation between market liquidity and CSR disclosure can be investigated from a legitimacy perspective based on the premise of information asymmetry. The relation between market liquidity and CSR disclosure suggests that there are different views from different stakeholders according to the level of information asymmetry. When there is an information disparity, it means that some stakeholders do not share information to some degree with other stakeholders in order to maintain their superior position. Their information-holding behaviour is caused by their view that they can employ favourable or unfavourable information whether to release to the market or not to fulfil their own self-interest. They see information as a resource that they can take advantage of to control the internal and external environment. In their view, the market is a competitive stage that they have to fight for to gain more information strategically signalling their power within the market. They use information to maintain the status quo if they are in an advantaged position or to gain a superior position if they are not (Suchman 1995).

McWilliams and Siegel (2001) suggested that firm CSR disclosure behaviour is a firms strategic decision to avoid negative market response. Thus, it can be assumed that when firms are faced with a lower level of market liquidity, they try to engage in CSR disclosure behaviour strategically signalling the quality of their business operations and management in order to increase the level of market liquidity while decreasing information asymmetry simultaneously.

Frankel, McNichols and Wilson (1995) suggested that when firms increase CSR disclosure level, they expect the cost of capital to decrease. Mackey, Mackey and Barney (2007) also discussed the necessity of firms' engagement in CSR disclosure behaviour in the expectation of increasing the level of firm market value. Sletten (2012) also found that firms are likely to increase the level of CSR disclosure to decrease the cost of equity capital and to increase the stock price. Wang (2011) studied the a relation between stock market returns and CSR disclosure and found that maintaining a consistent level of CSR behaviour is important to avoid undesirable response from investors. Ingram (1978) investigated the relation between security returns and firm CSR disclosure behaviour and found that disclosure behaviour is influenced by the market response. Spicer (1978) also emphasized the importance of CSR disclosure to the capital market as it can be a good indicator of how investors perceives the worth of firm shares. Dye (1985) found that firms have more incentives to engage in CSR disclosure behaviour to signal their good CSR performance. This discussion gives rise to the following hypothesis concerning the relation between market liquidity and CSR disclosure.

H1: The likelihood that a firm will engage in CSR disclosure is positively associated with its market liquidity.

3.3 CSR Disclosure and Market Liquidity

Bhide (1993), Diamond and Verrecchia (1991), and Heflin, Shaw and Wild (2005) investigated the relation between mandatory financial disclosure and capital market responses and found that more disclosure results in less information asymmetry, lower cost of capital, and higher market liquidity.

However, It seems evident that mandatory disclosure may bring about undesirable firm behaviour as it makes it more difficult for firms to disclose bad news (Teoh & Hwang 1991). This may decrease a firm's stability and credibility; thus, decrease firm market liquidity and firm reputation. Amir and Lev (1996) examined how information asymmetry affects market value using financial and non-financial information. They found that financial reporting inadequacy leads investors to rely more on nonfinancial information rather than financial information.

Managers are likely to disclose more information to give a positive signal to investors which leads to an increase level of market liquidity. As firms have a discretionary ability in engaging in CSR disclosure, a potential increase in market liquidity motivates firms to engage in CSR disclosure behaviour and to garner societal support from a legitimacy perspective. This will also provide firms with a long term benefit with reputation, value-creation, and a good brand image, which benefit all stakeholders in society.

CSR disclosure decisions are related to the legitimacy gap and are likely to affect market liquidity, which is closely linked to firm external reputation. For example, Graham, Harvey and Rajgopal (2005) examined management behaviour in relation to meeting earnings benchmarks. Meeting earnings benchmarks by having an increased level of voluntary

disclosure can give a positive signal to the capital market that a firm is credible, and this is likely to increase market liquidity. This disclosure behaviour is motivated by managements' actions to have a positive external reputation, a good brand image which may result in increased market liquidity. Thus, it is apparent that there is a significant relation between CSR disclosure decisions and firm legitimizing actions affecting and affected by market liquidity. The influence of legitimacy risks or legitimacy gaps on market liquidity demands the necessity of higher level of CSR disclosure. This will add value to key players like CFO by providing them the strengthened competitiveness and it also gives firms to gain a competitive advantage within the external market and, as a result, improve market liquidity. There also is scepticism regarding disclosure behaviour according to Teoh and Hwang (1991). According to this study, firms disclose information because they try to avoid a negative market reaction if they do not disclose.

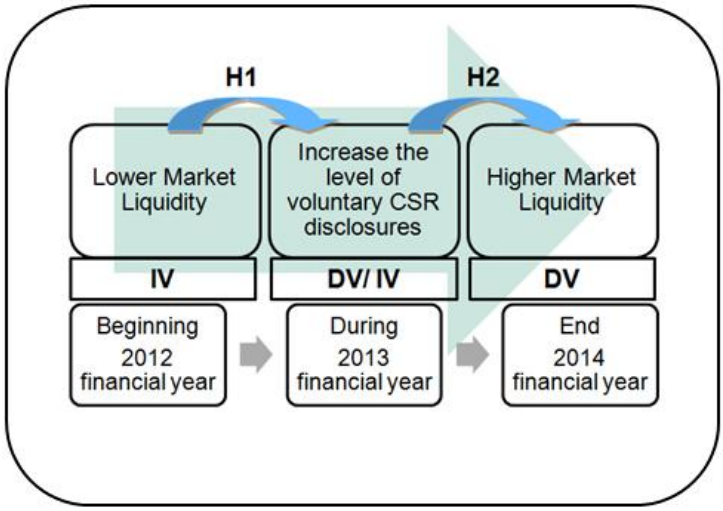
There is a clear evidence that transmitting CSR disclosure information has a significant positive influence on market liquidity (Graham, Harvey & Rajgopal 2005). Hill et al. (2007) analysed a similar relation between CSR disclosure and stock valuation in three countries and found that there is a positive association between the two. The level of market liquidity is significantly influenced by a firms decision in engaging in CSR disclosure behaviour that is beyond the scope of mandatory financial disclosures (Davison 2002). Based on this discussion, the following hypothesis concerning the relation between CSR disclosure and market liquidity is developed.

H2: Corporate social responsibility disclosure is associated with a subsequently higher market liquidity.

In the first hypothesis, it is expected that when firms have a lower level of market liquidity, they engage in CSR disclosure as other firms would also engage in having more disclosure to gain a competitive advantage in the market which may benefit all the stakeholders in society. In the second hypothesis, it is expected that after firm having a higher level of CSR disclosure, there would be a higher level of market liquidity.

Following the approach of Dhaliwal et al. (2011), endogeneity issues can be generated when examining the relation between CSR disclosure and market liquidity. This means that the relation between CSR disclosure and market liquidity can be somewhat causal along with the relation among variables and there could be possible measurement errors (Dhaliwal et al. 2011; Ibrahim 1999; Umlauf 1991). On the one hand, if a firm with a higher level of market liquidity has more CSR disclosures, then a positive relation can be found. On the other hand, if CSR disclosure decision is motivated by a firms desire to improve lower market liquidity, then a negative relation can be detected. Therefore, the contemporaneous relation between the two can be ambiguous. This relation between two competing hypotheses can be shown in the following figure 1.

Figure 1: Hypotheses



CHAPTER FOUR

RESEARCH METHOD

4.1 Introduction

This chapter outlines the research method used to test the hypotheses developed in the Chapter 3. Section 4.2 presents two regression models used to test the hypotheses. Section 4.3 considers the measurement of independent variables and Section 4.4 discusses the definition of the dependent variables in the models. In addition, Section 4.5 discusses a number of control variables included in the regression models. Section 4.6 outlines the data collection process adopted. Finally, section 4.7 provides a summary of the chapter.

4.2 Method of Analysis

The hypotheses developed in Chapter 3 are tested using linear regression models since the dependent and independent variable are continuous. The relations are analysed using the following regression equations, Model 1 to test hypothesis 1 and Model 2 to test hypothesis 2:

Model 1: $DISCI = \alpha + \beta_1 LIQUIDITY + \beta_2 PROFITABILITY + \beta_3 LEV + \beta_4 FIN + \beta_5 COMPETITION + \beta_6 MB + \beta_7 INDEP + \beta_8 VAREARN + \beta_9 AGE + \beta_{10} INDUSTRY + \varepsilon$

Model 2: $LIQUIDITY = \alpha + \beta_1 DISCI + \beta_2 VOLU + \beta_3 BETA + \beta_4 LEV + \beta_5 MB + \beta_6 SIZE + \beta_7 AGE + \beta_8 INDUSTRY + \varepsilon$

Where:

DISCI = the quantity of CSR disclosure measured by first, the ratio of CSR index (CSRDI) measured as the number of CSR index to the total number of index in the checklist, and second, the absolute value of CSR disclosure word count (CSRDWAV) measured as the number of CSR words to the total number of words in annual report.

LIQUIDITY = market liquidity measured in four different ways, namely; LIQUIDITY_6M (6 months average of monthly quoted spread), LIQUIDITY_6T (6 months average of daily quoted spread divided by trading days), LIQUIDITY_AM (Annual average of monthly quoted spread), and LIQUIDITY_AT (Annual average of daily quoted spread divided by trading days)

ROA = total return on assets measured as the ratio of income before extraordinary items (IB) over total assets (AT) at the beginning of each year

LEV = leverage multiplier, measured as the ratio of total assets divided by total shareholders' equity. This ratio shows how much a company uses debt in its capital structure since the higher the ratio, the more debt a company has.

FIN = financing activity, measured as the ratio of long-term debt divided by total shareholders' equity. This ratio presents how much a company is controlled by its debtholders rather than shareholders showing the risk level of a company since the higher the ratio, the riskier a company is.

COMPETITION = Herfindahl-Hirschman Index multiplied by -1. The index is calculated as the sum of the squared fractions of market share of all the firms in an industry.

MB = the market-to-book ratio of share price, defined as the market value divided by the book value of common stock. This is measured as the closing share price on the last day of financial year divided by the sum of total assets minus intangible assets and liabilities. This

ratio is also called price-to-equity or price-to-book ratio.

INDEP = level of independence of the board of directors, measured as the ratio of independent directors to total board members

VAREARN = the natural logarithm of the standard deviation of three-year average earnings per share (EPS)

SIZE = market capitalization, measured as the natural logarithm of the market value of the company's equity capital, and is calculated by multiplying the number of common shares by the current price.

AGE = firm age

INDUSTRY = industry classification (the GICS code is used to classify industry)

VOLU = the natural logarithm of annual average of daily trading volume of shares

BETA = systematic risk

α = constant term

β_1 - β_{10} = coefficients of variables

ε = error term

Two regression models are used because of the endogeneity issue stemming from a lead-lag effect in examining the relation between CSR disclosure and market liquidity (Dhaliwal et al. 2011). Specifically, the first regression (Model 1) is used to examine the association between a lower level of market liquidity and a higher level of CSR disclosure behaviour, and another regression model (Model 2) tests the relation between CSR disclosure and the level of market liquidity. In Model 1, DISC is the dependent variable and in Model 2, LIQUIDITY is the dependent variable. The remaining variables in the model are included to control for factors affecting the relation between CSR disclosure and market liquidity.

4.3 Independent Variables

The independent variables are LIQUIDITY (market liquidity) in Model 1 and DISCI (CSR disclosure) in Model 2, which are derived from the extant literature. Measures for each variable are discussed in this section.

4.3.1 Measures for the Level of Market Liquidity

Market liquidity can be measured using a number of proxies in two big categories of trade-based measures and order-based measures (Aitken & Comerton-Forde 2003). In addition, there are four dimensions of width, depth, immediacy, and resiliency in liquidity (Harris 1990). Each dimension in liquidity uses different measures (Chollete, Næs & Skjeltorp 2006) The trade-based measures are effective spread, trading volume, trades per order, and liquidity (Amivest) ratio. The order-based measures are quoted spread, price slope, and order book symmetry (Aitken & Comerton-Forde 2003; Amihud & Mendelson 1986; Amihud, Mendelson & Lauterbach 1997; Chordia, Roll & Subrahmanyam 2001; Goyenko, Holden & Trzcinka 2009; Jones 2002; Welker 1995) as can be seen in appendix 4.

In this study, market liquidity is measured using the quoted spread in four different ways as seen in the table 2 below. The reason of using six months average data is that this may show the latest effect when firms have a lower level of market liquidity or when firms have a higher level of CSR disclosure, and can be compared to average quoted spread data.

Table 1: Market Liquidity Measures

	6M	6T	AM	AT
Daily / Monthly	6 months average of monthly quoted spread	6 months average of daily quoted spread divided by trading days	Annual average of monthly quoted spread	Annual average of daily quoted spread divided by trading days

This is measured by the following formula from Bar-Yosef and Prencipe (2013, p. 300).

$$\text{Quoted Spread}_{id\ or\ im} = (\text{AskPrice} - \text{BidPrice})_{id\ or\ im} / \text{Midquote}_{id\ or\ im}$$

where, $\text{Midquote}_{id\ or\ im} = (\text{AskPrice} + \text{Bidprice})_{id\ or\ im} / 2$, and *i* and *d* represent the stock *i* and day *d*. *i* and *m* represent the stock *i* and month *m*.

The reason why the measure of quoted spread is selected in this study is that this measure captures several characteristics of shares such as trading volume, and stock volatility, and this is the measure that reflects the actual trading within the quotes (Stoll 1989). In this study, trading volume or trading frequency are not considered as a measurement of market liquidity. These measures can be obtained using readily available data. One of the limitations in using trading volume or the number of transactions as a measure is that these are ex post measures rather than ex ante ones. In other words, these represent the trading activity in the past rather than predicting the future. In addition, trading volume is affected by various factors such as investor preferences, liquidity shocks, or specific firm events (Bar-Yosef & Prencipe 2013). As this study follows the approach of Dhaliwal et al. (2011) who saw the cost of capital as an ex ante one rather than the ex post one, trading volume is not selected as a measure of market liquidity in this current study.

The differences with Bar-Yosef and Prencipe (2013) in the liquidity measure are that this current study uses firstly, an annual average of daily quoted spread rather than a monthly average, and second, the annual average of the ask price on the first day of the month minus the bid price on the last day of month instead of only using the monthly average spread data. In addition, the six month-average of each measure is also used to see the latest effect of having a lower level of market liquidity in Model 1 and CSR disclosure in Model 2 instead of only using the monthly average data for the six-year period.

The quoted spread is also called the bid-ask spread as used in the study of Bar-Yosef and Prencipe (2013). The bid-ask spread represents the cost for an immediate trade by investors in the capital market. In other words, the bid-ask spread can be used to capture the accurate cost related to immediate trading activity (Bar-Yosef & Prencipe 2013). Thus, the bid-ask spread can be used for comparison across different stocks with different share prices. In using the quoted spread as a market liquidity measure in this study, this measure provides a theoretical prediction in relation to trading volume. The higher the bid-ask spread, the lower the trading volume as investors would not try to buy those shares which might not provide them benefits when holding shares (Chordia, Roll & Subrahmanyam 2001; Copeland & Galai 1983; Roulstone 2003).

4.3.2 Measures for the Extent of CSR Disclosure

According to Healy and Palepu (2001), the extent of CSR disclosure can be measured by three proxies namely management forecasts, the Association of Investment Management Research (AIMR) ratings, or a self-constructed measure. Using management forecasts as a proxy has a limitation in that it cannot accurately verify various types of CSR disclosure such as disclosure items in the human capital section as this proxy is based on earnings and

revenues (Healy & Palepu 2001). The AIMR rating as a proxy also has a weakness in that it is based on rankings in financial statements, which may focus more on financial information rather than non-financial information. In examining the extent of CSR disclosure, focusing on non-financial information is critical. Therefore, this study uses a self-constructed measure based on Young and Marais (2012) who constructed a comprehensive checklist based on the extant literature. The seven main categories of CSR disclosure items in this checklist (appendix 5) are as follows:

(1) labour (in relation to the management of employees such as fight against discrimination, working conditions, career development, and industrial relations)

(2) ethics (in relation to ethical practices such as code of conduct, whistleblower function, and protection of human rights)

(3) community (in relation to a firms engagement in community development such as water projects, local employment, and philanthropic activities)

(4) environment (in relation to a firms commitment in protecting environment such as prevention of pollution, climate change mitigation, and sustainable resource use)

(5) business behaviour (in relation to general firm social behaviour such as consumer issues, socially responsible purchasing, and fair operating practices)

(6) finance and governance (in relation to CSR investment, investor relations and shareholder communication policy)

(7) aggregated CSR policy (in relation to specific CSR policy such as formalization of the CSR policy, organizational structure of CSR, CSR systems, and publication of a CSR report).

In examining the extent of CSR disclosure, content analysis is used to measure CSR

disclosure items in annual reports (Krippendorff 2012). This analysis stems from the World War II when the U.S. analysed enemy propaganda systematically to win the war (Berelson 1952). At this time, content analysis is called a "language of politics" as countries involved in the war at that time had to investigate hidden meanings in propaganda (Lasswell 1965). In this context, the literature suggests that content analysis is a useful measure to excavate information (Dumay & Cai 2014; Guthrie 2014) and it is the objective measure to code data into explicit categories in the checklist (Morgan 1993). This allows a classification of information in annual reports, and the information in the same category can be used for comparison between different industries or companies.

There are qualitative and quantitative coding differences. In this study, only quantitative coding is used as this provides objective, systematic and generalisable inferences from text (Berelson 1952; Kerlinger 2011; Krippendorff 2012). Measurement methods in quantitative coding are "the number of documents, the number of words, the number of sentences, the number of pages, the proportion of pages, the percentage of total disclosure" and the proportion of picture in annual reports (Unerman 2000, p. 668).

This current study uses two different types of CSR disclosure measures, namely, CSR index (CSRDI) and the absolute value of CSR word count (CSRDWAV). Firstly, when CSR items are found in an annual report that matches with a particular disclosure item in the checklist, it is recorded as 1 for its occurrence and 0 otherwise (Branco, Manuel Castelo & Rodrigues, Lúcia Lima 2008; Hackston & Milne 1996; Haji 2013; Haniffa & Cooke 2005; Young & Marais 2012).

Secondly, to measure the extent of CSR disclosure, the absolute value of CSR word

count (CSRDWAV) is used (Deegan & Gordon 1996). When CSR items are found in an annual report that matches with a particular item in the checklist, the number of words in CSR items are counted and recorded in the checklist. Predetermined codes in the checklist are again defined by synonyms in annual reports during the data analysis.

After the coding process, the total number of CSRDI is counted to generate the ratio of CSR disclosure items in the annual report. The total number of CSRDWAV is also counted. The example is shown in Appendix 5.

4.4 Dependent Variables

The dependent variable in each regression model presented in Section 3.2 is the extent of CSR disclosure (DISCI) and market liquidity (LIQUIDITY) respectively. The measurements of each variable are explained in Section 4.3 as both are also independent variables in each regression model.

4.5 Control Variables

This study includes a number of control variables that were used in prior research to control for factors influencing the relation between the extent of CSR disclosure and market liquidity. The control variables used in this study are as follows.

4.5.1 Control Variables in Model 1

Profitability

Prior studies have found that return on assets (ROA) is one of the firm characteristics that can proxy for the profitability of a firm. Some studies argue that the association between firm

CSR disclosure behaviour and ROA is not particularly strong (Belkaoui & Karpik 1989; Hackston & Milne 1996; Haniffa & Cooke 2005; Patten 1992; Richardson & Welker 2001). However, it seems evident that firms try to gain a competitive advantage in having a higher level of CSR disclosure which could increase profitability. This means that engaging in CSR disclosure behaviour would lower firm's implicit costs such as research and development expenses, environmental protection costs (Waddock & Graves 1997b), or employee training costs. Thus, when firms try to avoid investing in CSR activities, it is likely to increase explicit costs which may result in lower profitability (Waddock & Graves 1997b). In this sense, profitability is included in this study as a control variable and is calculated as net income divided by average total assets.

Leverage Multiplier (LEV)

Financial leverage is also one of the major firm characteristics related to CSR disclosure. Dhaliwal et al. (2011) measure this variable by the amount of debt during the year scaled by total assets at the beginning of the year. It is conjectured that when there is a higher level of financial leverage, it is likely that there is a higher level of CSR disclosure as creditors or debt holders will demand more information from a firm. In this study, leverage multiplier is chosen to see the relation with the capital ratio. This variable is measured as total assets divided by the total shareholders' equity (Hammond 1996; Melvin et al. 2004; Vasiliou & Karkazis 2002).

Financing Activity (FIN)

Prior literature indicates that financing activities have a significant association with stock returns (Bradshaw, Richardson & Sloan 2003, 2006) as firm financing activity tells stakeholders how risky a company is. When the ratio increases, it means that a company becomes riskier, and it presents that there are more influences on firm CSR disclosure behaviour from debtholders than shareholders. This also shows how much a company uses

debt in its capital structure as the higher the ratio, the more debt a company has (Billett & Ryngaert 1997; Crotty 2009; Crotty & Epstein 2008; Fujiwara 2004). Following Dhaliwal et al. (2011), this variable is proxied by the debt-to-equity ratio and this is measured as long-term debt divided by total shareholders' equity (Barnea, Haugen & Senbet 1980; Bhandari 1988; Bowman 1980).

Competition (COMPETITION)

Prior studies find that competition in the market can influence firm CSR disclosure behaviour (Cottrill 1990; Fernández-Kranz & Santaló 2010). There is clear evidence that when proprietary costs increase, the incentives to disclose will decrease caused by intense product and technology competition in the market (Dhaliwal et al. 2011). Following the approach of Dhaliwal et al. (2011, p. 68), this control variable is proxied by the Herfindahl-Hirschman Index multiplied by -1 to allow easier interpretation of more intense industry competition as a lower negative value. The index is calculated as the sum of the squared fractions of sales of all the sample firms in an industry.

Market-to-book Ratio (MB)

Galema (2008) argues that there is a positive relation between the market-to-book ratio and CSR disclosure behaviour. Market-to-book ratio is defined as the market value divided by the book value of common stock (Lakonishok, Shleifer & Vishny 1994) and measured as the closing share price on the last day of financial year divided by the sum of total assets minus intangible assets and liabilities.

Board Independence (INDEP)

Prior research finds that board independence is an important indicator of corporate governance quality which impacts the association between firm CSR disclosure behaviour

and market liquidity. According to Bar-Yosef and Prencipe (2013, p. 302), "board independence potentially leads to better monitoring and may enhance the quality of financial reports." This can be further linked to better quality CSR reports which meet the expectations of society from a legitimacy perspective. The degree of board independence is measured as the ratio of non-executive directors to the total board members (Andres & Vallelado 2008; Bar-Yosef & Prencipe 2013; Chen & Jaggi 2001).

Earnings Volatility (VAREARN)

As there is information asymmetry between a management team and other stakeholders which contributes to a legitimacy gap, earnings volatility (VAREARN) which stems from information uncertainty within the firm affecting market liquidity and firm CSR disclosure decision is included as a control variable (Dhaliwal et al. 2012). This is measured as the natural logarithm of three-year standard deviation of earnings per share (EPS).

Firm Age (AGE)

As one of the firm-level characteristics, firm age effect is controlled as it is likely that there is a positive relation between CSR disclosure and firm age (Dhaliwal et al. 2012; Holder-Webb et al. 2009; Moore 2001) and also between market liquidity and firm age (Fang, Noe & Tice 2009; Sarin, Shastri & Shastri 2000).

Industry (INDUSTRY)

The industry variable is an indicator variable coded as the 2 to 4-digit GICS industry sector code.

4.5.2 Control Variables in Model 2

Trading Volume (VOLU)

As the bid-ask spread is negatively associated with trading volume (Leuz & Verrecchia 2000), when trading volume is decreasing, the bid-ask spread is likely to increase. As the bid-ask spread is a liquidity measure in this current study, trading volume is used as a control variable. In addition, trading volume can indicate the level of information uncertainty in the market (Kim & Verrecchia 2001), which influences investors' preference based on their private information and this may ultimately affect the level of market liquidity.

Systematic Risk (BETA)

Prior studies find that stock volatility in the market should be considered when observing market liquidity (Brownlees & Engle 2012) i.e. when market liquidity increases, volatility would decrease (Butler, Grullon & Weston 2005; Chordia, Roll & Subrahmanyam 2001; Demirgüç-Kunt & Levine 1996; Levine & Zervos 1998). Thus, the systematic risk (BETA) which indicates the stock's volatility is included in this study as a control variable. This is measured using the beta formula driven from the capital asset pricing model (CAPM) (Fama & French 2004; Grundy & Malkiel 1996; Mankiw & Shapiro 1987). The formula is as below.

$$\beta_s = \frac{E(r_s) - r_f}{E(r_m) - r_f}$$

Where:

β_s = beta of the security

r_s = stock's rate of return

$\bar{r}_m$ = market rate of return

r_f = risk-free rate

Leverage Multiplier (LEV)

Lipson (2009) argues that leverage multiplier is negatively associated with market liquidity. This variable is measured as total assets divided by the total shareholders' equity (Hammond 1996; Melvin et al. 2004; Vasiliou & Karkazis 2002).

Market-to-book Ratio (MB)

Fang, Noe and Tice (2009) suggest that there is a positive relation between the level of market liquidity and market-to-book ratio. Therefore, this study includes the market-to-book ratio as a control variable. The definition and measurement of market-to-book ratio is discussed in the previous section in 4.5.1.

Firm Age (AGE)

As one of the firm-level characteristics, firm age effect is controlled as it is likely that there is a positive relation between CSR disclosure and firm age (Dhaliwal et al. 2012; Holder-Webb et al. 2009; Moore 2001) and also between market liquidity and firm age (Fang, Noe & Tice 2009; Sarin, Shastri & Shastri 2000).

Company Size (SIZE)

The control variable, size, is one of the most distinctive firm characteristics associated with market liquidity. Prior studies find that market liquidity (Amihud & Mendelson 1986; Brennan & Subrahmanyam 1996; Richardson, Teoh & Wysocki 2004; Roulstone 2003) is positively associated with market liquidity. Firm size is measured as the natural logarithm of the market value of the company's equity capital calculated by multiplying the number of common shares by the current price.

Industry (INDUSTRY)

The industry variable is an indicator variable coded as the 2 to 4-digit GICS industry sector code.

4.6 Data Collection

4.6.1 Data Sources and Sampling Method

This study examines CSR disclosure items in the corporate reports of the 200 CSR-sensitive firms listed in the ASX on 6 July in 2014. Stratified random sampling is used to collect data from 200 firms representing the population of CSR-sensitive firms in each selected industry. The sampling procedure is explained in detail in section 4.6.2. CSR disclosure data was hand collected from 2013 financial year annual reports. Several studies acknowledge the importance of annual reports as vehicles for the accountability-discharging activity of an organization (Boyne & Law 1991; Chang & Most 1985; Gray, Kouhy & Lavers 1995a, 1995b). The annual report is the main reporting mechanism that firms commonly use to signal what they think is important to communicate with investors (Guthrie et al. 2004). Using the annual report containing CSR information to communicate with investors in the capital market is critical for firms to increase market liquidity.

Annual reports were downloaded from *Datanalysis Premium-Morningstar* database and *BoardRoom* database. Data for ROA (return on asset), LEV (leverage multiplier), FIN (financing activity), COMPETITION (market share), MB (market-to-book ratio), INDEP (board independence), VAREARN (the three-year standard deviation of earnings per share), SIZE (market capitalization), AGE (firm age), BETA (systemic risk) were obtained from *Datanalysis Premium-Morningstar* database. The variable VOLU (trading volume) was

obtained from *Datastream* database. The information regarding LIQUIDITY (market liquidity proxied by the quoted spread) is calculated from data obtained from *Datastream* database and cross-checked with *Bloomberg* database. As two databases provide the daily ask and bid price, the formula outlined in section 4.3.1 was used to determine the quoted spread data.

In this study, CSR-sensitive firms are specifically chosen to achieve the purpose of this research from a legitimacy perspective. Firms in CSR-sensitive industries are more likely to engage in CSR disclosure than firms in low CSR-sensitive or low-profile industries (Hackston & Milne 1996; Hasseldine, Salama & Toms 2005; Patten 1992; Roberts 1992). Engaging in CSR disclosure will provide CSR-sensitive firms higher reputation (Adams & Zutshi 2006; Balmer & Greyser 2003; Bertels & Peloza 2008; Ferns, Emelianova & Sethi 2008; Fombrun & Riel 1997; Fombrun 2005; Friedman & Miles 2001; Hillenbrand & Money 2007; Kolk 2008; Lewis 2003; Schnietz & Epstein 2005) with higher market liquidity, and make firms appear more legitimate.

CSR-sensitive firms can be defined by the level of environmental capital expenditure in CSR-sensitive industries (Toms 2002). These firms are more sensitive to CSR disclosure decisions than other firms. This is because firms have a different risk profile according to their industry type. According to Hasseldine, Salama and Toms (2005, p. 241), "firms in high profile industries disclose significantly more than firms in low profile industries." For example, most service firms do not have a workplace health and safety (OHS) dimension in their CSR reports, which indicate they are not CSR-sensitive firms. In contrast, chemical, food processing, paper and pulp, minerals processing, building and aggregates, energy supply, water and all utilities, metals manufacture, industrial product, property and plantation, and rubber/plastics are all CSR-sensitive firms that are significantly concerned about their CSR

disclosure decisions (Hasseldine, Salama & Toms 2005; Othman, Darus & Arshad 2011).

CSR-sensitive firms can also be defined by how close firms are to consumer issues. Consumer proximity is a CSR-sensitive indicator along with environmental capital expenditure. When a legitimacy threat presents, consumers are more aware of the legitimacy issue, and this leads firms in consumer-proximity industries to increase the level of CSR disclosure (Nan & Heo 2007). According to Branco and Rodrigues (2008), consumer-proximity industries are food manufacturing, textiles, household goods, telecommunication services, food and drug retailers, and finance industries. However, the financial industry is excluded because of the extreme level of financial leverage and its unique "regulatory environment" (Ho & Taylor 2013, p. 10; Ho, Tower & Barako 2008, p. 28), which might hamper the genuine purpose of investigating CSR-sensitive firms.

4.6.2 Sampling Collection Procedures

The initial target population consists of 2158 firms listed on the ASX as at 6 July 2014. First, non-CSR sensitive firms were excluded (n=563). Second, firms in the financial sector were also excluded (n=231) as discussed above. Then, firms that were not classified and firms with no GICS sector code were also excluded. These exclusions resulted in a target population of 1148 firms. In this target population, firms with no annual report or report in different financial year, i.e. 31 December, are excluded (n=58), which resulted in a final population of 1090 firms. From this population, 200 firms were selected using stratified random sampling. The sample size of 200 is determined using the following formula below (Desu 2012; Korn & Graubard 1998; Mukhopadhyay 2009).

$$n = \frac{z^2}{d^2} \sum_{h=1}^{L} (\frac{N_h}{N})^2 \left(\frac{\sigma_h^2}{w_h}\right)$$

Where,

n = the total sample size

Z = z-score = $\frac{x-\bar{x}}{s}$ where, $\bar{x}$ is population mean, and *s* is standard deviation

d = degree of freedom

N_h = the population size in stratum *h*, h = 1,2,…, L,

$N = \sum_{h=1}^{L} N_h$ = the total population size

σ = standard deviation

w_h = the proportion of the sample which will be allocated to stratum *h* summing up to 1

The probability is 100 (1- α)% where, α = 0.05.

The finite population correction factor for each stratum is ignored.

For the sample size in each stratum, proportionate stratification is processed using the following formula below.

$$n_h = (N_h / N) * n$$

where,

n_h : the sample size for stratum *h*

N_h : the population size for stratum *h*

N : total population size

n : total sample size

This sampling procedure is the most suitable and fair method to extract samples for a representation of each homogeneous stratum in the total population (Holder-Webb et al. 2009;

Neuman & Neuman 2006; Singleton & Straits 2005). This sampling process reduces the variances of an estimator of a population mean or population total. This means that this sampling method is particularly important when the distribution of variables is skewed to the right or the left. Therefore, stratified random sampling is an efficient and effective strategy to protect samples against a 'poor' sample (Heinisch 1965).

From the selected 200 firms, some companies were further eliminated using the following criteria. First, when the chosen company shows $0 market capitalization, this company was excluded. Second, when the chosen company had no market liquidity data in 2012, 2013, and 2014 financial year, the company was excluded. Following this procedure, additional firms are selected to replace those eliminated firms. Table 2 below outlines the results of the sample selection results.

Table 2: Sample Collection Results

	Firms
As at 6 July 2014	2158
Less: Non CSR-sensitive firms	
Automobile & Components	9
Capital Goods	104
Commercial & Professional Services	67
Consumer Services/ Customer Services	49
Health Care Equipment & Services	64
Media	32
Pharmaceuticals, Biotechnology & Life Sciences	66
Retailing	44
Semiconductors & Semiconductor Equipment	3
Software & Services	72
Technology Hardware & Equipment	27
Transportation	26
Less: Firms in the financial sector	
Banks	13
Diversified Financials	121
Insurance	12
Real Estate	85
Less: Classification pending	14
Less: GICS Sector Code N/A	202
Target population	1148
Less: Firms with no annual report provided or annual report in a different financial year	58
Study population	**1090**
Stratified random sample selection	
Consumer Durables & Apparel	2
Energy	46
Food & Beverage & Tobacco	8
Food & Staples Retailing	1
Household and Personal Products	1
Materials	132
Telecommunication Services	5
Utilities	5
Final group of companies for analysis	**200**

4.7 Summary

The method of analysis used in this study is via the use of two linear regression models to examine the association between CSR disclosure and market liquidity as outlined in section 4.2. Section 4.3 discusses the measurement of each independent variable included in the regression models. Section 4.4 and 4.5 provides the definition and measurement of dependent and control variables. Section 4.6 outlines the data collection process.

CHAPTER FIVE

DATA DESCRIPTION

5.1 Introduction

This chapter provides sample composition and descriptive statistics for the sample. Section 5.2 provides details of the sample composition and descriptive statistics and section 5.3 discusses the correlation analysis. Section 5.4 examines the reliability of the CSR checklist instrument using Cronbach's alpha and Krippendorff's alpha. Finally, section 5.5 provides tests of the regression assumptions.

5.2 Sample Composition and Descriptive Statistics

The sample composition by industry sector needs to be representative of the whole population's composition. Industry sector is defined as the Global Industry Classification Standard (GICS) code and classified into the following: Energy (10101010-10102050), Materials (15101010-15105020), Consumer Durables and Apparel (25201010-25203030), Food, Beverage and Tobacco (30201010-30203010), Food and Staples Retailing (30101010-30101040), Household and Personal Products (30301010-30302010), Telecommunication Services (50101010-50102010), and Utilities (55101010-55105020). Table 2 in the previous chapter presents the number of firms within each sector and industry segment on the basis of the two digit GICS code. Table 3 below shows that the sample composition reflects the market composition as it is a stratified sampled.

Table 3: Sample Composition by Industry Sector

GICS Industry Sector	Full Sample	Population ^Composition	Sample ^Composition
Energy	46	23.1707317	23
Materials	132	66.1149826	66
Consumer Durables and Apparel	2	2.00348432	1
Food, Beverage and Tobacco	8	3.04878049	4
Food and Staples Retailing	1	0.34843206	0.5
Household and Personal Products	1	0.34843206	0.5
Telecommunication Services	5	2.35191638	2.5
Utilities	5	2.61324042	2.5
Total	***200***	***100%****	***100%***

^Composition as at 7 July 2014.

*Firms classified as GICS Sector code not applicable as at 6 July 2014 are already excluded, so there is no difference in the total percentages of the sample and the population compositions.

Table 4 below presents descriptive statistics for the continuous variables for the sample of CSR-sensitive firms.

Table 4 : Descriptive Statistics for All Variables (n = 200)

	Mean	Median	Minimum	Maximum	Standard deviation
CSRDI	0.12082	0.10989	0.02197	0.37362	0.46052
CSRDWAV	4358.49500	4366.00000	128.00000	22884.00000	2843.18780
LIQUIDITY 6M (1/1/2012 – 30/6/2012)	0.15629	0.12887	-1.02222	1.62448	0.24447
LIQUIDITY 6T (1/1/2012 – 30/6/2012)	0.13007	0.07957	-0.92854	1.29569	0.19524
LIQUIDITY AM (1/7/2011-30/6/2012)	0.14882	0.11450	-0.65427	1.55632	0.20234
LIQUIDITY AT (1/7/2011-30/6/2012)	0.12237	0.07400	-0.41807	1.23309	0.16788
LIQUIDITY 6M (1/1/2014-30/6/2014)	0.20997	0.10346	-0.70833	2.00000	0.33785
LIQUIDITY 6T (1/1/2014-30/6/2014)	0.19768	0.09736	-0.68089	2.00000	0.31553
LIQUIDITY AM (1/7/2013 – 30/6/2014)	0.19331	0.10451	-0.26806	2.00000	0.30108
LIQUIDITY AT (1/7/2013 – 30/6/2014)	0.20175	0.10402	-0.13429	2.00000	0.29268
PROFITABILITY	-.45241	-0.12630	-11.63600	0.27340	1.06746
LEV	1.70853	1.11655	-7.47040	64.41620	4.64552
FIN	0.35550	0.00000	-6.99600	39.77860	2.92780
COMPETITION	-24.73880	-26.12000	-29.11000	1.00000	6.46616

MB	2.69540	0.84500	-1.52000	160.82000	11.68108
INDEP	0.57800	0.60000	0.00000	1.00000	0.20954
VAREARN	2.81355	1.09629	-3.32000	65.13735	6.14860
SIZE	158696210.25	10383956.59	11.05	9465946379.04	770111969.79
AGE	10.63500	7.00000	2.00000	59.00000	9.60960
VOLU	5.56729	5.46327	1.31115	9.86502	1.47062
BETA	0.94404	0.83500	0.00000	2.00000	0.30251

Where:

CSRI = the ratio of CSR Index

CSRDWAV = the absolute value of CSR word count

LIQUIDITY_6M = 6 months average of monthly quoted spread

LIQUIDITY_6T = 6 months average of daily quoted spread divided by trading days

LIQUIDITY_AM = Annual average of monthly quoted spread

LIQUIDITY_AT = Annual average of daily quoted spread divided by trading days

PROFITABILITY = return on asset

LEV = leverage multiplier

FIN = financing activity

COMPETITION = the Herfindahl-Hirschman Index multiplied by -1

MB = market-to-book ratio

INDEP = board independence

VAREARN = the three-year standard deviation of earnings per share

SIZE = firm size, the market value of the company's equity capital

AGE = firm age

VOLU = the natural logarithm of trading volume

BETA = systematic risk

Table 4 provides descriptive statistics for all variables. The results show that the averages of CSRI and CSRDWAV are 0.12082 and 4358.495 respectively. This indicates that there are variations in measuring the extent of CSR disclosure from annual reports. The results show that the averages of LIQUIDITY 6M, 6T, AM, AT in 2012 financial year are 0.15629, 0.13007, 0.14882, and 0.12337 respectively. The averages of LIQUIDITY in 2014 financial year are 0.20997, 0.19768, 0.19331, and 0.20175 respectively. This also indicates that there are variations in measuring market liquidity. The average of PROFITABILITY is negative (-.0.45241) while the averages of LEV (1.70853) and FIN (0.35550) are positive. This indicates that firms are not likely to be profitable and they on average have some degree of debt in their capital structure. The average of COMPETITION in all industries is -24.73880. Average MB is 2.69540 with a range between minimum (-1.52) and maximum (160.82) indicating the possible existence of outliers. The average of INDEP is 0.57800 which means that firms on average have more than half of the board is composed of independent non-executive directors. The average of VAREARN is 2.81355 which means that a positive expectation of management forecasts about EPS seem to be met (Jagannathan & Stephens 2003; Patell 1976). Average SIZE ($) is 158696210.25 with a range between 11.04 and 9465946379.04000. Average AGE is 10.635 with a range between minimum of 2 years and maximum of 59 years. In order to conduct multiple regression analysis, CSRDWAV, VAREARN, SIZE, VOLU, and AGE variables are required to be transformed to their natural logarithms.

5.3 Correlation Analysis

Table 5 below shows the correlation between variables for the sample. In Panel A, the Pearson correlations between the independent variable and control variables (except for LEV, FIN, MB in the yellow cells) are all negative. In Panel B, the correlations between the

independent variable and control variables (except for BETA and MB in the yellow cells) are also negative. In Panel A, LEV and FIN in green cells are highly correlated, which indicates that there is a strong relationship between two variables having more than 64% of variance (Egan & Perry 1998; Scouller 1998; Shaver & Melillo 1984). In Panel B, MB and LEV in green cells are highly correlated. None of other independent or control variables in both panels are highly correlated to each other. The two models used to test H1 and H2 have one independent variable each; thus, there is no multicollinearity problem.

Table 5: Pearson Correlation between Variables

Panel A: Correlation Matrix for Hypothesis 1

	Independent variable				Dependent variable		Control variables								
H1	**LIQUIDITY_AT**	**LIQUIDITY_AM**	**LIQUIDITY_6T**	**LIQUIDITY_6M**	**CSRDI**	**LnCSRDWAV**	**PROFITABILITY**	**LEV**	**FIN**	**COMPETITION**	**MB**	**INDEP**	**LnVAREARN**	**LnSIZE**	**LnAGE**
LIQUIDITY_AT	1	n/a	n/a	n/a	-.210**	-.066	-.113	.034	.043	-.024	.146*	-.142	-.146*	-.324**	-.109
LIQUIDITY_AM	n/a	1	n/a	n/a	-.158*	-.093	-.138	-.023	-.003	-.035	.062	-.153*	-.103	-.336**	-.112
LIQUIDITY_6T	n/a	n/a	1	n/a	-.109	-.111	-.109	.062	.046	-.019	.155*	-.094	-.087	-.241**	-.093
LIQUIDITY_6M	n/a	n/a	n/a	1	-.143*	-.082	-.149*	.015	-.001	-.002	.109	-.136	-.071	-.296**	-.073
CSRDI	-.210**	-.158*	-.109	-.143*	1	n/a	.160*	.174*	.139	.202**	-.063	.054	.261**	.441**	.204**
LnCSRDWAV	-.066	-.093	-.111	-.082	n/a	1	-.105	.172*	.165*	-.098	-.038	.035	.175*	.171*	.013
PROFITABILITY	-.113	-.138	-.109	-.149*	.160*	-.105	1	.017	.060	.109	-.205**	.080	-.104	.203**	.125

LEV	.034	-.023	.062	.015	.174*	.172*	.017	1	.937**	.259**	.169*	.090	.209**	.211**	.055
FIN	.043	-.003	.046	-.001	.139	.165*	.060	.937**	1	.215**	.089	.106	.146*	.211**	.013
COMPETITION	-.024	-.035	-.019	-.002	.202**	-.098	.109	.259**	.215**	1	.039	.076	.206**	.219**	.077
MB	.146*	.062	.155*	.109	-.063	-.038	-.205**	.169*	.089	.039	1	-.114	.035	.100	.042
INDEP	-.142	-.153*	-.094	-.136	.054	.035	.080	.090	.106	.076	-.114	1	.103	.152*	.167*
LnVAREARN	-.146*	-.103	-.087	-.071	.261**	.175*	-.104	.209**	.146*	.206**	.035	.103	1	.344**	-.045
LnSIZE	-.324**	-.336**	-.241**	-.296**	.441**	.171*	.203**	.211**	.211**	.219**	.100	.152*	.344**	1	.208**
LnAGE	-.109	-.112	-.093	-.073	.204**	.013	.125	.055	.013	.077	.042	.167*	-.045	.208**	1

**. Correlation is significant (> 0.5) at the 0.01 level (2-tailed)

*. Correlation is significant (> 0.5) at the 0.05 level (2-tailed)

Panel B: Correlation Matrix for Hypothesis 2

	Dependent variable				Independent variable		Control variables					
H2	**LIQUIDITY_AT**	**LIQUIDITY_AM**	**LIQUIDITY_6T**	**LIQUIDITY_6M**	**CSRDI**	**LnCSRDWAV**	**LnVOLU**	**BETA**	**LEV**	**MB**	**LnSIZE**	**LnAGE**
LIQUIDITY_AT	1	n/a	n/a	n/a	-.224**	-.139	-.024	.155*	-.053	-.003	-.378**	-.062
LIQUIDITY_AM	n/a	1	n/a	n/a	-.241**	-.133	-.043	.180*	-.056	-.008	-.364**	-.081
LIQUIDITY_6T	n/a	n/a	1	n/a	-.216**	-.112	-.059	.121	-.042	.009	-.320**	-.090
LIQUIDITY_6M	n/a	n/a	n/a	1	-.220**	-.118	-.056	.167*	-.052	-.005	-.289**	-.116
CSRDI	-.224**	-.241**	-.216**	-.220**	1	n/a	.224**	.022	.041	-.007	.434**	.197**
LnCSRDWAV	-.139	-.133	-.112	-.118	n/a	1	.178*	.088	-.087	-.102	.181*	.014
LnVOLU	-.024	-.043	-.059	-.056	.224**	.178*	1	.202**	-.021	-.048	.226**	.260**
BETA	.155*	.180*	.121	.167*	.022	.088	.202**	1	-.041	-.066	.002	.101
LEV	-.053	-.056	-.042	-.052	.041	-.087	-.021	-.041	1	.949**	.067	.019
MB	-.003	-.008	.009	-.005	-.007	-.102	-.048	-.066	.949**	1	.040	.007
LnSIZE	-.378**	-.364**	-.320**	-.289**	.434**	.181*	.226**	.002	.067	.040	1	.190**
LnAGE	-.062	-.081	-.090	-.116	.197**	.014	.260**	.101	.019	.007	.190**	1

**. Correlation is significant (> 0.5) at the 0.01 level (2-tailed)

*. Correlation is significant (> 0.5) at the 0.05 level (2-tailed)

5.4 Reliability Testing

5.4.1 Tests of Internal Reliability

This section tests the reliability of the internal consistency of coding CSR items into the checklist using the Cronbach's alpha. To account for the accuracy of using the CSR checklist as an instrument to measure the extent of CSR disclosure, this test is used to test its reliability and supports its validity (Tavakol & Dennick 2011). The reason why the Cronbach's alpha is chosen is because this test is the most widely used one among other measures such as Percent Agreement, Bennett et al.'s *S,* Scott's Pi, Cohen's Kappa, Fleiss's *K,* or Krippendorff's alpha (Hayes & Krippendorff 2007; Krippendorff 1970, 2012).

There are seven dimensions in the CSR checklist which are made up of ninety one CSR items as attached in the appendix 5. Each dimension is checked for reliability of internal coding as revealed in the Table 6 below. While there is a significant reliability for the dimensions of Business behaviour, Environment, Ethics, Finance and governance, and Labour, there is little significance in dimensions of Community and Aggregated CSR policy dimensions. The reason might be that there are not many CSR disclosure items in annual reports for the test. The Community dimension has 91 observations and Aggregated CSR Policy dimension has 54 observations which is the least number of observations compared to other dimensions. The observations of other dimensions are all over 500. Therefore, the results for the Community and Aggregated CSR Policy dimensions may not be accurate.

Table 6: Cronbach's Alpha Reliability Tests

Business Behaviour

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.994	1.000	589

Finance and Governance

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.991	.999	562

Community

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.391	.830	91

Labour

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.991	.999	589

Environment

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.982	.999	595

Aggregated CSR Policy

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.289	.891	54

Ethics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.994	1.000	584

5.4.2 Tests of the Inter-coder Reliability

This section checks the reliability of the two coders used in collecting CSR disclosure items from the annual reports. The first coder collected 150 samples and the second coder collected 50 samples. Testing of the reliability is conducted using Krippendorff's alpha (KALPHA). Table 7 below shows the results of the KALPHA reliability estimate for collecting CSR disclosure index units.

Table 7: KALPAH Reliability Estimate for CSRDI

KALPHA for CSRDI	Alpha	LL95%CI	UL95%CI	Units	Observers	Pairs
Ordinal	0.7107	0.5371	0.8553	91	2	91
Probability (q) of failure to achieve an alpha of at least alphamin:						
alphamin	**q**					
0.9000	0.9928					
0.8000	0.8869					
0.7000	0.4198					
0.6700	0.2991					
0.6000	0.1231					
0.5000	0.0101					
Number of bootstrap samples:						
18000						
Judges used in these computations:						
OBS1	OBS2					
Observed Coincidence Matrix						
126.00	10.00					
10.00	36.00					
Expected Coincidence Matrix						
101.44	34.56					
34.56	11.44					
Delta Matrix						
0.00	8281.00					
8281.00	0.00					
Rows and columns correspond to following unit values						
0.00	1.00					

The KALPAH reliability estimate result shows a minimum reliability between the two coders as the value of alpha is 0.7107, which means that the inter-coder reliability between two observers is approximately 71 percent (Downe-Wamboldt 1992). However, the bootstrapping result indicates that there is 41.98 percent chance that the KALPHA would be below 0.7 if the whole population were tested. This is not quite a positive result as there is almost 50 percent chance that the reliability would drop when testing the entire population.

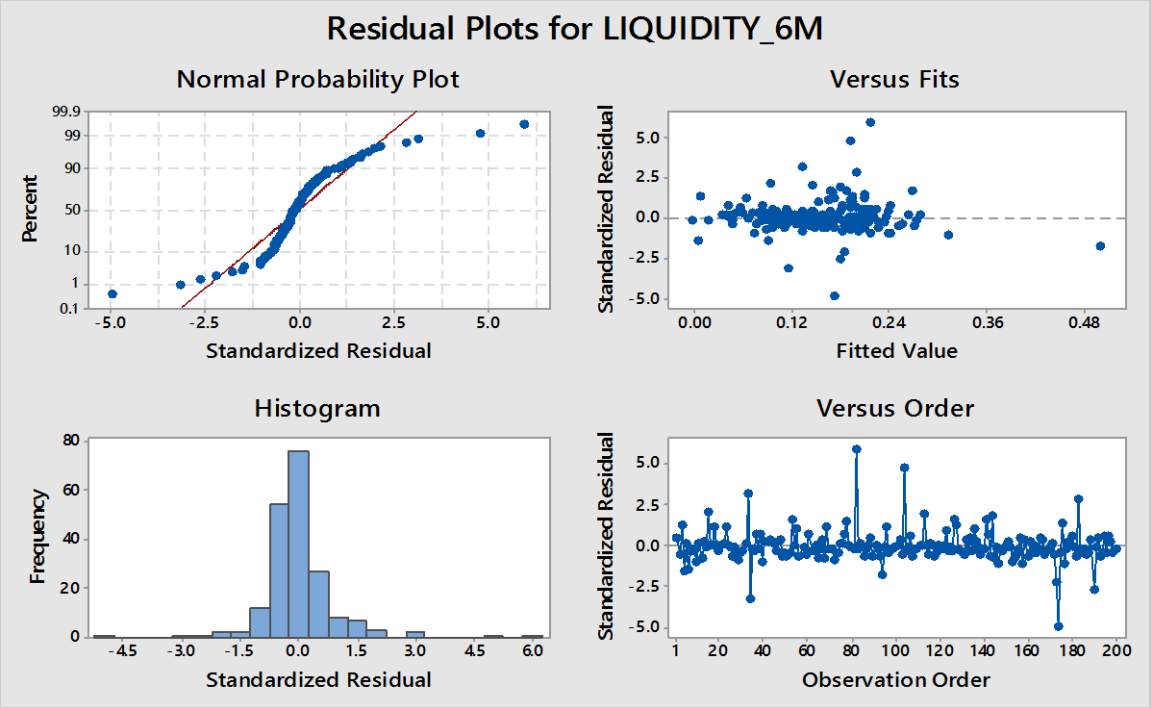
5.5 Tests of Regression Assumptions

This section reports the results of tests of regression assumptions for the two regression models used in order to ensure the reliability of the results. The assumptions include normality, constant variance and independence of data. The normality and constant variance are checked by analysing residual plots. Independence is already likely to be met as the stratified random sampling was conducted.

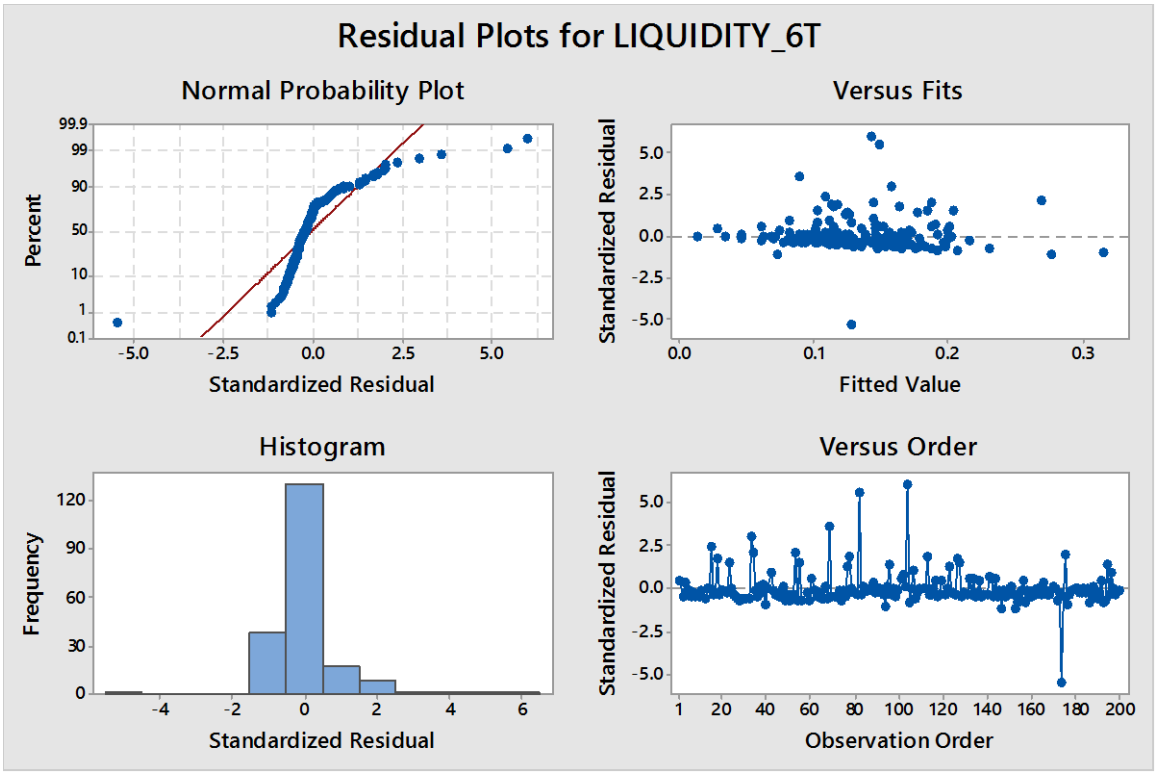
Figure 2 and Figure 3 below report residual plots for Model 1 and Model 2 respectively. Figure 2 and Figure 3 show that the assumption of normality and constant variance seem, in general, to be met. Although the graphs show a number of outliers in both figures, the histograms of residuals show that the distributions of data might not be right skewed overall. The best measure in both Model 1 and Model 2 to meet the assumption is likely to be AT CSRDI and AT CSRDWAV as these two show the best fit line in the normal probability plot graphs with a less dispersion of outliers in residual graphs. The outliers were excluded from the samples and the regression analysis was re-conducted. However, the overall regression results were essentially the same.

Figure 2: Residual Plots for Model 1 (DV=DISCI)

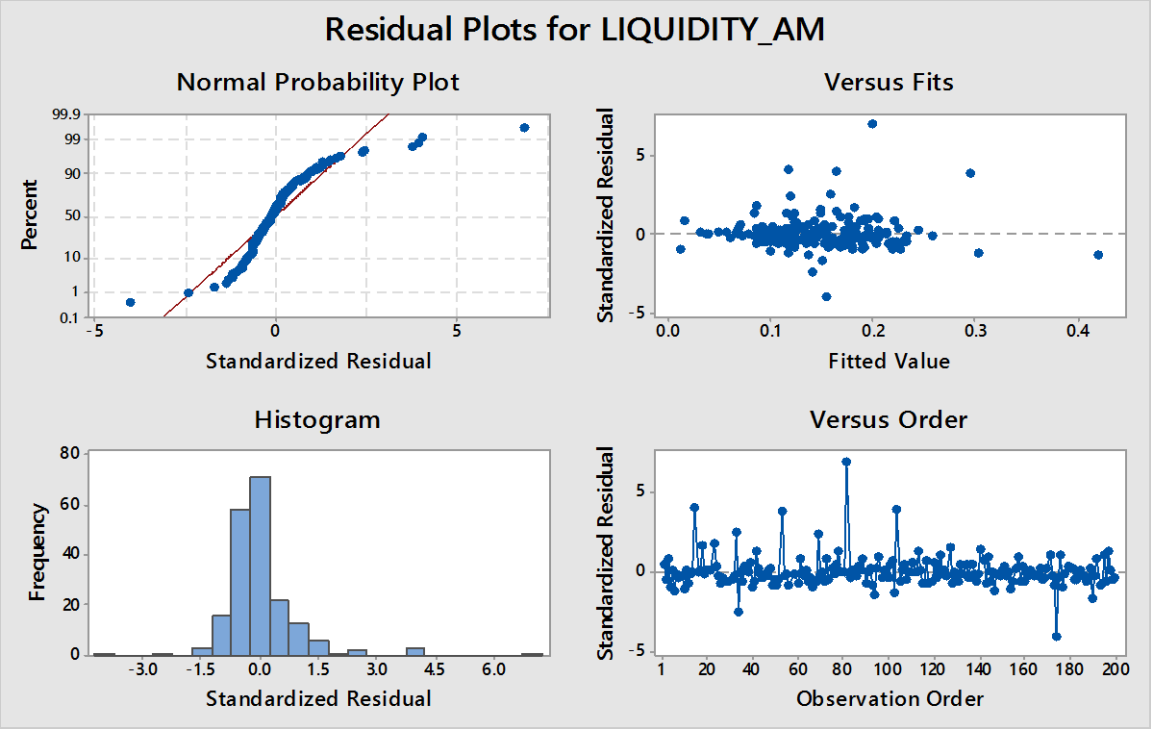
1) H1 6M CSRDWAV: The line does not match well enough with the best fit line because of the various outliers as can be seen in versus fits and versus order graphs. However, in the histogram, it can be seen that data is at least not right-skewed.



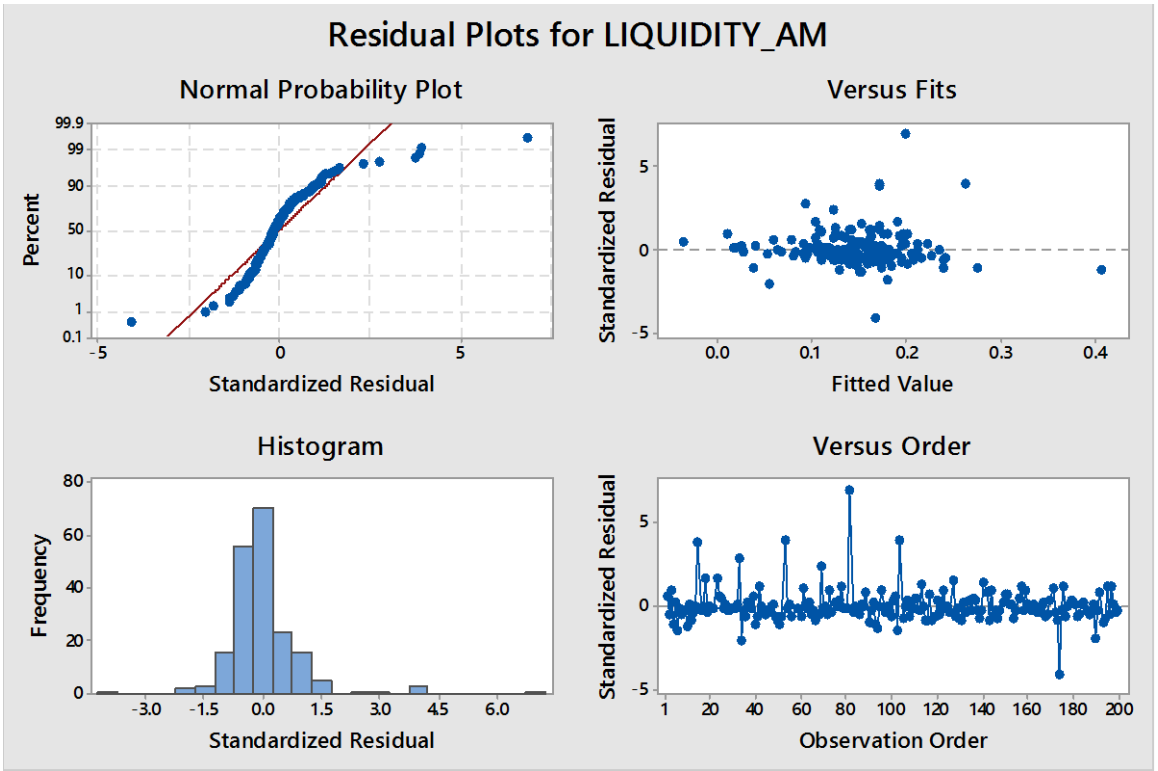
2) **H1 6T CSRDWAV:** Observations seem to be made reasonably well enough as can be seen in versus fits and versus order graphs. Histogram shows that data is not right-skewed. However, the line does not match well enough with the best fit line in the normal probability plot graph.



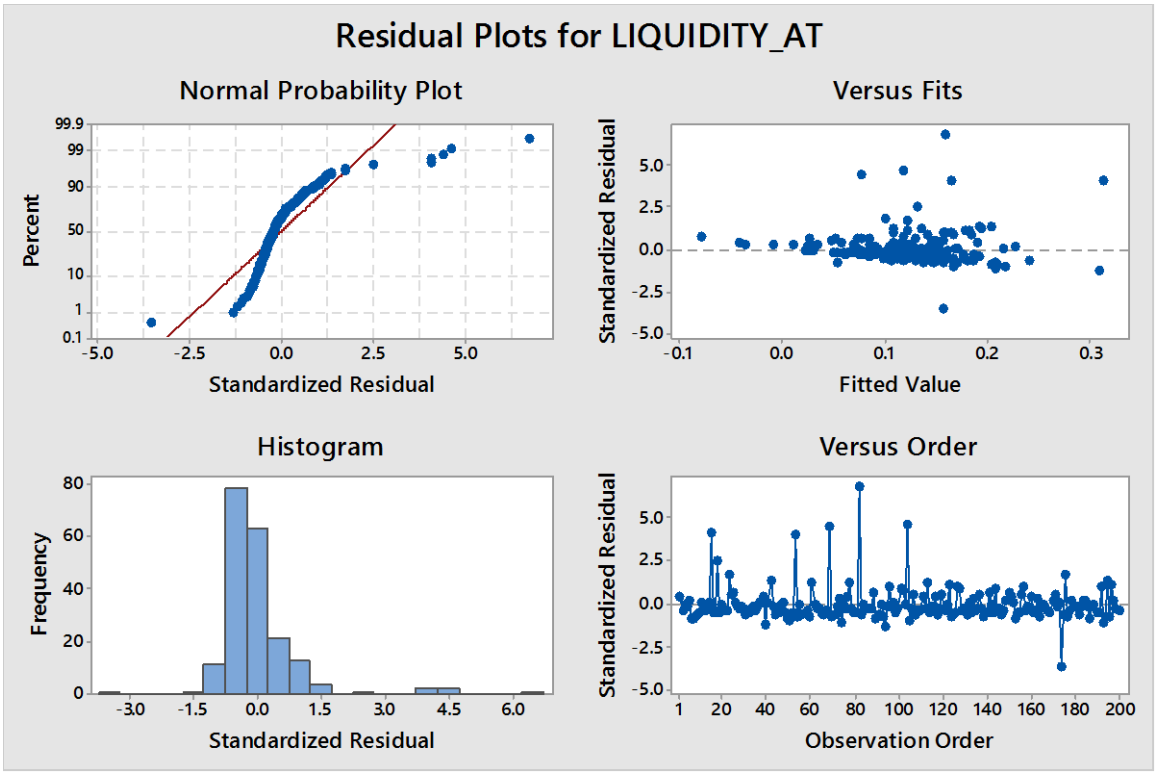
3) H1 AM CSRDWAV: The line does not match well enough with the best fit line because of the various outliers as can be seen in versus fits and versus order graphs. However, in the histogram, it can be seen that data is at least not right-skewed.



4) H1 AM CSRDI: The line does not match well enough with the best fit line because of the various outliers as can be seen in versus fits and versus order graphs. However, in the histogram, it can be seen that data is at least not right-skewed.



5) H1 AT CSRDI: The line does not fit the best line perfectly in the normal probability plot. However, observations were made reasonably well as there are not many outliers in versus fits and versus order graphs. Histogram shows that data is not right-skewed.



6) H1 AT CSRDWAV: The line does not match well enough with the best fit line because of the various outliers as can be seen in versus fits and versus order graphs. However, in the histogram, it can be seen that data is at least not right-skewed.

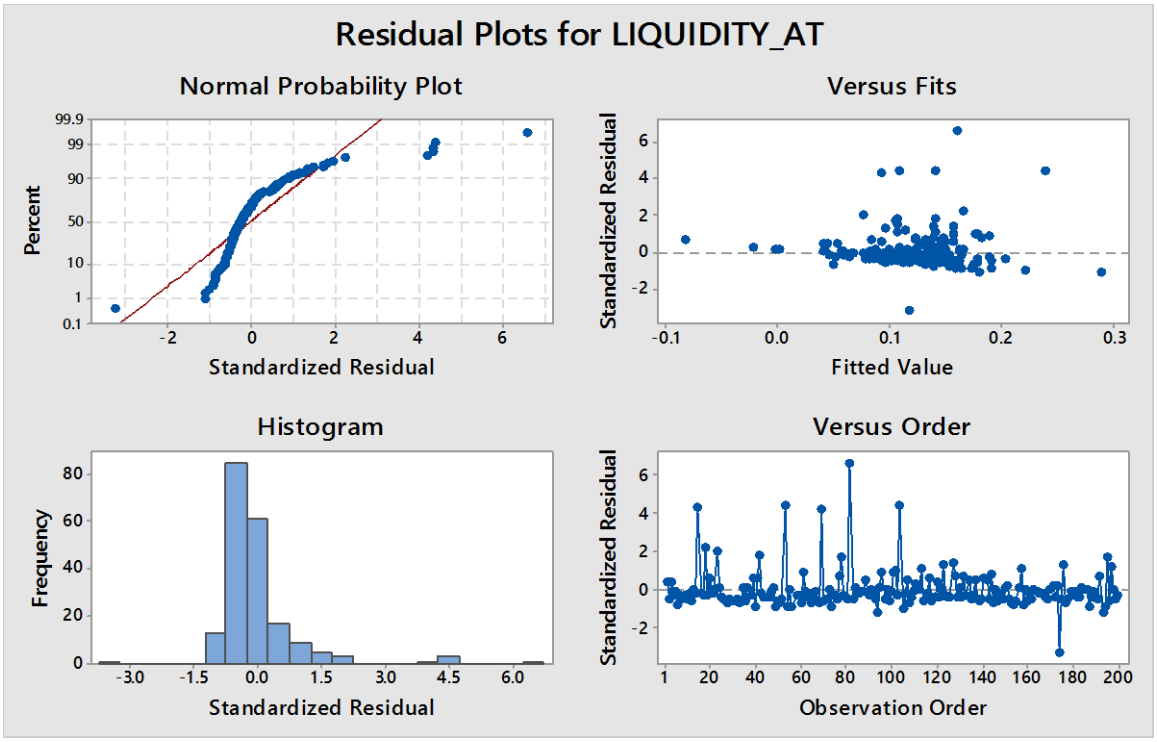
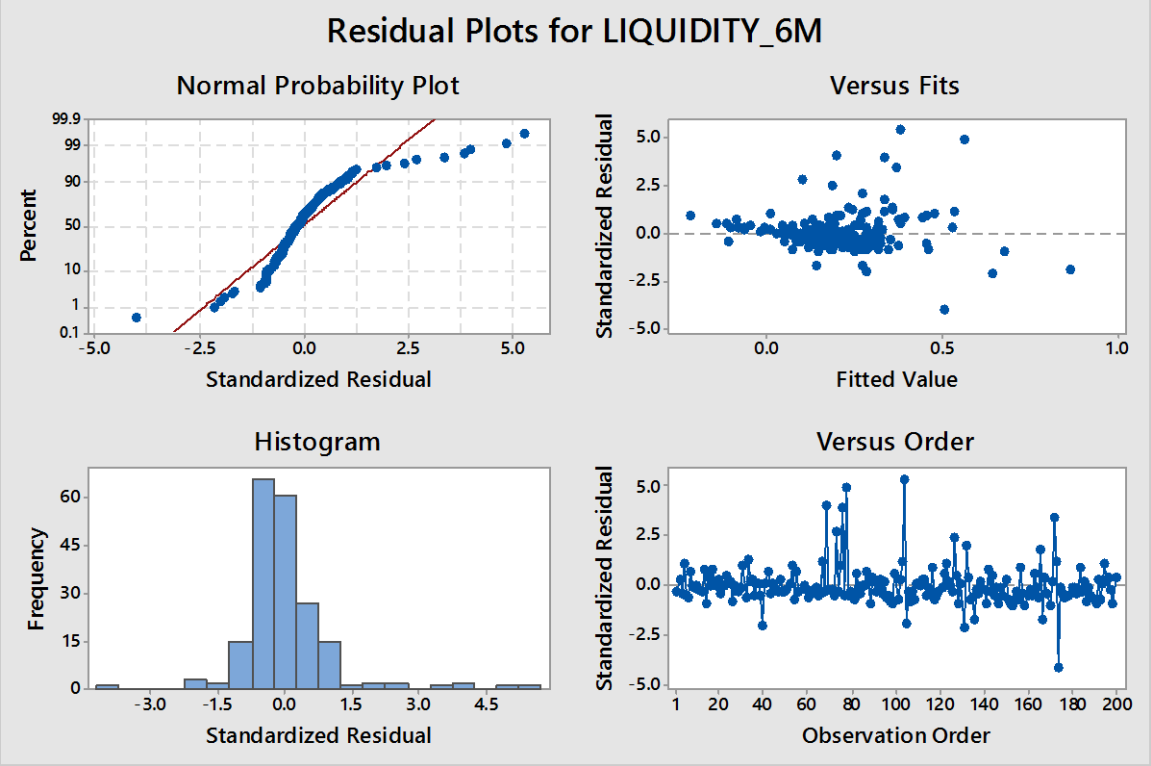
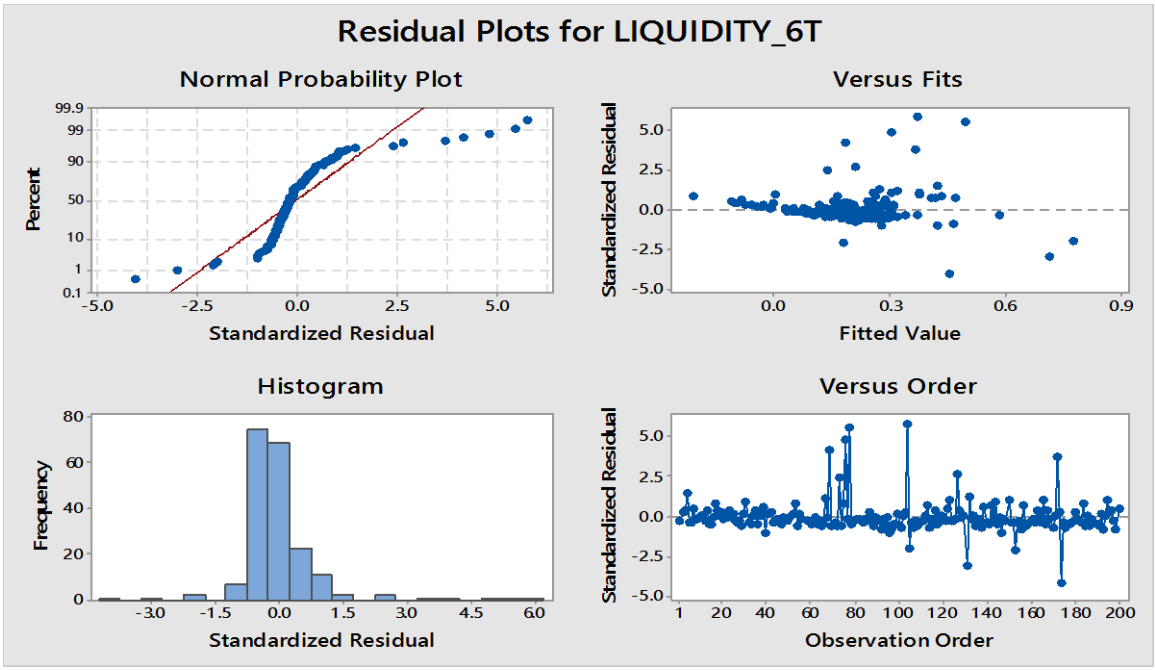


Figure 3: Residual Plots for Model 2

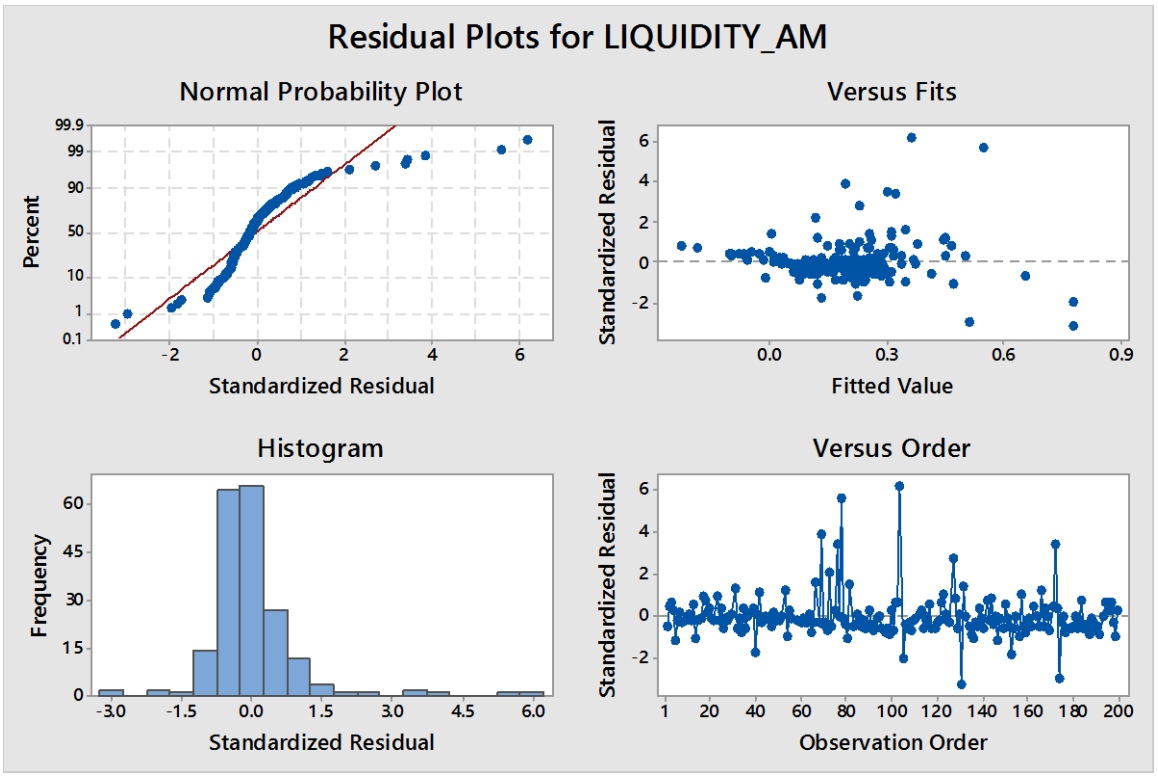
1) H2 6M CSRDWAV: The line does not match well enough with the best fit line because of the various outliers as can be seen in versus fits and versus order graphs. But data is at least not right-skewed as can be seen in the histogram.



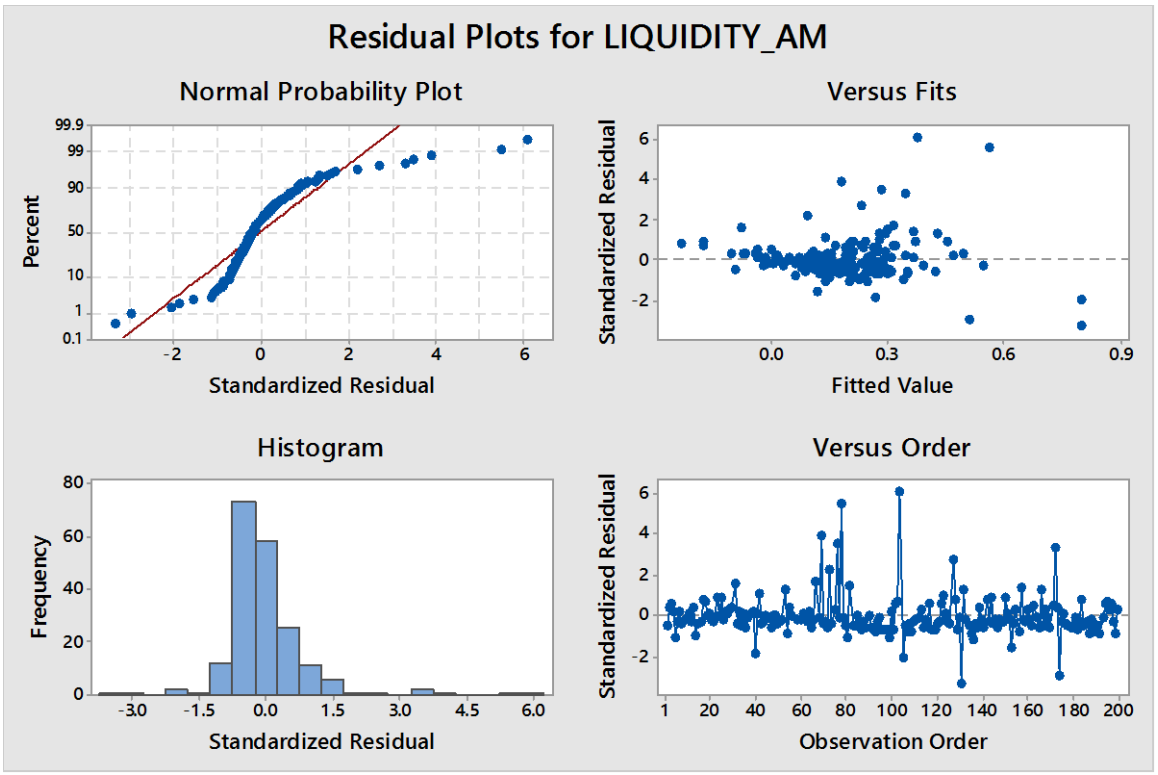
2) H2 6T CSRDWAV: Observations seem to be made reasonably well enough as can be seen in versus fits and versus order graphs. Histogram shows that data is not right-skewed. However, the line does not match well enough with the best fit line in the normal probability plot graph.



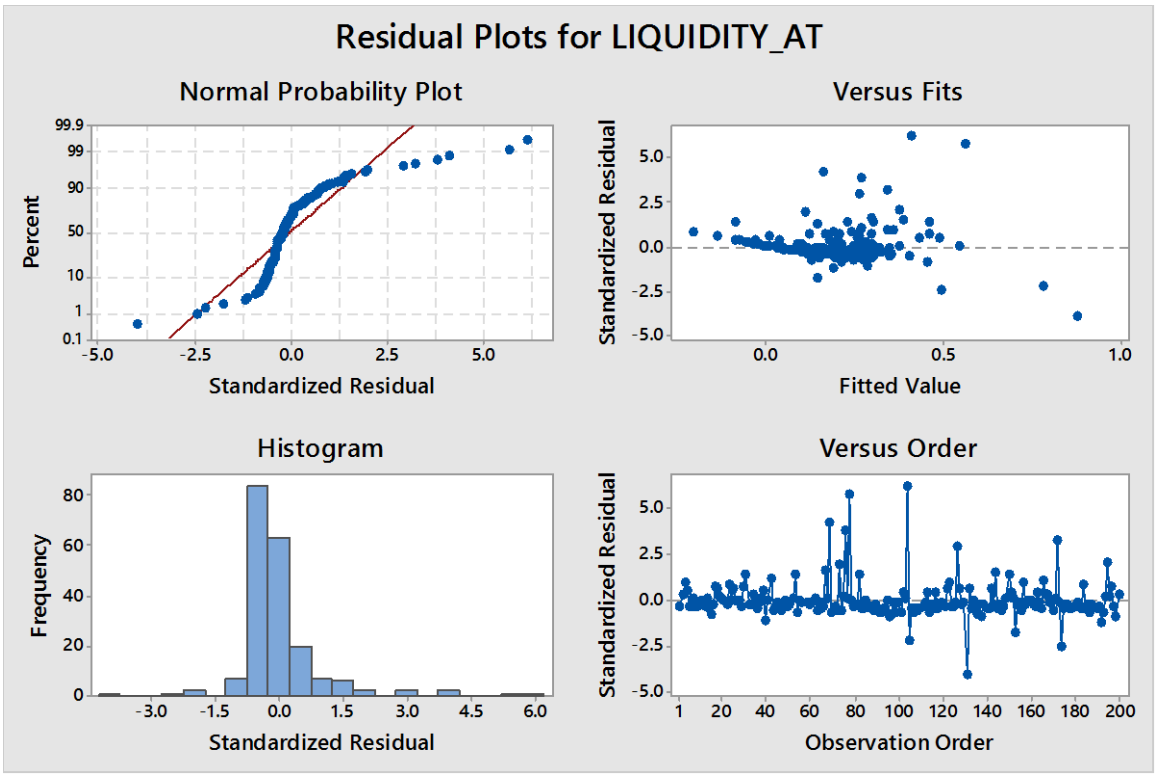
3) H2 AM CSRDWAV: The line does not match well enough with the best fit line because of the various outliers as can be seen in versus fits and versus order graphs. But data is at least not right-skewed as can be seen in the histogram.



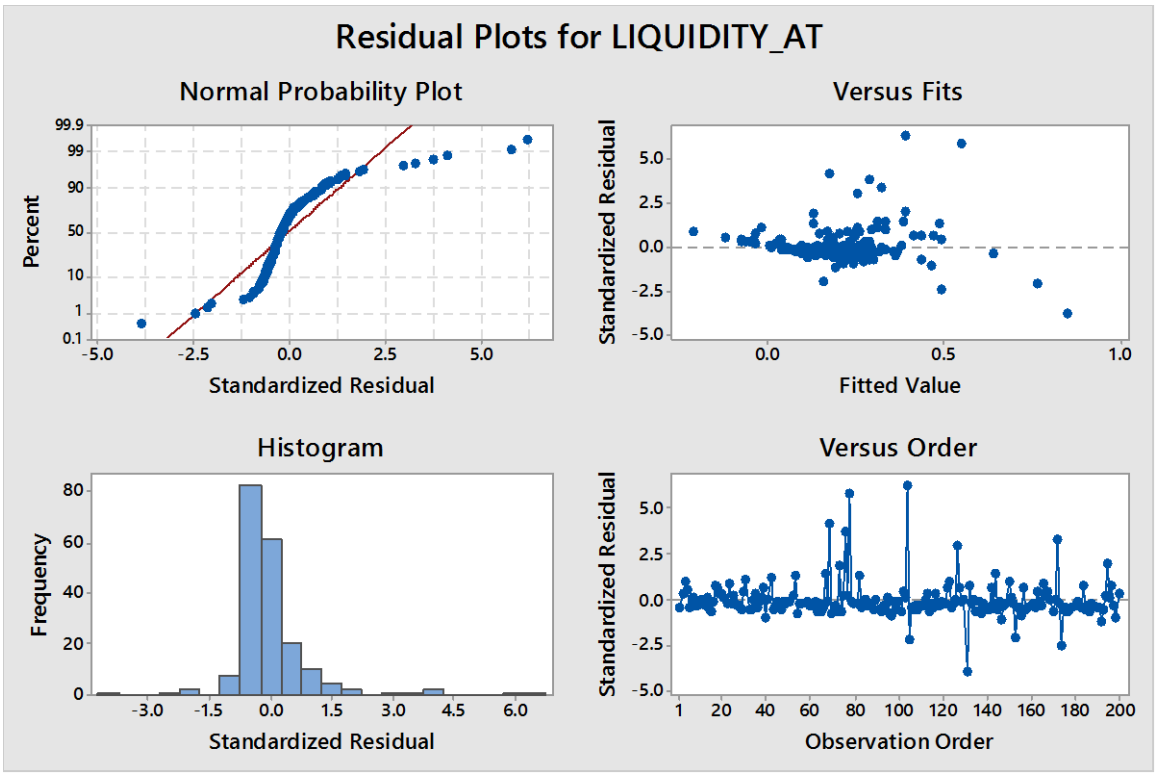
4) H2 AM CSRDI: The line does not match well enough with the best fit line because of the various outliers as can be seen in versus fits and versus order graphs. But data is at least not right-skewed as can be seen in the histogram.



5) H2 AT CSRDI: The line does not match well enough with the best fit line because of the various outliers as can be seen in versus fits and versus order graphs. But data is at least not right-skewed as can be seen in the histogram.



6) H2 AT CSRDWAV: The line does not fit the best line perfectly in the normal probability plot. However, observations were made reasonably well as data are gathered around the fit line except for some outliers in versus fits and versus order graphs. Histogram shows that data is not right-skewed.



CHAPTER SIX

RESULTS

6.1 Introduction

This chapter reports the results of the regression models used to test the hypotheses developed in Chapter 3. Section 6.2 provides the results of the multiple regression models and a discussion of the results. Section 6.3 reports the results of sensitivity analyses for potential endogeneity and causality adjustments. Section 6.4 provides a summary of the chapter.

6.2 Results of Regression Models

The first regression model (Model 1) examines the association between market liquidity and CSR disclosure. The second regression (Model 2) examines the association between CSR disclosure and market liquidity. In order to enhance the reliability of the results, four different measures (6M, 6T, AM, AT) are used to estimate market liquidity and two different measures (CSRDI, CSRDWAV) are used to estimate CSR disclosure. From the residual plots in Figure 2 and Figure 3 in Chapter 5, the best measure in Model 1 is AT CSRDI when dependent variable is CSRDI. The best measure in Model 2 is AT CSRDWAV when dependent variable is AT. Therefore, the regression analysis is conducted for these two types of measures.

6.2.1 Results of Model 1 Regression

Hypothesis 1: There is a significant negative association between the level of market liquidity and CSR disclosure.

The expected relation between the level of market liquidity and CSR disclosure (H1) is supported. The results in Table 8-1 below indicate that the level of market liquidity is significantly related to the extent of CSR disclosure (β_1 = -0.080, p = 0.050). This suggests that when firms have a lower level of market liquidity, the level of CSR disclosure is likely to increase. However, the explanatory power of the model is somewhat weak as the R-square is only 16.9%. This means that there is about 17% chance that this model explains firm CSR disclosure behaviour when firms have a lower level of market liquidity.

Table 8 Results of Model 1 AT CSRDI

Model 1: DISCI = $\alpha + \beta_1$LIQUIDITY + β_2PROFITABILITY+ β_3LEV + β_4FIN + β_5COMPETITION + β_6MB + β_7INDEP + β_8VAREARN + β_9AGE + β_{10}INDUSTRY + ε

Model 1 AT CSRDI			
	Coeff't	**t-stat.**	**P-value**
Intercept	0.146	4.747	.000
Independent variable			
LIQUIDITY_AT	-.080	-1.988	.050
Control variables			
PROFITABILITY	.005	1.388	.169
LEV	-.002	-.213	.832
FIN	.009	.617	.539
COMPETITION	.001	.747	.457
MB	-.001	-1.080	.283
INDEP	-.002	-.069	.945
VAREARN	.007	1.254	.213
AGE	.008	1.099	.275
R-Square	0.169		
F-stat.	2.118		
P-value	0.035*		

* denotes the significance at 1% level

Where:

DISCI_CSRDI = CSR disclosure measured by the ratio of CSR index

LIQUIDITY_AT = Annual average of daily quoted spread divided by trading days

PROFITABILITY = total return on assets

LEV = leverage multiplier

FIN = financing activity

COMPETITION = Herfindahl-Hirschman Index multiplied by -1.

MB = the market-to-book ratio

INDEP = level of independence of the board of directors

VAREARN = the natural logarithm of the standard deviation of three-year average earnings per share (EPS)

AGE = the natural logarithm of firm age

α = constant term

β_1 - β_{10} = coefficients of variables

ε = error term

6.2.2 Results of Model 2 Regression

Hypothesis 2: There is an insignificant negative association between CSR disclosure and the level of market liquidity.

The expected positive relation between the extent of CSR disclosure and the level of market liquidity is not supported as can be seen in Table 9 below. The results reported in Table 9-1 below indicate that the extent of CSR disclosure is not significantly related to the level of market liquidity (β_1 = -0.034, p = 0.219). This suggests that when firms engage in CSR disclosure, it does not necessarily mean that the level of market liquidity would increase. The explanatory power of this model is also weak as the R-square is only 21.4%. This means that

there is 21.4% chance that this model explains the level of market liquidity when firms engage in CSR disclosure behaviour.

Table 9 Results of Model 2 AT CSRDWAV

Model 2: $LIQUIDITY\_AT = \alpha + \beta_1 DISCI\_CSRDWAV + \beta_2 VOLU + \beta_3 BETA + \beta_4 LEV + \beta_5 MB + \beta_6 SIZE + \beta_7 AGE + \varepsilon$

Model 2 AT CSRDWAV			
	Coeff't	**t-stat.**	**P-value**
Intercept	954	3.829	.000
Independent variable			
CSRDWAV	-.034	-1.233	.219
Control variables			
VOLU	.015	1.118	.265
BETA	.214	3.295	.001
LEV	.011	.439	.661
MB	.028	2.638	.009
SIZE	-.049	-5.334	.000
AGE	-.015	-.624	.534
R-Square	.214		
F-stat.	7.099		
P-value	.000*		

* denotes the significance at 1% level

Where:

DISCI_CSRDWAV = CSR disclosure measured by the absolute value of word count

LIQUIDITY_AT = Annual average of daily quoted spread divided by trading days

VOLU = the natural logarithm of annual average of daily trading volume

BETA = systematic risk

LEV = leverage multiplier

MB = the market-to-book ratio

SIZE = market capitalization

AGE = the natural logarithm of firm age

α = constant term

β_1 - β_7 = coefficients of variables

ε = error term

6.3 Additional Tests

This section provides the results of additional tests of Model 1 and 2 using alternative measures. The additional tests are motivated by differences found in residual plots in Figure 2 and Figure 3 in Chapter 5.

6.3.1 Results of Additional Test for Model 1

The result of additional testing for Model 1 using AT CSRDWAV measure is not significant (β_1 = -0.328, p = 0.312) as can be seen in Table 10 indicating that there is no significant relation between the level of market liquidity and the extent of CSR disclosure. The explanatory power of the model is also weak with an R-square of only 7.5%. The R-square score is lower than the score of the main model, AT CSRDI (R-square = 16.9%) as outlined in Section 6.2.1.

Table 10 Results of Additional Test for Model 1

Model 1: DISCI_CSRDWAV = $\alpha + \beta_1$LIQUIDITY_AT + β_2PROFITABILITY + β_3LEV + β_4FIN + β_5COMPETITION + β_6MB + β_7INDEP + β_8AGE + ε

Model 1 AT CSRDWAV			
	Coeff't	**t-stat.**	**P-value**
Intercept	7.490	19.703	.000
Independent variable			
LIQUIDITY_AT	-.328	-1.014	.312
Control variables			
PROFITABILITY	-.083	-1.642	.102
LEV	.195	1.009	.314
FIN	.010	.038	.970
COMPETITION	-.016	-1.913	.057
MB	-.033	-1.106	.270
INDEP	.034	.139	.890
AGE	.020	.293	.770
R-Square	.075		
F-stat.	1.827		
P-value	.075*		

* denotes the significance at 1% level

Where:

DISCI CSRDWAV = CSR disclosure measured by the absolute value of word count

LIQUIDITY_AT = Annual average of daily quoted spread divided by trading days

6.3.2 Results of Additional Test for Model 2

As can be seen in Table 11 below, in the first alternative measure (6M CSRDWAV), the results show that there is an insignificant negative relation between the extent of CSR disclosure and the level of market liquidity (β_1 = -0.030, p = 0.365). In addition, the explanatory power of the model is weak as R-square is 16.7%.

In the second alternative measure (6T CSRDWAV), the results show that there is an insignificant negative relation between the two (β_1 = -0.031, p = 0.322). Similar to the previous measure, the explanatory power of the model is weak as R-square is 17.3%.

In the third alternative measure (AM CSRDWAV), the results show that there is an insignificant negative relation between the two (β_1 = -0.034, p = 0.236). The explanatory power of this model is also weak as R-square is 21.8% although it has the highest explanatory power compared to the other two alternative measures of market liquidity.

Table 11 Results of Additional Test for Model 2

Model 2: $LIQUIDITY = \alpha + \beta_1 DISCI + \beta_2 VOLU + \beta_3 BETA + \beta_4 LEV + \beta_5 MB + \beta_6 SIZE + \beta_7 AGE + \varepsilon$

	6M CSRDWAV			6T CSRDWAV			AM CSRDWAV		
	Coeff't	**t-stat.**	**P-value**	**Coeff't**	**t-stat.**	**P-value**	**Coeff't**	**t-stat.**	**P-value**
Intercept	.866	2.900	.004	.922	3.317	.001	.958	3.698	.000
Independent variable									
CSRDWAV	-.030	-.908	.365	-.031	-.993	.322	-.034	-1.189	.236
Control variables									
VOLU	.004	.250	.803	.011	.687	.493	.011	.792	.430
BETA	.271	3.472	.001	.193	2.655	.009	.245	3.615	.000
LEV	.015	.491	.624	.022	.785	.433	.006	.241	.810
MB	.032	2.486	.014	.034	2.837	.005	.031	2.799	.006
SIZE	-.042	-3.814	.000	-.046	-4.475	.000	-.049	-5.151	.000
AGE	-.039	-1.294	.197	-.029	-1.031	.304	-.020	-.756	.451

R-Square	.167			.173			.218		
F-stat.	5.194			5.432			7.251		
P-value	.000*			.000*			.000*		

* denotes the significance at 1% level

Where:

DISCI_CSRDWAV = CSR disclosure measured by the absolute value of word count

LIQUIDITY_6M = 6 months average of monthly quoted spread

LIQUIDITY_6T = 6 months average of daily quoted spread divided by trading days

LIQUIDITY_AM = Annual average of monthly quoted spread

6.4 Summary

The results presented in this chapter suggest that first, the level of market liquidity is significantly related to the extent of CSR disclosure (β_1 = -0.080, p = 0.050). In other words, when firms have a lower level of market liquidity, firms tend to engage in CSR disclosure behaviour. Additional testing does not support this negative relation between the two (β_1 = -0.328, p = 0.312). The coefficients have significantly changed from -0.080 to -0.328 indicating that if the measure of dependent variable is changed, the robustness of coefficient can be significantly dropped. However, the explanatory power of the additional test (R-square = 7.5%) is weaker than the main model (R-square = 16.9%).

Second, the extent of CSR disclosure is not significantly related to the level of market liquidity (β_1 = -0.034, p = 0.219). In addition, the result indicates that when firms engage in CSR disclosure, the level of market liquidity is likely to decrease, which was not the assumption of Model 2. Additional tests using three alternative measures (6M CSRDWAV, 6T CSRDWAV, AM CSRDWAV) also show similar results indicating that there is an insignificant relation between the extent of CSR disclosure and the level of market liquidity.

CHAPTER SEVEN

CONCLUSION

7.1 Introduction

This study has examined the association between the level of market liquidity and the extent of CSR disclosure focusing on CSR-sensitive firms listed on the ASX. This chapter provides a summary of the results in Section 7.2 and implications and recommendations of the results in Section 7.3. Finally, the limitations of the study and future research directions are discussed in Section 7.4.

7.2 Summary

The results of the data analysis suggest that when firms have a lower level of market liquidity, they are likely to engage in CSR disclosure behaviour. A summary of the results is presented in Table 8,9,10, and 11 in Chapter 6.

Using two models to examine the association between firm CSR disclosure behaviour and the level of market liquidity, different types of measures of both CSR disclosure (CSRDI, CSRDWAV) and market liquidity (AT, AM, 6M, AT) are used. Model 1 examined the level of market liquidity and the extent of CSR disclosure. The result shows that there is a significantly negative relation between the two. In Model 2, the relation between the extent of CSR disclosure is not found to be associated with market liquidity.

A significant relation between the level of market liquidity and firm CSR disclosure

behaviour is found in the main measure of the extent of CSR disclosure (AT CSRDI, p = 0.050) in Model 1. The relation is not supported by the alternative measure of the extent of CSR disclosure (AT CSRDWAV) as it is not significant compared to the main measure (p = 0.312). In other words, if the measure of dependent variable was changed, Model 1 would not prove the relation between the level of market liquidity and the extent of CSR disclosure.

In Model 2, there is no significant relation between the extent of CSR disclosure and market liquidity for all four measures of AT CSRDWAV, AM CSRDWAV, 6M CSRDWAV, and 6T CSRDWAV. Although the main measure (AT CSRDWAV) shows the highest significance (p = 0.219) among the other measures, it is still not a significant result as p-value is greater than 0.05.

7.3 Implications and Recommendations

This study provides the first evidence on the relation between the level of market liquidity and firm CSR disclosure behaviour in Australia. The results point to both practical implications and theoretical recommendations.

First, the practical implication of this study stems from examining the relation between the level of market liquidity and the extent of CSR disclosure. This study did not find evidence supporting Model 2 as the result shows that there is no significant relation between the extent of CSR disclosure and market liquidity. This can be an implication that firm CSR disclosure behaviour might not be an effective strategy for firms to increase the level of market liquidity. In addition, firm CSR disclosure behaviour may not be an efficient signal of firm's market liquidity to investors in the capital market.

However, the result of Model 2 may strengthen the result of Model 1 as an endogeneity problem between Model 1 and Model 2 is not of a concern any more. The possible endogeneity issue was that if CSR disclosure decision is motivated by a firms desire to improve lower market liquidity, then a negative relation can be detected. This is supported by Model 1. In contrast, if a firm with a higher level of market liquidity has more CSR disclosures, then a positive relation can be found. However, this inverse relation is not supported by Model 2. Therefore, it can be seen that market liquidity might be a potential driver for firm CSR disclosure behaviour supported by Model 1. In other words, firm CSR disclosure behaviour is an important legitimizing strategy for firms with lower market liquidity.

Second, this study represents an important implication for CSR-sensitive firms to choose CSR disclosure behaviour as their legitimizing strategy to survive in the capital market. The study explores firm CSR disclosure behaviour in relation to market liquidity focusing particularly on CSR sensitive firms while most prior studies have focused on firms in general. Therefore, evidence of a significant relation between the level of market liquidity and firm CSR disclosure behaviour in Model 1 implies that CSR-sensitive firms are more likely to engage in CSR disclosure behaviour when they face with a negative market response i.e. a lower level of market liquidity. This firm CSR disclosure behaviour will enable firms to continue their existence in the capital market and also enable them to be a good corporate citizen i.e. from a strategic legitimacy perspective.

Third, the study contributes to the literature by providing different proxies for market liquidity and CSR disclosure. This study employs four different proxies to measure market liquidity (6M, 6T, AM, AT) and two different proxies to measure CSR disclosure (CSRDI,

CSRDWAV) in order to determine the most appropriate measure. The results show that the best measure is AT CSRDI in Model 1 and AT CSRDWAV in Model 2. This implies that AT (annual market liquidity data divided by trading days) is likely to be the most reliable proxy over other types of market liquidity measures such as AM, 6M, or 6T. When testing Model 2, CSRDWAV is found to be a more reliable proxy than CSRDI.

This study therefore contributes to the literature by providing both a theoretical underpinning and new empirical evidence in relation to firm CSR disclosure behaviour, in particular, in relation to the level of market liquidity. The results of this study are of particular importance to scholars, professionals, and regulators who are interested in investigating motivation of firm CSR disclosure behaviour in relation to the capital market.

7.4 Limitations and Future Research Opportunities

There are a number of limitations related to this study and are mostly related to the measurement of variables. These can be further considered in future studies.

First, using the quoted spread might not be the most appropriate surrogate for market liquidity. To capture investors' interests in buying and selling shares, trading volume might be a more appropriate proxy as it can represent an immediacy of execution in transactions (Bar-Yosef & Prencipe 2013). Trading volume can show its relation with information asymmetry. When there is a higher level of trading volume, the level of information asymmetry decreases. This relation might be better supported by legitimacy and signalling theory (Bar-Yosef & Prencipe 2013; Easley, Kiefer & O'hara 1996; Leuz & Verrecchia 2000). When considering a shareholder as a key decision maker in firms, agency theory can be an aid as this theory will

emphasize information disparity between an agent (a manager) and a principle (a shareholder) stemming from different self-interests between them (Jensen & Meckling 1976). Therefore, trading volume as a proxy for market liquidity based on different theories can be used for future studies.

Second, CSR disclosure can be examined both quantitatively and qualitatively. In this study, CSR disclosure is only examined quantitatively and did not consider the effect of the quality of CSR disclosure on market liquidity. To measure the quality of CSR disclosure, three different types of content analysis can be conducted, namely, conventional, directed, and summative content analysis (Zhang & Wildemuth 2009). For future study, directed content analysis can be used. The directed content analysis starts from theoretical underpinning of the study and codes are derived from the theory (Hsieh & Shannon 2005). In the data analysis process, codes are defined both before and during the coding process (Zhang & Wildemuth 2009). As CSR disclosure is measured quantitatively in this current study, it can be measured qualitatively using other types of content analysis in the future study.

Third, there are a number of alternative units of analysis which might be more reliable than word count. Yi (2010) argues that word count is not a reliable measure as it does not capture the actual meaning in the text. Gray, Kouhy and Lavers (1995b) also argue that sentence is a more reliable measure than word as it transmits proper information effectively than words. Furthermore, most of the social and environmental reporting literature uses "sentence as the basis for coding decisions" (Guthrie et al. 2004, p. 16). Guthrie and Abeysekera (2006) suggest that paragraph as a unit of analysis is more reliable than other measures as it provides a syntactic construction from the text providing a complete context. Therefore, more reliable units of analysis can be used in the future study.

Fourth, there is a limitation of using only one year of CSR disclosure in 2013 financial year. It cannot be actually said that the level of CSR disclosure in the 2013 financial year has been increased or not from the previous financial year. However, this measure requires another set of CSR disclosure data to be collected for the 2012 financial year. In this study, gathering another data set for 2012 was not possible due to the timeframe of this project. Therefore, CSR disclosure items for the 2012 financial year could be collected to examine changes in the level of disclosures over time in the future studies.

Last, the results of the study have limited ability to be generalized to companies in other GICS sectors. As this study only examines CSR-sensitive firms in Australia, the results cannot be generalised to firms that are not CSR-sensitive. Therefore, future studies could investigate firms in all GICS sectors in order to increase the generalizability of the results of this study.

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Appendix 1

The CSR Dimensions defined. Source Dahlsrud (2008, p. 5)

Dimension	Dimension score	Dimension ratio (%)
The stakeholder dimension	1213	88
The social dimension	1213	88
The economic dimension	1187	86
The voluntariness dimension	1104	80
The environmental dimension	818	59

Appendix 2

The Guideline of Global Reporting Initiative (2014, p. 9)

Table 1: Categories and aspects in the guidelines

Category	**Economic**	**Environmental**		
Aspects	Economic Performance Market Presence Indirect Economic Impacts Procurement Practices	Materials Energy Water Biodiversity Emissions Effluents and Waste Products and Services Compliance Transport Overall Supplier Environmental Assessment Environmental Grievance Mechanisms		
Category	**Social**			
Sub-categories	Labor Practices and Decent Work	Human Rights	Society	Product Responsibility
Aspects	Employment Labor/Management Relations Occupational Health and Safety Training and Education Diversity and Equal opportunity Equal remuneration for women and men Supplier assessment for labor practices Labor practices Grievance mechanisms	Investment Non-discrimination Freedom of Association and Collective Bargaining Child Labor Forced or Compulsory Labor Security Practices Indigenous Rights Assessment Supplier human rights assessment Human rights Grievance mechanisms	Local communities Anti-corruption Public policy Anti-competitive Behavior Compliance Supplier Assessment for Impacts on Society Grievance mechanisms for Impacts on Society	Customer Health and Safety Product and Service Labeling Marketing Communications Customer Privacy Compliance

Appendix 3

Source: Golob and Bartlett (2007, p. 6)

	Area of CSR	Type of instrument
Corporations Act 2001, S299(1)(f)	Required to provide details of breaches of environmental laws and licenses in annual report	Legislation
Corporations Act 2001, ss1013(A) to (F)	Providers if financial products with an investment component to disclose the extent that labour standards, or environmental, social or ethical considerations are taken into account in investment decision making	Legislation
Audit reform and corporate disclosure (CLERP9)		
Parliamentary Joint Committee on corporations and financial services, inquiry into corporate responsibility and triple bottom line reporting	Inquiry into corporate responsibility and triple bottom line reporting for incorporated entities in Australia (report released March 2006)	Legislation
Industry codes • UN Global Compact • Australian minerals industry environmental code of conduct • Chemical industry's responsible care • Code of banking practice		Binding to signatory organizations
Assessment devices		
Implementation of basic workplace rights (SA8000)	Human rights, workers' rights, employee relations, corruption	Voluntary
Reporting and performance assurance (AA1000)	Complements GRI guidelines	Voluntary
Procedures for environmental management (ISO 14000)	Environment	Voluntary
Reporting guidelines and frameworks		
Global Reporting Initiative 2002 Sustainability Reporting Guidelines (GRI)		Voluntary
World Business Council for Sustainable Development (WBCSD)		Voluntary

Appendix 4

Various Market Liquidity Measures

	Width	Depth	Immediacy	Resiliency
Trade-based	Effective spread	Trading volume Trading frequency	Sec. between trades Turnover Trades per order	Liquidity ratio
Order-based	Quoted spread	Depth, inner quotes Price slope Tick slope	Order book symmetry Fill time	

Source: Chollete, Næs and Skjeltorp (2006, p. 7)

Appendix 5

CSR Checklist adopted from Young and Marais (2012, p. 440)

Coding Framework for CSR Reporting				No.	1
				Industry Type	Energy
				ASX Code	ACJ (Formal Code: TPL)
				Name of Co.	AFRICAN CHROME FIELDS LIMITED (Former Names: TPL Corporation Limited)

CSR domain of actions (sub-categories)	CSR domain of actions (detailed categories)	Items	CSR actions	Type of Analysis	
				CSR Index (0/1)	Word Count
Labour	**Fight against discrimination**	**1**	– Diversity (gender, women employees, women in senior position or on the board, anti-discrimination, age, qualification, skills, expertise, behaviour, characteristics, education, race)	**1**	**226**
		2	– Disabilities policies death, disability, redundancy	**0**	**0**
		3	– Equal opportunity bullying, discrimination,	**0**	**0**

			harassment.		
	Working conditions	**4**	– Working conditions (health, safety, zero harm, a full recovery, eliminate risks, prevent injuries, prevent incidents, commitment to safety)	**0**	**0**
		5	– Risk management for employees (charter, processes)	**0**	**0**
		6	– Work/life balance	**0**	**0**
	Career development	**7**	– Education of employees/human development, training/careers	**0**	**0**
		8	– Responsible management of employment (employment, employment relationships, changes in number of employees, restructuring)	**0**	**0**
	Industrial relations	**9**	– Freedom of association	**0**	**0**
		10	– Collective bargaining	**0**	**0**
		11	– Employee share plan (option plan, option arrangements, option scheme)(share-based payment)	**1**	**898**
		12	– Effective two-way communications with all employees	**0**	**0**
Ethics		**13**	– Code of conduct or ethics	**1**	**155**
		14	– Whistleblower function	**0**	**0**
		15	– Child and forced labour	**0**	**0**
		16	– Protection of other human rights	**0**	**0**
Community		**17**	– Health programs	**0**	**0**
		18	– School/education programs	**0**	**0**
		19	– Water projects	**0**	**0**
		20	– Development of local	**0**	**0**

			employment		
		21	– Community infrastructure assistance (labor, supplies, monetary)	**0**	**0**
		22	– Philanthropy (donation)	**0**	**0**
Environment	**Prevention of pollution**	**23**	– Water pollution prevention(contamination)	**0**	**0**
		24	– Air pollution prevention	**0**	**0**
	Climate change mitigation and action	**25**	– Global warming (emissions reduction initiatives)	**0**	**0**
		26	– Ozone depletion (emission monitoring)	**0**	**0**
	Sustainable resource use	**27**	– Use of scarce resources (water, energy)	**0**	**0**
		28	– Treatments of wastes (waste disposal) /Recycling initiatives	**0**	**0**
	Environmental management	**29**	– Innovative ecological/environmental technologies	**0**	**0**
		30	– Strategic environmental management (SEM)/adoption of standards/ environmental studies/ environmental regulation/ environmental law/environmental audit	**1**	**15**
		31	– Environmental objectives and appraisal	**0**	**0**
		32	– Expenditures on environmental protection	**1**	**115**
		33	– Risk management (in environment)	**0**	**0**
		34	– Accountability about the corporate strategy of production (sites, systems, processes, etc.)	**0**	**0**
		35	– Partnerships on environmental projects	**0**	**0**

	Protection and restoration of the natural environment	**36**	– Reforestation	**0**	**0**
		37	– Restoration of the sites (rehabilitation)	**0**	**0**
		38	– Protection of diversity (biodiversity)	**0**	**0**
		39	– Management of environmental nuisances	**0**	**0**
Business behavior	**Consumer issues**	**40**	– Use of toxic substances	**0**	**0**
		41	– Percentage of R&D budget devolved to CSR	**0**	**0**
		42	– Marketing research about customers' CSR needs or expectations	**0**	**0**
		43	– CSR products (green, ethical, etc.)	**0**	**0**
		44	– CSR advertising towards customers/responsible marketing	**0**	**0**
		45	– Protecting consumers' health and safety	**0**	**0**
		46	– Responsible contractual agreements (with employees, suppliers or about products)	**1**	**220**
		47	– Assistance for poor/incapacitated customers	**0**	**0**
		48	– Information provided to consumers and gauging their satisfaction	**0**	**0**
	Socially responsible purchasing	**49**	– Internal policies (charter)	**0**	**0**
		50	– Setting purchasing criteria (social and environmental)	**0**	**0**
		51	– Applying assurance practices	**0**	**0**
		52	– Managing suppliers relations	**0**	**0**

		53	– Building internal SRP capacity	**0**	**0**
	Fair operating practices	**54**	– Anti-corruption (business units analyzed for corruption risk, employees trained in anti-corruption policies)	**0**	**0**
		55	– Responsible political involvement	**0**	**0**
		56	– Fair competition (avoidance of anti-competitive behavior)	**0**	**0**
		57	– Compliance with (accordance with) regulation/ standards/ principles/ recommendation	**1**	**1219**
Finance and governance	**Finance and CSR**	**58**	– CSR investments	**0**	**0**
		59	– Inclusion in CSR stock indices	**0**	**0**
		60	– Dialog with CSR rating agencies	**0**	**0**
	Principles of governance	**61**	– Accountability towards stakeholders (take into account the reasonable expectations of stakeholders)	**0**	**0**
		62	– Investor relations	**0**	**0**
		63	– Respect of governance principles	**0**	**0**
		64	– Shareholders communication policy (encouraging participation)	**1**	**30**
Aggregated CSR policy	**Formalization of the CSR policy**	**65**	– Strategic intent toward CSR expressed by the CEO or the Chairman	**0**	**0**
		66	– Definition of CSR objectives	**0**	**0**
		67	– Expression of CSR in core values of business	**0**	**0**
		68	– Definition of CSR actions	**0**	**0**
		69	– Evaluation of improvements in CSR	**0**	**0**

			actions		
		70	– Evaluation of CSR outcomes	**0**	**0**
		71	– Evaluation of the impacts of the CSR policy on stakeholders	**0**	**0**
		72	– Independent review of the CSR policy	**0**	**0**
	Organizational structure of CSR	**73**	– Presence of a top manager in charge of CSR (or sustainable development) on the board	**0**	**0**
		74	– Sustainability committee on the board	**0**	**0**
		75	– Existence of a CSR department	**0**	**0**
		76	– CSR charter	**0**	**0**
	CSR systems	**77**	– Training program for the corporate employees in CSR	**0**	**0**
		78	– Training programs for the corporate stakeholders in CSR	**0**	**0**
		79	– Rewarding CSR at the executive level	**0**	**0**
		80	– Rewarding CSR for corporate managers	**0**	**0**
		81	– Existence of functional or cross departmental structures towards CSR	**0**	**0**
		82	– Building of a socially responsible culture among the employees (and supported by the CEO)	**0**	**0**
		83	– Implementation/use of standards	**0**	**0**
		84	– Support of CSR internal entrepreneurship	**0**	**0**
	Dialog with stakeholders	**85**	– Involvement of the employees in the construction/ evaluation of the CSR communication (reporting)	**0**	**0**
		86	– Involvement of the external stakeholders in the construction/evaluation of	**0**	**0**

			the CSR communication (reporting)		
		87	– Involvement of the employees in the CSR audit/control of the enterprise	**0**	**0**
		88	– Involvement of the external stakeholders in the CSR audit/control of the enterprise	**0**	**0**
		89	– Partnerships with stakeholders at the corporate level (NGOs, State, etc.)	**0**	**0**
		90	– Annual meeting with stakeholders held by the CSR director	**0**	**0**
		91	– Publication of a CSR report	**0**	**0**
			Total	**8**	**2878**
			CSR Ratio	**0.0879**	**0.2177**
			Total numbers in annual report	**91**	**13215**